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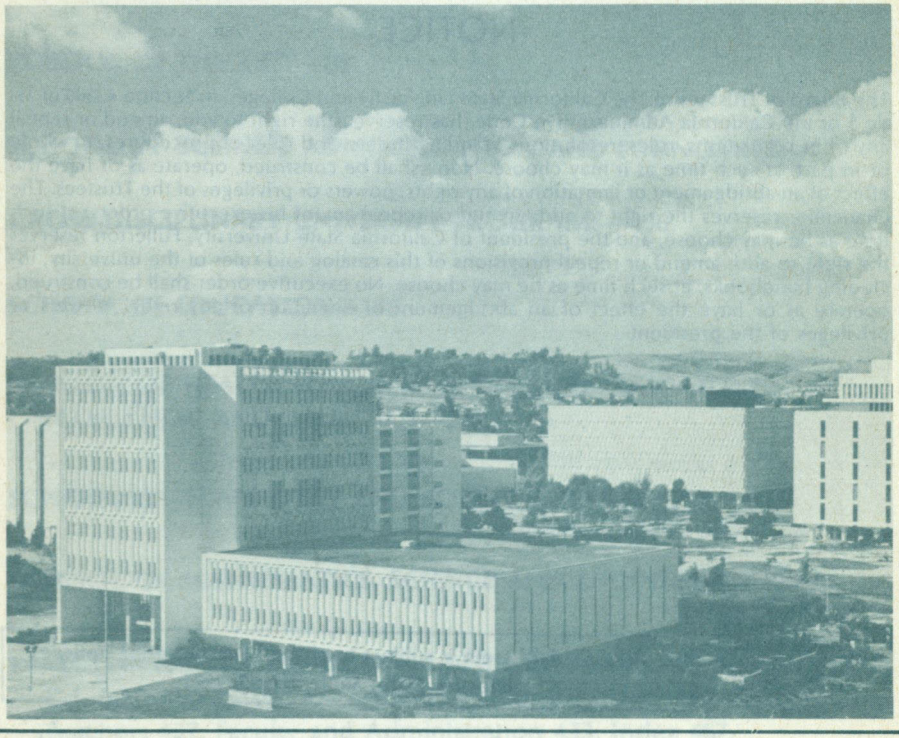
STATE
UNIVERSITY

FULLERTON

CALIFORNIA STATE UNIVERSITY FULLERTON

1975-1976 GENERAL CATALOG



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THIS CATALOG

Within this catalog may be found general academic and administrative information as well as specific descriptions of the departments, their majors and the courses offered in each. The first major part contains orienting information such as the calendar, materials on The California State University and Colleges, an overview of Cal State Fullerton and facts about student services and activities on the campus.

The subsequent sections of the catalog are concerned with: admission, registration, records and regulations; academic advisement; and university courses. The next sections, organized by schools and divisions, describe the departments and the programs of study and courses they offer. The final part of the catalog contains directories: a listing of individuals and groups participating in the governance of the university and with information on advisory councils, auxiliary organizations, and the faculty and administration. An index can be found at the end to help the reader locate specific items he needs or wishes to know about.

Because this catalog must be prepared well ahead of the academic year it covers, changes in some programs and rules occur. The *Class Schedule* and subsequent errata sheets are the final authority in regard to classes offered, instructors and revisions of regulations. This publication can be bought for a small fee from the Titan Bookstore.

Through the assistance of the Department of Art, William Hartshorn has done the graphic work on this catalog. Mark Boster has taken the photographs. The final organizing and editing was done by Kay Adams, in the Office of Academic Administration, and Ruth Pecsok and Jerry Keating in the Office of Public Affairs.

NOTICE

The Board of Trustees of The California State University and Colleges, in Section 43800 of Title 5 of the California Administrative Code, has reserved the right to add, amend or repeal any of its regulations, rules, resolutions, standing orders, and rules of procedures, in whole or in part, at such time as it may choose. None shall be construed, operate as or have the effect of an abridgement or limitation of any rights, powers or privileges of the Trustees. The chancellor reserves the right to add, amend or repeal any of his executive orders, at such time as he may choose, and the president of California State University, Fullerton reserves the right to add, amend or repeal provisions of this catalog and rules of the university, including handbooks, at such time as he may choose. No executive order shall be construed, operate as or have the effect of an abridgement or limitation of any rights, powers or privileges of the president.

All material herein is subject to change without prior notice
Effective Date: September 2, 1975

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GENERAL INFORMATION

CAL STATE FULLERTON CALENDAR FOR 1975-76

1975

June

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1976

▒ CLASSES

□ HOLIDAYS

SUMMER SESSION 1975

June 9, Monday ..... Twelve weeks of instruction begins. Registration and classes

July 4, Friday ..... Independence Day holiday—campus closed

August 1, Friday ..... Filing period opens for application to the spring semester 1976

August 29, Friday ..... Summer session instruction ends; effective date of graduation for those completing requirements

FALL SEMESTER 1975

November 1, 1975

Initial period for filing applications for admission to the fall semester 1975 began for all students and former students not in attendance during the spring semester 1975.

September 1, Monday ..... Labor Day holiday—campus closed

September 2, Tuesday ..... Academic year begins. Advisement, orientation and registration begin. See *Class Schedule* for details

September 6, Saturday ..... Last day to register without late registration fee. Application deadline for baccalaureate degree candidates for graduation, June 1976 and August 1976, and for January 1976 master's degree candidates to request a graduation check

September 6, Saturday ..... Rosh Hashanah

September 8, Monday ..... Instruction begins. Admission Day—campus open

September 15, Monday ..... Yom Kippur—campus open

October 13, Monday ..... Columbus Day—campus open

November 1, Saturday ..... Filing period opens for applications to the fall semester 1976

November 4, Tuesday ..... Election Day—campus open

November 11, Tuesday ..... Veterans' Day—campus open

November 27-28, Thursday-Friday .. Thanksgiving recess—campus closed

December 16, Tuesday ..... Last day of classes

December 17-20, Wednesday-Saturday ..... Semester examinations

December 22, Monday ..... Winter recess begins

January 5, Monday ..... Winter recess ends. Grade reporting

January 6, Tuesday ..... Semester ends; effective date of graduation for those completing requirements. All grade reports due

SPRING SEMESTER 1976

August 1, 1975

Initial period for filing applications for the spring semester 1976 begins for all new students and former students not in attendance during the fall semester 1975.

January 22, Thursday	Semester begins. Departmental and faculty meetings through Friday, January 23
January 26, Monday	Advisement, orientation and registration begin. See *Class Schedule* for details
January 31, Saturday	Last day to register without late registration fee. Application deadline for baccalaureate degree candidates for graduation January 1977, and for June 1976 and August 1976 master's degree candidates to request a graduation check.
February 2, Monday	Instruction begins
February 12, Thursday	Lincoln's Birthday—campus open
February 16, Monday	Washington's Birthday holiday—campus closed
April 5, Monday	Martin Luther King, Jr., Memorial Observance Day—campus open
April 12, Monday	Spring recess begins
April 19, Monday	Instruction resumes
May 22, Saturday	Last day of classes
May 25-28, Tuesday-Friday	Semester examinations
May 30, Sunday	Commencement
May 31, Monday	Memorial Day holiday—campus closed
June 1, Tuesday	Grade reporting
June 2, Wednesday	Semester ends. Effective date of graduation for those completing requirements. End of academic year. All grade reports due

SUMMER SESSION 1976

June 7, Monday	Twelve weeks of instruction begins. Registration and classes
July 5, Monday	Independence Day holiday—campus closed
August 27, Friday	Summer session instruction ends; effective date of graduation for those completing requirements

THE CALIFORNIA STATE UNIVERSITY AND COLLEGES

The individual California State Colleges were brought together as a system by the Donahoe Higher Education Act of 1960. In 1972 the system became The California State University and Colleges and 14 of the 19 campuses received the title *University.*

The oldest campus—San Jose State University—was founded in 1857 and became the first institution of public higher education in California. The newest campus—California State College, Bakersfield—began instruction in 1970.

Responsibility for The California State University and Colleges is vested in the Board of Trustees, whose members are appointed by the Governor. The Trustees appoint the Chancellor, who is the chief executive officer of the system, and the presidents, who are the chief executive officers on the respective campuses.

The Trustees, the Chancellor and the presidents develop systemwide policy, with actual implementation at the campus level taking place through broadly based consultative procedures. The Academic Senate of The California State University and Colleges, made up of elected representatives of the faculty from each campus, recommends academic policy to the Board of Trustees through the Chancellor.

Academic excellence has been achieved by The California State University and Colleges through a distinguished faculty, whose primary responsibility is superior teaching. While each campus in the system has its own unique geographic and curricular character, all campuses, as multipurpose institutions, offer undergraduate and graduate instruction for professional and occupational goals as well as broad liberal education. All of the campuses require for graduation a basic program of "General Education—Breadth Requirements" regardless of the type of bachelor's degree or major field selected by the student. A limited number of doctoral degrees is offered jointly with the University of California.

Presently, under the system's "New Approaches to Higher Education," the campuses are implementing a wide variety of innovative programs to meet the changing needs of students and society. Among pilot programs under way are instructional television projects, self-paced learning plans, minicourses and credit-by-examination alternatives. The Consortium of The California State University and Colleges fosters and sponsors local, regional and statewide external degree and certificate programs to meet the needs of individuals who find it difficult or impossible to attend classes on campus.

Enrollments in fall 1974 totaled 292,000 students, who were taught by a faculty of 16,000. Last year the system awarded over 57 percent of the bachelor's degrees and 35 percent of the master's degrees granted in California. Over 465,000 persons have been graduated from the 19 campuses since 1960.

CAL STATE FULLERTON: AN OVERVIEW

GOVERNANCE

Governance on the campus level at California State University, Fullerton is the responsibility of the president and his administrative staff. Working closely with the president are a number of faculty and student groups which initiate, and review and recommend for approval university programs, policies and procedures. Although the president is vested with the final authority on all university activities, maximum faculty and staff participation in campus decision-making and governance have become traditional. Increasingly, students are becoming actively involved and student representatives are found on almost all university, school, and departmental committees and policy-making bodies.

ADVISORY BOARD

The California State University, Fullerton Advisory Board consists of community leaders interested in the development and welfare of the university. The board serves the president in an advisory capacity, particularly in matters which affect university and community relations. Members are nominated by the president and appointed by the Board of Trustees for terms of four years.

PHILOSOPHY AND OBJECTIVES

The main functions of an institution of higher learning are to disseminate and advance knowledge. The philosophy which guides an institution can limit or promote the successful achievement of these objectives. Therefore, from its inception, Cal State Fullerton has directed its educational program toward the fullest possible development of the individuals who participate in it. For both faculty and students this entails a commitment to high standards of scholarship, a comprehensive rather than a narrow approach to major areas of study, and a concern with research and other creative activity.

The university believes that an enduring educational experience must be founded upon exploration of one's cultural heritage, through basic studies in the liberal arts and sciences, and that it can and should at the same time prepare for success in a chosen occupation or profession. Accordingly, the required general education program has as its objective the development in each student of:

1. The effective use and interpretation of the written and spoken language.
2. An understanding of the wide range of human endeavor and accomplishments in liberal arts and sciences, their interrelationships, and the various choices and values they represent.
3. An understanding of information and principles in some areas of the liberal arts and sciences in sufficient depth to encourage critical and creative thought and expression.
4. A spirit of inquiry into the past and into the future, in order to cope with conditions in the continually changing world.
5. An understanding of the rights, privileges and responsibilities of citzenship in the community and nation, and of effective participation in today's world.

In addition, the university requires of all students who are candidates for a degree—whatever their special purpose—the pursuit of a subject major.

RETROSPECT AND PROSPECT

Cal State Fullerton was the 12th State College in California to be authorized by the Legislature. The following year, 1958, resulted in the designation of a site in northeast Fullerton. This site was purchased in 1959, when Dr. William B. Langsdorf was appointed as founding president, the first staff was selected and plans for opening the new college were

made. Orange County State College started classes for 452 full-time and part-time students in September, 1959, using leased quarters for its administrative offices on the Fullerton Union High School campus and for its classrooms at Fullerton's Sunny Hills High School. In the fall of 1960, the college opened classes on its own campus where it occupied 12 temporary buildings. The name changed to Orange State College in July, 1962, to California State College at Fullerton in July, 1964, to California State College, Fullerton in July, 1968 and to California State University, Fullerton, in June, 1972. The first permanent building, the six-story Letters and Science Building, was occupied in 1963.

Today, there are many dramatic evidences of additional, rapid growth. Ten large and modern permanent buildings have been completed, and enrollment has climbed to approximately 20,000. Since 1963 the curriculum has expanded to include lower division work and many graduate programs. More than $60 million already has been invested in land, buildings and equipment—a sum expected to increase appreciably by the 1980's when the university is due to reach its projected peak enrollment of nearly 27,000.

During this rapid growth, the university also has achieved a growing reputation for academic excellence. Cal State Fullerton began this spectacular development at a period when the citizens and government of California were revising and greatly expanding their commitments to quality public higher education. The Donahoe Higher Education Act of 1960 established the California State Colleges as a system under an independent Board of Trustees, redefined the functions of the State Colleges, and related them to both the community colleges and to the University of California system. In this atmosphere of public support, Cal State Fullerton was the first of the State Colleges to submit and secure approval for a five-year master curricular plan and one of the first three to secure approval of a master building plan. It also was a university that was able to think in terms of its ultimate enrollment objectives from the beginning. During the same period, Orange County also was experiencing its own unprecedented growth.

In 1969-70, it became apparent that colleges and universities statewide and nationally were entering a new period of development. Growing financial problems on all levels of government, mounting criticisms of contemporary educational policies and practices, and a loss of much public support for education were symptomatic of much deeper and more widespread problems and changes in American society and schools. In the context of what increasingly seemed to be the emergence of a new, and in many ways, different type of culture and world, the colleges and universities (like other major institutions) were acutely experiencing the confusions and conflicts such basic and rapid cultural transformations generate.

On May 26, 1971, Dr. L. Donald Shields, who had served as acting president for seven months, was appointed the second president of Cal State Fullerton. Under his leadership, the university is rethinking and improving the functions it serves in higher education even as it also is pursuing more effective working relationships with the community.

THE HUMAN AND NATURAL ENVIRONMENT OF THE UNIVERSITY

Fullerton, a city of approximately 90,000 inhabitants, is located in northern Orange County, about 30 miles southeast of central Los Angeles. It is in the center of the new Southern California population center and within easy freeway access of all the diverse natural and cultural attractions of this region.

Orange County, with an area of 782 square miles, is the 48th in size of California's 58 counties, but it is the second largest county in population (1.6 million), and in total personal income. Orange County has experienced during the last 20 years almost unprecedented growth as communities continue to occupy the diminishing expanses of open land.

Today, there co-exists an interesting mixture of the old and new economic and life styles in Orange County. Underneath the soil, archeologists and bulldozers uncover traces of the hunting and gathering Indian bands which flourished at least as early as 4,000 years ago in what was a benign and bountiful region. More visible traces remain of the Spanish and Mexican periods and cultures: Mission San Juan Capistrano, which began the agricultural tradition in Orange County, and subsequent adobes from the great land grants and ranches

that followed. Additionally, both customs and many names persist from this period, and so does some ranching. The architectural and other evidences of the subsequent pioneer period are still quite visible: farmsteads, old buildings from the new towns that then were established in the late 1800's, mining operations, and traces of early resort and other types of promotional activities. For about 100 years, farming was the main economic activity with products such as grapes, walnuts, vegetables, and increasingly oranges, replacing the older wheat and cattle ranches. Today, agriculture still is very important. Orange County ranks high among California's counties in mineral production with its oil, natural gas, sand and gravel, and clay mining and processing activities.

The extensive development of the 42 miles of beaches in Orange County and the development of such attractions as Disneyland, Knott's Berry Farm, the Laguna Festival of Arts and Pageant of Masters, and the Anaheim Stadium and Convention Center continue to make tourism an increasingly important activity. So does the Mediterranean-type climate with: rainfall averaging 14 inches per year; and generally mild days (with either freezing or 100-degree temperatures uncommon) with frequent morning fogs during the summer. Both downtown Los Angeles and the Pacific Ocean can be reached by car in half an hour, and mountain and desert recreation areas are as close as an hour's drive from the campus.

THE CAMPUS AND ITS BUILDINGS

Once part of a vast orange grove, Cal State Fullerton's attractively landscaped campus now consists of 225 acres bounded on the south by Nutwood Avenue, on the west by State College Boulevard, on the north by Yorba Linda Boulevard and on the east by the Orange Freeway.

The portion of Orange County immediately surrounding the campus is predominantly suburban: it includes housing tracts, apartment complexes, shopping centers, space-age industrial firms and still remaining orange groves and undeveloped hills and fields.

Other educational institutions also are part of the immediate environment. The new campus of the Southern California College of Optometry, with its four modernistic buildings, opened in the spring of 1973. It is just north of Cal State Fullerton. To Cal State's immediate south is Pacific Christian College, a liberal arts school with a Bible emphasis, where students started classes in the fall of 1973. The Western State University College of Law, California's largest law school, occupied its new campus to the immediate west of Cal State in January, 1975.

The Cal State Fullerton campus itself has a high density urban layout of buildings and facilities developed to serve a predominantly commuting public. The university's modern buildings were planned so that no student should need more than 10 minutes to go from one class to another. The campus is surrounded with landscaped parking facilities.

Even though most of the campus has been devoted to modern buildings, facilities for athletic activities, parking lots or attractively landscaped areas, there still remain over 20 acres of the original orange grove, land of which will become an arboretum within the next few years. Several older buildings also remain, including one which has been converted into the attractive University Club and another into the Foundation headquarters.

The first permanent building, the Letters and Science Building, was occupied in 1963. This imposing structure, master planned to serve ultimately as a facility for undergraduate and graduate science instruction and research, has been used to house other programs until they could warrant new facilities of their own.

Since 1963, growth has been rapid. The Music-Speech-Drama Building was completed in 1964, the Physical Education Building in 1965, the Library Building in 1966, the Commons cafeteria facility in 1967, the Humanities-Social Sciences Building and Art Center in 1969, and William B. Langsdorf Hall (Administration-Business Administration) and the Engineering Building in 1971, and the Student Health Center in 1974. Langsdorf Hall and the Engineering Building reflect a commitment to programs with high community involvement. In addition to the many undergraduate students who study and learn in these buildings, many professional engineers and local businessmen also use these very advanced facilities to continue their educations.

New buildings are being planned to keep pace with university enrollment increases. The Education-Classroom Building and the University Center (Student Union) presently are being constructed and will be available for use in 1976. Next on the construction schedule is an addition to the Art Center.

Planned for the northeast corner of the campus is a 25-acre Arboretum. It will include a 17-acre contoured botanical garden, a four-acre organic garden and a four-acre experimental plot. The ecologically arranged floras will depict habitat from the desert to the tropics. Upon completion, the Arboretum will include Heritage House, a 19th-century dwelling currently being restored, as well as an outdoor amphitheater. Plans call for Heritage House to serve as a cultural museum for North Orange County as well as an Arboretum office, while the amphitheater will seat 400 persons and feature Shakespearean and children's summer theater productions.

The ample freeway and surface street accommodations that approach the main entrance to the university's modern campus also provide comparatively easy access to the great and diverse learning resources available in Southern California: many other colleges and universities; museums, libraries, art galleries; zoos; and the wide variety of economic, governmental, social, and cultural activities and experiments that may be found in this dynamic and complex region of California and the United States.

STUDENTS OF THE UNIVERSITY

Much of the distinctive character and learning atmosphere of any campus comes from the nature and vitality of its students. Diversity, the synthesis of academic with work and family interests, strong high school records and relative maturity are some of the predominant characteristics of the student body at Cal State Fullerton. The campus is both a large and a still rapidly growing one despite its comparative newness. Over 20,000 students were enrolled in 1974-75, and this year's total is expected to be 21,000.

The university is a commuter institution. Less than 1 percent of the students live in university affiliated housing, 24 percent work 35 hours a week or more; and yet nearly 53 percent take 12 or more units of coursework each semester. Seventy-five percent come from a radius of 15 miles from the campus, but many have lived elsewhere before coming to Orange County.

Twenty-five percent are lower division students, 52 percent are university juniors and seniors, and another 23 percent are doing baccalaureate or graduate work. Over seven-eighths of the upper-division students are transfers from other institutions, principally community colleges. Fifty-seven percent are men, and the median age is 24. Forty-three percent are women, and the median age is 22. Thirty-seven percent are married. One third of the students participate in both the day and evening programs during the regular semesters, and one tenth are involved only in the late afternoon or evening program.

Many already have clearly defined disciplinary, professional, and artistic interests. Some still are searching for a meaningful vocation and are in the process of exploring different fields of knowledge and the work that might develop from them. Most are trying to understand themselves and their world better so that they can become more effective human beings and citizens.

THE FACULTY

Central to the effectiveness of any institution of higher learning is the quality and dedication of its faculty. Cal State Fullerton is proud of the high caliber of its faculty and of the commitments of its individual faculty members to teaching and scholarship.

In the fall of 1974, there were 705 full-time and 400 part-time faculty members teaching on the campus. For the full-time faculty members the median age was 38, and almost all had had some previous college or university teaching experience before coming to Fullerton. Faculty members also have a wide variety of experiences and accomplishments in research, the arts, professional work, consulting, and other creative activities. Seventy-three percent of the full-time faculty have earned their doctorate degrees, and these have come from more than 100 major colleges and universities.

Criteria for selection to the faculty include mastery of knowledge in an academic specialty, demonstrated skill and experience in teaching, and continuing interest in scholarly study and research. Retention and promotion criteria also include service to the university and to the community.

ACADEMIC PROGRAMS

The university offers a full four-year program of freshman through senior work as well as credential programs for teachers and graduate, master's level work in many disciplines and professional fields. The university provides a diversity of educational opportunities to satisfy the broad range of backgrounds and interests of its students. Over 1,600 courses have been developed to provide learning from introductory to highly specialized, in-depth and advanced, work in a wide variety and growing number of fields of study.

Fullerton currently awards the baccalaureate degree in 40 fields of knowledge. More advanced work and the master's degree are awarded in 33 programs. Many of the baccalaureate and master's degree programs offer a choice of specializations (or options or emphases). Additionally, at least a few courses are given in many fields or subject matter areas in which some other colleges and universities offer full degree programs. Often these courses are given by a number of different departments. Such an interdisciplinary trend fits not only with broader, cultural integration of knowledge but also with the recent development of a growing number of interdisciplinary efforts, including some new degree programs, at Fullerton.

Certain traditions have developed with the academic programs at Cal State Fullerton. One is that of relative balance in strength of the programs in the physical sciences, the social sciences, the humanities and the fine arts. Another is that of academic excellence in the various specializations offered by the university and the comparative freedom given to departments and professional schools to develop the depth programs for their majors. Another pattern is the great freedom given to most students in selecting courses to satisfy their general education or breadth requirements. Still other tendencies include the encouragement of: a diversity of approaches to teaching; experimentation and innovation in courses and programs; and student participation in curricular planning and decision-making.

ACCREDITATION

Cal State Fullerton is fully accredited by the Western Association of Schools and Colleges. Specific programs have been accredited by the California State Board of Education, the American Assembly of Collegiate Schools of Business, the American Chemical Society, the American Council on Education for Journalism, the American Speech and Hearing Association, the Engineers' Council for Professional Development, the National Association of Schools of Art, the National Association of Schools of Music, the National Association of Schools of Theater and the National Council for Accreditation of Teacher Education.

Cal State Fullerton is a member of the Council of Graduate Schools in the United States and the Western Association of Graduate Schools.

SCHEDULE OF CLASSES

The regular, educational program of the university is offered continuously from 8 a.m. until 10 p.m. Monday through Friday. The *Class Schedule,* listing all classes meeting during these hours, is prepared for each semester and can be purchased at the Titan Bookstore.

The classes held during the late afternoon and evening hours are part of the regular university program. Students enrolling in these classes must have met all admission requirements of the university, including the filing of an official application for admission, the filing of complete official transcripts from other schools, colleges and universities and in the case of lower-division applicants. the completion of required tests for admission.

The classes which are offered during the summer sessions and by means of extension do not require admission to the university, but some courses do require specific prerequisites. Special schedules are provided for the summer sessions and extension programs.

CONTINUING EDUCATION—SUMMER SESSION

The summer session is designed to meet the needs of students who are interested in the enrichment of their educational background as well as completing requirements for a degree or credential. Summer session courses are the equivalent of university courses offered in the fall and spring semesters, and apply toward graduation and residence requirements as well as teaching credential requirements. Both day and evening classes are scheduled. Some courses have prerequisite requirements which students must meet. Master's degree work is also offered.

The dates for the 1976 summer session are June 7 through August 27. Also offered are wide varieties of course durations; with a number of two- and three-week workshops, intensified courses, and expanded eight-week courses. In addition to much of the regular curriculum, summer offerings include many unique and innovative programs for teachers and other professional groups.

A summer session class schedule is usually available by February, and may be obtained by writing the Office of Continuing Education. This schedule contains information on matters such as costs and registration.

Admission to the Summer Session

Although the quality of the program and most of the course offerings are the same as in the regular session, the university does not require an advance application or transcripts from students registering for credit courses in the summer session. However, students are expected to have satisfied the prerequisites for the course in which they register. Admission to summer session does not grant admission to the regular session. Admission to the summer sessions is completed at registration.

Authorized Student Load

A normal full-time program of study in the summer session is 1⅓ units of coursework per week of instruction. *Any student who enrolls by error in more than 18 units during a 12-week summer session will find that credit for excess units will not be counted toward a degree, credential or other objective.* Any other exceptions must be petitioned through the Office of Admissions and Records.

CONTINUING EDUCATION—EXTENSION PROGRAMS AND SERVICES

The resources of Cal State Fullerton are made available through extension programs to those who are unable to take university work in residence but who wish to pursue university-level study for purposes of resuming an interrupted or incompleted education, to enhance professional or vocational abilities, or for personal growth and fulfillment.

Extension offerings include regularly established university courses as well as courses, workshops, and conferences designed to meet the needs of particular groups and communities, and may be initiated at various times during the year. Any adult may enroll in an extension course; it is not necessary to be enrolled in the university.

The maximum extension credit which will be accepted toward baccalaureate degrees is 24 semester units. Nine semester units of extension credit may be applied toward a master's degree with appropriate approvals. Extension credit may not be used to fulfill the minimum residence requirements for graduation.

Veterans may use the educational benefits available to them under federal and state laws to enroll in university extension courses provided the classes are part of their prescribed and recognized objectives as aprpoved by the Veterans Administration.

For information about establishing an extension course, or for current offerings, write or telephone the Extension Office.

INTERNATIONAL PROGRAMS

An overseas study program is offered by The California State University and Colleges International Programs, under which students may enroll for a full academic year simultaneously at their home campus, where they earn academic credit and maintain campus residency, and at a distinguished foreign university or a special program center.

Cooperating universities abroad include the University of Provence, France; the University of Heidelberg, Germany; the University of Florence, Italy; the Universidad Ibero-Americana, Mexico; the University of Granada and the University of Madrid, Spain; the University of Uppsala, Sweden; and Waseda University, Japan. In the United Kingdom, cooperating universities, which may vary from year to year, include Dundee, Leicester, London, Oxford, Liverpool, Lampeter and Sheffield. In addition, California State University and Colleges students may attend a special program in Taiwan, Republic of China, an architectural program in Copenhagen, Denmark, and an agricultural program in New Zealand.

Eligibility is limited to students who will have upper division or graduate standing during their year of participation, who have a (2.5) overall grade-point average, who show ability to adapt to a new environment, and, who in the cases of France, Germany, Mexico and Spain, are proficient in the language of instruction at the foreign university. Selection is made by a faculty committee on the students' home campus and by a statewide faculty committee.

The International Programs are supported by state funds to the extent that such funds would have been expended had the student concerned continued to study in California. Students assume costs for predeparture orientation, insurance, transportation, housing and meals. Home campus registration fees, tuition on the home campus for out-of-state students (if the student is not a California resident) and personal incidental expenses or vacation travel costs while abroad are also paid by the student. The Office of International Programs collects and administers funds for those items which the program must arrange or can negotiate more effectively, such as home campus fees, orientation costs, insurance, outbound transportation, and, in some centers, housing. Students accepted in the International Programs may apply for any financial aid available in their home campus, except work-study.

Application for the 1976-77 academic year must be submitted before February 13, 1976 (except for New Zealand and United Kingdom applicants who must submit applications by May 16, 1975 and January 9, 1976, respectively). Applicants are notified of acceptance by April 1, 1976 (New Zealand by June 1, 1975). Detailed information may be obtained from the director of international education and exchange at Cal State Fullerton, or by writing to The California State University and Colleges International Programs, 5670 Wilshire Boulevard, Los Angeles 90036.

INSTRUCTIONALLY RELATED SERVICES

The university provides an extensive program of instructionally related services for its students and faculty. These include the universitywide services of the university Library, the Instructional Media Center and the Computer Center described in the following sections. Five offices, Academic Programs, Academic Administration, Academic Services, Administrative Planning and Institutional Research, make studies on university programs and assist in coordinating, planning educational operations and sharing information on educational trends and innovations on the Fullerton campus with those going on elsewhere.

The Library

The Library Building, completed in 1966, is shared by the Instructional Media Center, which has the lower level; the School of Education, which is located on the second floor; and the Library, which utilizes the first floor and third through sixth floors. As its collection grows and the enrollment increases, the Library will occupy the second floor of the building. Designed presently to seat approximately 1,150 persons and to house about 300,000 books as well as related materials, the building contains group study and seminar rooms, study carrels for graduate students and facilities for individual and group listening, for the reading of microform materials and for copying materials in book and microform.

The main book collection will contain about 360,000 volumes at the beginning of the 1975-76 academic year. During that year about 15,000 volumes will be added. Besides attempting to

build a balanced collection of basic works, the Library has concentrated its efforts in several subject areas. As a result relatively strong collections are now available in such fields as World War II, international relations since 1870, Kant, Shakespeare, Melville, ichthyology, angling, historiography and historical bibliography, library science, mathematics and British, United States, California history, and the history of cartography. A selective depository for U.S. government documents since 1963, the Library will house about 142,000 U.S. documents by the beginning of the 1975-76 academic year. The Library has, in addition, some 20,000 reels of microfilmed U.S. government documents, chiefly State Department Archives, but also such items as the Congressional Record and the papers of various presidents as well as microfiche copies of the material in Project ERIC. The Library is a depository for California state documents and for California curriculum materials, and includes current samples of state adopted texts, curriculum guides from all over the United States, and non-book instructional materials.

The Library subscribes to about 4,400 periodicals. It has some 25,000 volumes of bound periodicals and has extensive microform holdings in backfiles of periodicals and of local, national, and international newspapers. Titles held exceed 6,200.

Among its major holdings are the Human Relations Area Files, the British 19th-Century Parliamentary Papers, the Parliamentary Debates, a microfilm edition of the Published Colonial Records of the American Colonies, 1619-1800, and in conjunction with the Patrons of the Library, the Langsdorf Anniversary Collection of Grabhorn Press and Book Club of California books.

Library hours are posted in the lobby and listed, with other key information about the Library, in the Library Guide, which is available at the information desk in the lobby as well as at the circulation and reference desks. Assistance in the use of the card catalog and other Library facilities may be obtained at the first floor information desk. Librarians with various subject backgrounds are on duty at the reference desk on the third floor to aid students and faculty in further use of the Library's resources. Library tours are available at the beginning of each semester, and a course in bibliographic research is conducted each semester.

Instructional Media Center

The Instructional Media Center, located in the lower level of the Library Building, includes both extensive audiovisual and instructional television services.

Services to the faculty and students include encouragement and use of all types of audiovisual equipment and materials, rental of films from major rental libraries, and for faculty: production of transparencies, charts, graphs, diagrams, audiotapes and cassettes, tele-lectures plus all types of still and motion picture photography. Instructional television services include distribution of off-the-air or videotaped programs from master control to selected classrooms, videotaping facilities and playback both in the studio or classroom and off the campus.

The center is responsible for the coordination and development of instructional applications of media, and the improvement of programs and materials designed for instructional use. Liaison and service relations are maintained with other media learning-oriented units on the campus. Personnel of the center are prepared to assist the faculty in their analysis of media needs as related to the procurement or production of materials pertinent to instructional development.

Computer Center

The Computer Center, located on the second floor of Langsdorf Hall, serves as the central computing facility for all of the university. As the central campus computing facility, it provides support for instruction, research and administrative computing services.

The computing system at Fullerton is integrated into the State Distributed Computer Network which provides a wide range of computing services. The local campus computer is a CDC 3150 with 48,000 words of memory, card reader, card punch, printer tape drives and disk drives. As a component of the network, the Computer Center can communicate with a large-scale CDC 3300 Computer located at the Division of Information Systems in Los Angeles. The Distributed Computer Network also provides time-sharing services on a CDC 3170 and access to an IBM 360/91 at UCLA. Keypunch, teletype terminals, a sorter and an in-

terpreter for student use are available in an open shop area located in the Computer Center.

A computer science degree is offered jointly by the Departments of Quantitative Methods and Mathematics and the Division of Engineering. Many other departments, including Sociology, Geography and Accounting, use the computer facility in their coursework. Students' jobs receive the highest priority of all work bath-processed on the CDC 3150. The Computer Center maintains a library of application programs for general use. Such languages offered by the system include FORTRAN, COBOL, ALGOL, BASIC and COMPASS (the assembly language for CDC).

Office of Academic Administration

The Office of Academic Administration coordinates the following instructionally related activities: Academic Services; Administrative Planning; Admissions and Records; Computer Services; and Institutional Research.

Office of Academic Services

The Office of Academic Services is responsible for the preparation of the *Class Schedule* and the *Faculty Handbook*. The office coordinates all changes and adjustments to these documents, administers and prepares the staffing formula for the university, and has a primary responsibility for course section and facilities utilization reporting during and after registration.

Office of Administrative Planning

The Office of Administrative Planning has responsibility for the development of improved administrative structures and resource allocation techniques. Pursuant to Senate Bill 1239, Cal State Fullerton is committed to the design and implementation of a decentralized system based on program goals and objectives. In addition, the Office of Administrative Planning has responsibility for the coordination of the activities of the Office of Institutional Research and the Computer Center. The Office of Administrative Planning also provides analytic support to the Office of Academic Administration.

Office of Institutional Research

The Office of Institutional Research serves as an information center and a problem-solving agency which collects, interprets and disseminates information. These data include enrollment histories and projections, distributions of data according to selected factors (e.g., level, type of instruction, unit value), summaries of student characteristics, and other statistics related to student population, course offerings and resources. Most of the data collection and analysis is related to the reporting requirements of The California State University and Colleges and other agencies. However, the office evaluates data, provides assistance in design of specialized studies and also conducts analytic studies to serve the decision-making and policy-formulating needs of Cal State Fullerton.

Office of Academic Programs

The Office of Academic Programs is responsible for coordinating the development of educational programs; providing an all-university perspective on educational activities at the campus; and stimulating academic innovations. The office also is responsible for providing leadership for the cross-school programs (Computer Science, Environmental Studies, Human Services, Interdisciplinary Center, Latin American Studies, Liberal Studies, Russian Area Studies, Social Sciences, Special Major, Technological Studies). The office provides administrative assistance and coordination with all-university pilot proposals for special funding by the Chancellor's Office and for minigrants to support innovative projects.

The office provides administrative assistance and coordination with directors of academic advisement, the university Library and the Instructional Media Center. Particular responsibilities include leadership with the Curriculum Committee, the General Education Committee, the Committee for Educational Development and Innovation, and other individuals and groups concerned with changing and improving the educational programs of this institution. Responsibilities relating to the Chancellor's Office include regular review and updating of the Academic Master Plan; Cal State Fullerton coordination of program performance review; and staff reports for the Chancellor's Office relating to academic planning.

Careful liaison is maintained with the Office of Academic Administration for university-level approval of all new courses in the programs and preparation of the university catalog.

RESEARCH ORGANIZATIONS AND SERVICES AND SPECIAL STUDY CENTERS

Much and varied research is going on at Cal State Fullerton. Most of this is being done by individual faculty members and students as part of their scholarly and professional development activities. Research training is an important part of the education for more advanced work in most disciplines and professions, and many of our students are encouraged and assisted to learn and apply research skills in either independent or team projects.

The Research Committee of the Faculty Council and the Contracts and Grants Office provide stimulus, coordination and direction to the research efforts of the university.

A Student Research Fellowship program and a Faculty Research Grant program award "seed grants" to promising research projects every year. Services supporting research are given by the Cal State Fullerton Foundation, the university Computer Center, and the university Library. Augmenting the on-campus aids to research are the great and diverse resources available for study in the Southern California area.

A number of special centers with specific research objectives are operating at the university. These include the Center for Research in Business, Economics and the Community (with its affiliated Center for Economic Education and the Real Estate Research Institute), the Center for Governmental Studies, the Urban Research Institute, the Institute for Molecular Biology, the Institute for Reading, the Laboratory for Phonetic Research, the Special Education Clinic, the Speech and Hearing Clinic and the Tucker Wildlife Sanctuary.

Center for Research in Business, Economics and the Community

The Center for Research in Business, Economics and the Community provides:

1. School of Business Administration and Economics and other faculty with additional opportunity to participate in research activities in order to improve and reinforce teaching and professional competence;
2. Professional research and consultation services to the local area normally considered as being serviced by the university, including private business, labor, agriculture, and local government agencies;
3. Educational services, e.g., seminars and conferences, to improve the level of understanding and competence of local decision-makers in specialized areas relating to business administration and economics; and
4. A focus, through research, for the education of students and citizens in the business and economic problems of the local community, and for the involvement of faculty in such educational programs.

The operations of the center are carried out by constituent institutes, programs, and projects for which the center provides overall leadership and coordination. The institutes are long-term, continuing organizations designed to operate in selected major problem and functional areas of strategic significance and concern to the school. Programs and projects within the center are organized to carry on work outside the institute's area of interest, which are a smaller scale and for a shorter time-span.

Currently included within the Center for Research in Business, Economics and the Community are the affiliated Center for Economic Education and the Real Estate Research Institute.

Center for Economic Education

The Center for Economic Education is one of many such centers at colleges and universities in the United States working with the national Joint Council on Economics Education to expand economic understanding. Center programs include (1) services to schools and colleges, individual educators, and the community; (2) research and professional training; and (3) operation of an economic, education information center. The center consists of a broadly

based executive policy board; an administrative staff; and formally organized groups of participating users. Although operating autonomously, the center is affiliated with the Center for Research in Business, Economics and the Community.

Real Estate Research Institute
The Real Estate Research Institute conducts a continuing research program, with special emphasis on urban development in Orange County. Studies are undertaken in cooperation with various public and private agencies, but primary funding is from the California State Department of Real Estate. Opportunities exist for student involvement.

Center for Governmental Studies

The Center for Governmental Studies was established and organized in 1965 under the direction of the Department of Political Science. Its purpose is to promote research and scholarship among both faculty and students, and to assist academic, governmental, professional and civic groups in the goals and programs. This is accomplished by offering assistance in the study of local governmental problems, providing instruction and experience in research techniques and methodology, and sponsoring community institutes and seminars.

Urban Research Institute

The Urban Research Institute is a joint venture between local government and the university. The institute has an advisory board representing governments and academic institutions in the area. The research on local problems is done by teams consisting of practitioners, elected officials, community representatives and academicians selected for their expertise in the areas under study. It is an attempt to fuse the experience and reality orientation of practitioners with the resources, knowledge and skills of the academic community in solving problems facing the residents and governments in Orange County.

Institute for Molecular Biology

The Institute for Molecular Biology was established for the purpose of promoting an atmosphere congenial to research and creative activity in the molecular biological sciences. It is an interdisciplinary organization comprised of certain faculty from the Departments of Biological Science, Chemistry and Physics. The institute is dedicated to the pursuit of problems of human welfare, utilizing an approach at the cellular and molecular level of inquiry. Its purposes are: (1) to foster and encourage communication of ideas and information among its membership for mutual professional improvement; (2) to encourage students to adopt affiliation with the membership and to adopt an interdisciplinary understanding of their particular areas of emphasis; (3) to foster an active research program on the part of the membership on problems best approached by the integration of chemistry, physics and biology; and (4) to seek ways of improving the individual teaching performance of its membership through interdisciplinary communication at all levels of instruction.

It is intended that the institute will function as a service to the departments that it represents. The institute sponsors a series of special seminars devoted to topics in the molecular biological sciences, featuring speakers from its own personnel and from other campuses.

Institute for Reading

In 1971, the Institute for Reading was established for the purpose of promoting an atmosphere congenial to research and creative activity for development of reading and related programs. In the fulfillment of this purpose, the institute is dedicated to the pursuit of issues encountered in teaching of reading to children and adults, using an interdisciplinary approach whenever feasible.

It (1) fosters and encourages communication of ideas and information among its membership for mutual professional improvement; (2) encourages students to adopt affiliation with members and to adopt an interdisciplinary understanding of their particular areas of emphasis; (3) seeks ways of improving the teaching performance of its membership through interdisciplinary communication at all levels of instruction; and (4) fosters research activities on the part of the membership.

The Reading Center is located in the School of Education. Its primary purpose is to serve as a clinic and laboratory for graduate students in the reading option of the Master of Science in Education. Children from the university community schools attend the Reading Center for diagnosis and remediation. The center houses materials and equipment relating to reading instruction.

Laboratory for Phonetic Research

The Laboratory for Phonetic Research is a research and training facility in the Department of Linguistics. It is equipped with electromechanical facilities for the acoustical, psychoacoustical, and physiological study of human speech.

Its objectives are twofold:

Instruction. To provide teaching, training and experience for students who will serve during their professional lives to assist the language handicapped.

Research. To provide advanced students and faculty with facilities for research on language function and dysfunction.

Special Education Clinic

The primary purpose of the Special Education Clinic is to provide intensive experiences for students with children referred by schools and other agencies in the community. The experiences involve educational assessment, instructional methodology and evaluation. All students participating in the clinic attend clinic seminars and prepare cases for presentation at the seminars.

Speech and Hearing Clinic

The Speech and Hearing Clinic operates as a nonprofit California State University, Fullerton Foundation agency. In addition it is an off-campus clinical program for graduate students that involves experiences within medical and paramedical settings. The primary purpose of the clinics both on campus and off campus is to provide opportunities for teaching, service and research. University students receive clinical experience and opportunity for observation. The on-campus clinic is accredited by the Board of Examiners of the American Speech and Hearing Association and the California State Department of Education.

Tucker Wildlife Sanctuary

The Tucker Wildlife Sanctuary operates as a nonprofit California State University, Fullerton Foundation agency. The sanctuary provides for a program of continuing educational service to the community; a research center for biological field studies; a facility for teacher education in nature interpretation and conservation education; and a center for training students planning to enter into the public service field of nature interpretation.

CENTER FOR INTERNSHIPS AND COOPERATIVE EDUCATION

The Center for Internships and Cooperative Education was established to offer students the opportunity to combine their academic experience with periods of professional employment directly related to their academic major. The student, the university and the employer all benefit from the involvement in cooperative education.

Students gain a clearer understanding of their career objectives through the application of their academic studies in the "world of work." Learning while working outside the classroom, students obtain a broader perspective of themselves. Some of the internships are salaried and consequently assist students in meeting the costs of living.

The employing agency receives the services of individuals who are highly motivated, eager to learn and aware of theoretical developments in their field. The employer also finds participation in cooperative education to be one of the most reliable means of recruiting personnel for full-time employment upon graduation.

The university, through the establishment of the Center for Cooperative Education has provided a means for students to enhance their academic program. The center also serves as a feedback mechanism to keep the curriculum current and bring the campus and the community closer together.

Cooperative education is a program which offers innovative and expanded dimensions to the total education received by students at the university. The center provides services to students, faculty and employers to better implement this program.

CALIFORNIA STATE UNIVERSITY, FULLERTON FOUNDATION

The California State University, Fullerton Foundation was established and incorporated in October 1959 to provide essential student, faculty and staff services which cannot be provided from state appropriations; to supplement the program and activities of the university in appropriate ways; and to assist otherwise the university in fulfilling its purposes and in serving the people of the State of California—especially those of the area in which the university is located.

Services provided by the foundation include administration of scholarship and student loan funds; sponsored research programs; Tucker Wildlife Sanctuary; and certain institutes.

The foundation's overall policies are administered by a board of trustees composed of members of the university faculty, administration and students as well as community leaders.

TITAN SHOPS, INC.

Titan Shops, Inc., is comprised of the Titan Bookstore and food services. Established in July 1971, it is administered by a board of trustees made up of members of the university faculty, administration, students and community business leaders.

Titan Bookstore

Students are able to purchase or order books and supplies as needed for classes from the on-campus bookstore, owned and operated by the Titan Shops, Inc. The Titan Bookstore is a nonprofit operation: its proceeds are used to further the educational aims of the university. It is located directly east of the Letters and Science Building and is closely adjacent to Langsdorf Hall.

Food Services

On the campus, Titan Shops, Inc., provides food in the Commons and in a snack bar in the lower level of the Letters and Science Building. Vending machines and mobile carts also are located at other locations. A variety of restaurants and eating places also may be found within a short walking or driving distance from the university.

STUDENT SERVICES

While classroom activity is devoted to the academic development of the learner, Student Services offers programs which simultaneously provide students with services and opportunities for personal growth. Some Student Services programs such as housing and financial aid emphasize their service and educationally supportive roles; others, like counseling, accentuate their developmental aspects. The opportunities offered by the university's Student Services program vary from the traditional "student activity" of fraternity and sorority "rush" to the establishment of a coffee house complete with weekly entertainment. More developmental in nature is the investigating of vocational and personal life styles through group and/or individual counseling and testing.

The Student Services program includes: counseling and testing, student activities, Associated Students government, housing, health services, financial aid, programs for the handicapped, international education, placement, alumni affairs, educational opportunity for the culturally different, special projects, and services for women, minorities and veterans.

OFFICE OF THE DEAN

While each department within Student Services has its specific function and staff, the Dean of Student Services coordinates and administers the university's Student Services program. Additionally, the dean is an advocate for students to the faculty and administration and as such develops and maintains procedures within Student Services and the university which will increase the general welfare of the students and enhance their educational success at the university. Information regarding any of the Student Services programs may be obtained in the Dean of Student Services Office.

COUNSELING AND TESTING SERVICES

Counseling

Students who need assistance with such concerns as choosing an academic major or vocational goal, with study skills, or with personal problems affecting their academic progress may obtain help through the Counseling Center. The staff of professionally trained counselors and psychologists has available a variety of resources including occupational information files, vocational and psychological tests, college and graduate school catalogs and directories of various kinds to assist the student.

The Counseling Center also maintains contact with agencies and professional persons in the community to whom students may be referred.

Counseling services are available only to fully matriculated, registered students.

Testing and Student Research

Universitywide testing programs are coordinated and administered by the Testing Center. These include university admissions tests and general tests for graduate school admission. In addition, the Testing Center provides advice and consulting services to instructional departments in the development and administration of admission, selection, and placement tests for use by a specific department or program.

The Testing Center conducts ongoing research on the validity and appropriateness of tests used in university testing programs. It also designs and conducts surveys of student needs, attitudes, and other characteristics.

Testing requirements for students seeking admission are listed in the admissions section of this catalog. Students seeking information about testing requirements for specific instructional programs should inquire in the appropriate instructional division or the Counseling and Testing Center.

STUDENT ACTIVITIES

The university recognizes the important role of student activities. An extensive organization of clubs, interest groups, commissions, councils and communities has been created within the student body structure so that opportunities are available to every student according to his interest, ability and available time. In addition each academic department has a student association which provides contact with faculty and opportunities for activities related to a student's major or vocational interest.

Student Activities Center

The Student Activities Center provides a wide range of service. A professional staff provides aid and consultation to individuals and groups as well as assisting the Associated Students in planning and implementing programs, events and projects. The staff advises all student organizations concerning established policies and procedures, and aids students in arranging for use of university services and facilities. The commitment of the center is to aid students and faculty in the development of an enriched academic environment.

Associated Students

All students are members of the Associated Students and are represented by the Associated Students Senate and executive officers, who develop and maintain extracurricular programs of every type. Each year a budget is adopted in the spring which allocates anticipated activity fees and all other income to be derived from all programs during the following year. Senators are elected from various academic disciplines. One recent development is the Departmental Association Council, which is assigned a certain portion of the budget by the Senate. The many departmental associations are established to promote closer relationships among students and faculty of their departments and bring programs to the departments that might not be possible without the funding provided by the Senate. Most departments have established very active associations and participation by all students is solicited enthusiastically.

Student Government

All registered students are members of the Associated Students of Cal State Fullerton. The Associated Students is governed through the executive, legislative, and judicial branches of the Associated Students organization. The president and commissioners constitute the executive branch which has the responsibility for the development and administration of the program, including such activities as publications, intercollegiate athletics, intramural athletics, forensics, and music. The Associated Students Senate has full responsibility for legislation by which this program is directed and for the allocation of student funds for the program. The judicial branch serves as the legal body for interpretation of the constitution and enforcement of Associated Student policies.

Student Organizations

Student organizations are recognized as vital to the total educational process. They are chartered to encourage and facilitate use of university resources and integrate activities with a goal of sustaining a viable university community. Any group of students may become a chartered organization, provided the goals and activities are consistent with university rules and regulations by applying through the Student Activities Office. Organizations are classified under the following headings: (1) *Cocurricular* (organizations which share learning goals with a specific department); (2) *Political or Religious;* (3) *Service;* and (4) *Social.* More than 100 organizations are now recognized including six national social fraternities, five national social sororities, a number of departmental associations and many special interest groups.

Student Publications

The university newspaper, the *Daily Titan,* is published as a product of communications classes and financed by the Associated Students. In addition, a handbook is available for use by organizations in the development and operation of their program. Two magazines, *Focus* and the *Promethean,* are also published by students.

Men's Athletics

The intercollegiate athletic program consists of teams in baseball, basketball, cross country, football, golf, gymnastics, soccer, swimming, tennis, track and field, water polo, fencing and wrestling. A year-round program of intramural activities includes basketball, badminton, flag football, handball, softball, tennis and wrestling, swimming and weight lifting.

The university is a member of the Pacific Coast Athletic Association (PCAA). All athletic teams compete under rules of the National Collegiate Athletic Association (NCAA).

Intramural Activities

The University Recreation Program offers a wide variety of team, dual and individual intramural activities designed to meet the competitive and recreational needs of students, faculty and staff members. Rules and regulations governing participation in the intramural program are available in the Recreation Office, located in the Physical Education Building.

Women's Athletics

Participation by women in intercollegiate volleyball, basketball, tennis, gymnastics, track and golf is provided through membership in the Southern California Women's Intercollegiate Athletic Conference, the Western Association for Intercollegiate Athletics for Women, and the American Association for Intercollegiate Athletics for Women.

Recreational Activities

A recreational activities program is offered to students, faculty, staff, affiliated, and community members, and their families who wish to use the recreational facilities on an unstructured, noncompetitive basis. Such activities as swimming, badminton, volleyball, basketball, tennis, table tennis, racquetball, jogging, handball and weight training are provided. Special instructional programs and club sports are also available in various activities.

Birth Control Information Services

Birth control counseling at the Student Health Center has been supplemented by a birth control information service, financed and operated by the Associated Students under the direction of the university medical director. A part-time coordinator is available in the Student Health Center to make appointments with a Student Health Center physician. The physician advises the patient on the advantages and disadvantages of the various methods of birth control as well as giving the necessary physical examination.

Campuswide Events

Student boards, organized by the Associated Students, sponsor many campuswide events. The lecture series, pop concerts, film series and special events are part of the ongoing program. All recognized student organizations frequently cosponsor events in the area of their interests.

Child Care Center

Sponsored by the Associated Students is the Children's Center which provides daytime nursery care for children of Cal State Fullerton students for a nominal fee. The professionally staffed center, located near the campus, is licensed by the State of California.

Legal Information and Referral

This unique office provides assistance to students on matters pertaining to law and makes referrals in cooperation with the Orange County Bar Association and the Legal Aid Society. A full-time law student attending a recognized school of law maintains scheduled office hours in the University Union.

Mutual Ticket Agency

The Associated Students, through its business office, operates a ticket agency for the benefit

of all students. Purchases for drama, music, shows and sporting events may be made during regular office hours. The agency is located in the University Union.

Student News Bureau

The Student News Bureau was organized in 1960 to provide the outside press with news of student activities on the campus. It is financed by a budgeted allocation from Associated Students.

University Union

The University Union is leased by the Associated Students from the university. This facility houses the Associated Students government offices and business office, as well as the Student Activities Center, student organizations rooms and a snack bar. Facilities are available to all students for meeting rooms, pool, cards, films, and small discussion groups. The union is located in the lower level of the Letters and Science Building.

HOUSING OFFICE

The Housing Office has a staff whose primary concern is to insure that every student's housing needs are measured and every attempt is made to satisfy these needs.

In order to meet these primary concerns, the office provides the following:

- List of off-campus housing, rooms and apartments. These listings are continuously updated.
- Summer orientations designed to find housing for students well in advance of the fall semester. The orientations generally bring together groups of students who share similar interests because of their housing needs.
- Model rental agreements are available to all students. This agreement has been carefully reviewed by legal counselors and represents the university's best recommendations to students.
- Information is available for students with questions about the rights and responsibilities of being a tenant.
- Bulletin boards are available for students requesting roommates or needing an apartment.
- A free computerized car pool service is available to students with transportation difficulties and students attempting to improve our ecology.

THE HEALTH CENTER

The Student Health Center is located on Gymnasium Campus Drive between the Physical Education Building on the west and the Engineering Building and the Geodesic Dome on the east. The center is open from 8 a.m. to 6 p.m., Monday through Thursday and 8 a.m. to 5 p.m. Friday.

The doctors and nurses, laboratory and x-ray technologists. pharmacists and aides are there to care for patients felt medical needs. No one has access to a patient's medical records unless the patient gives permission for the transfer of records, or in the rare case, by court's subpoena.

Most of the doctors are generalists who have wide experience and interest in the health needs of students. In addition, there are psychiatrists, an orthopedist and gynecologists. The center has a pharmacy (not for outside prescriptions), a laboratory, an x-ray service and physical therapy.

The cost of care given in the Health Center, except for a few specific fees, already has been paid through student fees and by the State of California. Every registered student is eligible for care. However, the Health Center cannot meet all medical needs. So students are urged to obtain health insurance if they do not already have adequate private insurance. A good, inexpensive policy is offered through the Associated Students Office.

FINANCIAL AID

The Financial Aid Office provides guidance and assistance in financial matters to all students. Financial aid administers all scholarships, emergency loans, grants, National Direct Loans and the work-study programs.

One application for aid covers all programs for which a student may be eligible. Deadlines for applications are as follows: December 1 for the spring semester; April 1 for summer sessions and for the fall semester.

Dependent students, defined as those who are dependent upon their parents for support, must submit the following documents: (1) application; (2) Parent's Confidential Statement of the College Scholarship Service; and (3) copy of parents form 1040.

Independent students, defined as those who are not dependent upon their parents for support, must provide the following documents: (1) application; (2) Student's Financial Statement of the College Scholarship Service; (3) copy of their own form 1040 and spouse's, when applicable; and (4) Indepentdent Student Certificate.

Early submission of documents is advised, as funds are limited and demand is great.

Scholarships

A limited number of scholarships is available for outstanding students. Qualified students should obtain scholarship applications from the Financial Aid Office, and return by April 15 for the fall semester. Scholarship applications are evaluated by the university Scholarship Committee. Awards are based on scholastic record, financial need and personal qualifications. Some scholarships are limited to students majoring in specified disciplines. Departmental recommendations weigh heavily in such cases.

Scholarships offered by Cal State Fullerton are made possible by interested organizations, business firms and individuals. Recent contributors to the scholarship program include:

American Association of University Women (Placentia-Yorba Linda Branch)
California Congress of Parents and Teachers, Inc.
California Retired Teachers Association
Delta Delta Delta East Orange County Alumnae Chapter
Ebell Club of Fullerton
Fourth District, California Parents and Teachers Association
Fullerton Rotary Club
Gamma Phi Beta Sorority (Orange County Alumnae)
Kappa Phi Sigma Sorority
Mr. and Mrs. Rodney Coulson (President's Award)
Mu Phi Epsilon Scholarship Fund
Orange County Engineering Council Scholarship
Roberta King Maxwell Memorial Scholarship Fund
Sadie Landon Memorial Music Scholarship Fund
Sheryl Cummings Memorial Scholarship Fund

Loans

The generosity of organizations and individuals enables the university to offer short-term loans to students who meet unexpected financial difficulties of a temporary nature. Loans from these funds are made for various periods of time and to specified categories of students, according to university regulations and the wishes of the donors. The prime purpose of these loans is to meet educationally related expenses, and thus loans cannot be made for the purposes which are normally financed by private lending institutions. Application for a short-term loan may be made at any time during the school year.

The following is a listing of the loan funds available during the 1975-76 school year:

Altrusa Club of Fullerton Loan Fund
Brea Rotary Club Loan Fund
California Retired Teachers Association

Carrie Lou Sutherland Memorial Fund
Cal State Fullerton Faculty Women's Club Loan Fund
Don Miller Memorial Fund
Gamma Epsilon Chapter of Delta Kappa Gamma Loan Fund
James Merrick Memorial Fund
Junior Ebell Club of Anaheim Loan Fund
Laguna Beach Pan-Hellenic Loan Fund
Laura E. Imhoff Memorial Fund
Mary Virginia Lopez Memorial Fund
Memorial Loan Fund
Newport Harbor Children's Theatre Loan Fund
Newport Harbor Pan-Hellenic Loan Fund
Pierre Guyette Memorial Fund

Alan Pattee Scholarship (Children of Deceased Peace Officers or Firemen)

Surviving children, natural or adopted, of California peace officers or firemen killed in the line of duty are not charged fees or tuition of any kind while enrolled at any California State University or College, according to the Alan Pattee Scholarship Act and Section 23762, California Educational Code. Students qualifying for these benefits are known as Alan Pattee scholars.

INTERNATIONAL EDUCATION

Foreign Students

Special services for foreign students are coordinated by the Office of International Education and Exchange. These services include aid with problems concerning visa status and employment; orientation to academic procedures and requirements; advisement related to finances and social customs; and to resources and opportunities offered by campus and community.

International Programs

Information concerning study opportunities for American students in foreign universities is available in the International Student Office. The director of international education and exchange coordinates the selection of students applying for admission to one of the international programs operated by The California State University and Colleges. (See also International Programs on page 16.)

HANDICAPPED STUDENTS PROGRAM

Located in the Library Building, this office offers services and assistance to handicapped students. The goal of this program is to make the full educational, cultural, social and physical facilities of the university available to students with orthopedic, visual, hearing or other mobility or perceptual disabilities.

A full range of services is available in cooperation with other university departments — a learning resource center, priority registration, orientation, attendant/reader/note-taker services, counseling, career planning, academic advisement, housing, transportation and job placement. The purpose is to provide necessary services and assistance that will eliminate or significantly reduce barriers resulting from the mobility and perceptual problems encountered by most handicapped disabled students. The program serves as a centralized source of information and provides individual attention to students. It is staffed by personnel experienced in the particular needs of the handicapped, and disabled.

It should be further noted that this program has been operating on a part-time basis for the past three years and although attempts are being made to expand and operate full-time, some of the services herein listed are very limited, presently, even though they appear quite comprehensive. Help and suggestions from handicapped/disabled students are solicited in an attempt to upgrade the quality of services. The director for this program may be contacted in the Handicapped Student Center.

EDUCATIONAL OPPORTUNITY PROGRAM

The Educational Opportunity Program is an innovative educational program designed to provide comprehensive services for educationally, disadvantaged and/or culturally different students. These services include the identification, selection, counseling and retention of students who would not normally acquire a university education because of academic, ethnic, financial or motivational barriers.

EOP gives each of the students in its program individual attention. It also uses knowledge of the student's distinctive patterns of soical behavior, learning styles, motivations, and aspirations to assist students in realizing their full potentialities. Additionally, EOP strives to develop a sense of community among its students through a variety of creative and identity-seeking activities.

Students are encouraged not only to understand the background and strengths of their own particular ethnic groups, but also to work together in support of central, universal human values. EOP is keenly interested in advancing the understanding of different cultural groups on this campus by promoting an awareness of their concerns and potentialities.

The services offered by the Educational Opportunity Program include: Project Upward Bound, recruiting, counseling, Learning Assistance Center, direct intervention programs and supporting secretarial services. These support services of EOP are designed to ensure a progressive rate of student achievement and to provide the opportunity of realizing a full capacity success.

Project Upward Bound

This program is directed to high school students with good possibility and who are therefore capable of college work, but who are underachieving. Upward Bound provides these students with supplemental academic and counseling support to motivate them to complete high school and assist them in entering higher education.

Recruiting

EOP recruiting teams visit high schools and colleges within a specified service area and advise students of the benefits of higher education at Cal State Fullerton. Utilizing Affirmative Action guidelines, a special attempt is made to recruit students with high academic potential. Assistance with admissions and financial aid procedures is an important service of this component.

Counseling Service

The counseling component is the key to the effectiveness of the entire EOP. Peer counselors, working under the direction of professional counselors, are the important liaisons between each individual EOP student and the university as a whole. Assistance and guidance is provided to help the student resolve academic, social, financial and personal problems. The EOP Counseling Center also acts as a referral point to direct students to the appropriate support services, e.g., financial aid, housing, Learning Assistance Center, with tutorial services, health services, etc.

Learning Assistance Center and Tutorial Center

The Learning Assistance Center (LAC) is for all university students who need to bring about changes in their present learning skills, particularly in the areas of reading, writing, computation and study skills. The LAC also serves as a resource center, containing special study materials, collateral textbooks, and taped programs that supplement regular course offerings. Individual tutoring is available to students after their needs have been properly assessed through the LAC on request and through faculty or peer counselor referrals. All tutors are first selected on the basis of ability in their particular area of concentration. Prior to tutoring, they are assigned to a series of education courses designed to give the prospective tutor a greater understanding and awareness of the nature of his role in the learning process.

Direct Intervention Programs

These programs bridge the gap between a student's present achievement and university

scholastic requirements. Currently, special programs are offered for academic credit in reading, mathematics, study skills and ethnic studies. The LAC is now preparing additional direct intervention programs in mathematics, and the sciences. Additional programs will be created and implemented relevant to student needs.

PLACEMENT SERVICES

A centralized Career Planning and Placement Center is maintained with responsibilities for assisting students in career planning and in finding both part-time and career employment. The university believes that it best serves both the student and employers only when its graduates have been placed in the professions for which they are prepared and trained. All registered students are welcome to use the services of the Placement Center without cost and are also eligible for career counseling and placement.

Part-Time Placement

All registered students wishing part-time jobs either on or off campus are eligible to receive the assistance of the office. New students may receive service after August 1 for the fall semester or after January 1 for the spring semester. Secretarial skills are in great demand, but calls for drivers, custodians, teacher aides, draftsmen, waiters, clerks, youth and recreation leaders, sitters, gardeners, etc., are received. Entering freshmen who must augment their resources while going to school are encouraged to limit their work hours to approximately 15 per week.

Business, Industry and Government Placement

Through personal interviews the career placement counselor assists graduating seniors, graduate students, and alumni seeking career employment in business, industry, or public service in defining occupational preference, providing active job leads and writing resumés.

In addition, the Placement Center makes arrangements for the on-campus recruitment program which brings the employers to the students. Also available through this office is the Job Bank service. The center is a member of the Orange County Job Bank, and a computerized listing of more than 1,000 job opportunities in Orange County is received daily.

Located in the Placement Center is the Career Library with an ever-expanding selection of resource materials on career opportunities. Federal, state, county, city and armed forces brochures and applications are also available for student access. One section of the Career Library is devoted to information on nontraditional or alternative vocations.

The Placement Center serves as liaison office for the military and Action/Peace Corps-VISTA offering counseling and information brochures to any interested student.

Educational Placement

Students in the teacher education, pupil personnel services, or administration curriculum of the university, who are in the final semester of a credential program, or who are in student teaching or directed field work, are eligible to register and receive the services of the Placement Center, chief of which is help in establishing a professional employment file. Such registrants are supplied information on openings and helped to establish their candidacies in the school districts and educational institutions.

Students who are not in the student teaching program but who are completing their credential program at the university are also eligible for service. This includes those about to receive their master's degree in library science or academic areas, who plan to apply for a community college credential. Certain specified services are available to alumni as well.

Coordinator of Minority Relations

The coordinator of minority relations has the responsibility for broadening awareness in the entire community of placement services available to all minorities and for encouraging minority students to register with the center for career counseling and placement services. The coordinating officer works cooperatively with colleagues responsible for other specialized functions, e.g., teaching, part-time jobs, business, industry and government, and does not serve as the sole placement counselor for all minority students.

SPECIAL PROJECTS

The Office of Special Projects is concerned with formulating and adjudicating student rights, grievances and responsibilities. The office coordinates both the student grievance and the student disciplinary procedures. Additionally, the office carries out special projects related to Student Services as assigned by the dean.

ALUMNI RELATIONS

The Alumni Association of Cal State Fullerton provides the opportunity for alumni to maintain contact with the university after graduation through various publications, information about continuing education programs as well as special social, recreational, travel and service events at the university. The association is directed by a board which also advises the university president and administration. Further information regarding membership and the programs can be obtained by calling the Office of Alumni Relations.

OFFICE OF MINORITY SERVICES

The Office of Minority Services offers information regarding the opportunities available to the minority student for graduate studies. This resource encompasses financial aid, application filing, recruitment sessions and personal contact with those involved in minority programs on other campuses.

Maintaining student awareness of deadline dates, requirements, etc., hopefully will increase enrollment of minorities into programs of higher education.

Another step in increasing the number of minorities in graduate school is to give attention to the needs of the undergraduate, through study-related work, tutoring and referrals to other agencies which would be useful to the student.

OFFICE OF VETERANS' SERVICES

The Office of Veterans' Services was established to aid and assist all veterans, especially Vietnam-era veterans, who are not now participating in a postsecondary educational experience. Functioning under an institutional award from the U.S. Department of Health, Education and Welfare, the office is charged with the responsibilities of (1) outreach, (2) recruitment, (3) special programs and (4) counseling. In addition, it assists and aids veterans in: registration, tutoring, benefit advisement, educational opportunities, housing and job placement (both on and off campus).

The program director of veterans' services may be contacted in the Veterans' Services Office.

ADMISSION REGISTRATION RECORDS AND REGULATIONS

ADMISSION TO THE UNIVERSITY

OFFICE OF ADMISSIONS AND RECORDS

The Office of Admissions and Records is responsible for the administration of the admission, registration, and records programs and services for undergraduate and graduate students in the regular sessions of Cal State Fullerton. These programs and services include: the admission and readmission of students within established enrollment categories, quotas and priorities; the evaluation of the applicability of undergraduate transfer credit toward all-university requirements of the curriculum; the registration of student programs of study, including enrollment into classes; the maintenance of academic records; the administration of academic probation and disqualification policies; the provision of enrollment certifications on student request, including transcripts of academic records, certificates for Selective Service, Veterans Administration and other purposes; the certification of the completion of degree and credential requirements; the review of petitions for exceptions to academic regulations; and the provision of information about these programs and services.

RELATIONS WITH SCHOOLS AND COLLEGES

The Office of Relations with Schools and Colleges administers a universitywide program to assist undergraduate students in the transition from school to college. This assistance is provided in the form of preadmission guidance to prospective students, counseling with parents, provision of current information about the university's curricula and requirements to school and college counselors, and research into the articulation problems of the transfer student.

Requirements for Admission

Requirements for admission to Cal State Fullerton are in accordance with Title 5, Chapter 1, Subchapter 3, of the California Administrative Code. A prospective applicant who is unsure of his status under these requirements is encouraged to consult a high school or college counselor or the Admissions Office. Applications may be obtained from the Admissions Office at any of the campuses of The California State University and Colleges or at any California high school or community college.

Undergraduate Application Procedures for 1976-77

Prospective undergraduates, whether applying for part-time or full-time programs of study, in day or evening classes, must file within the appropriate filing period, a complete application including all the required forms and fees as described in the application booklet. The $20 nonrefundable application fee should be in the form of a check or money order payable to The California State University and Colleges. Undergraduate applicants may file only at their first choice campus. Alternate choice campuses and majors may be indicated on the application, but an applicant should list as alternate campuses only those campuses of The California State University and Colleges that he will attend if his first choice campus cannot accommodate him. Generally, alternate degree majors will be considered at the first choice campus before an application is redirected to an alternate choice campus. Applicants will be considered automatically at the alternate choice campus if the first choice campus cannot accommodate them. Transcripts and other supporting documents should not be submitted until requested by the campus.

Post-Baccalaureate and Graduate Application Procedures for 1976-76

All applicants for any type of post-baccalaureate status (e.g., master's degree applicants, those seeking credentials, and those interested in taking courses for professional growth, etc.) must file, within the appropriate filing period, a complete application including all of the required forms and fees described in the application booklet. Post-baccalaureate applicants who completed undergraduate degree requirements and graduated the preceding term are also required to complete and submit an application and the $20 nonrefundable fee. Since applicants for post-baccalaureate programs may be limited to the choice of a single campus on each application, redirection to alternative campuses or later changes of campus choice will be minimal. In the event that a post-baccalaureate applicant wishes to be assured of initial consideration by more than one campus, it will be necessary to submit a separate application (including fee) to each.

Post-baccalaureate applicants seeking second baccalaureates are considered undergraduate applicants for purposes of application and admission procedures, categories, and quotas.

Application materials may be obtained from the Office of Admissions or the Graduate Studies Office of any campus within the system and must be filed with the campus of first choice.

Admission Categories and Quotas

Admission quotas have been established by some campuses, in some majors, where the number of applicants is expected to exceed campus resources. At Cal State Fullerton, categories have been established for students who are: first-time freshmen; freshman and sophomore undergraduate transfer applicants; junior and senior undergraduate transfer applicants; special program applicants; hardship applicants; and foreign students. Also, there is a quota for most graduate level programs.

All applications received in the initial filing period will receive equal consideration for such categories. A few undergraduate programs are impacted throughout the 19-campus system, and applicants to such programs are expected to meet supplementary admission criteria for admission to these programs. Applicants to these major programs will be sent further information by the campuses about the supplementary criteria to be used, and how and when applicants must meet them. Impacted programs are identified and announced each fall. Applicants to impacted programs must apply during initial filing periods.

After admission to Cal State Fullerton, requests for change to a different (i.e., a new) academic objective involving established admission categories and quotas will be evaluated following policies and procedures parallel to those for new students.

Application Filing Periods

Term	*Initial Filing Period*	*Extended Filing Period*
Summer	the previous February	March until filled
Fall	the previous November	December until filled
Winter	the previous June	July until filled
Spring	the previous August	September until filled

All applications postmarked or received during the initial filing period will be given equal consideration within established enrollment categories and quotas. There is no advantage in filing before the initial filing period. Applications received before the initial filing period may be returned, causing a delay in processing. With the exception of the impacted undergraduate program areas, most campuses will be accepting applications well into the extended filing periods until quotas are filled.

Space Reservations

Applicants who apply during the initial filing period and who can be accommodated will receive a space reservation. A space reservation is not a statement of admission but is a commitment by Cal State Fullerton to admit the student once eligibility has been determined. The space reservation directs the applicant to arrange to have appropriate records forwarded promptly to the Admissions Office. Applicants should not request that any records be forwarded until they have received a space reservation notice.

Hardship Petitions

Each college or university has established procedures to consider qualified applicants who would be faced with an extreme hardship if not admitted. Prospective hardship petitioners should contact the campus regarding specific policies governing hardship admission.

How to Apply

1. Submit a completed application for admission within the announced filing period accompanied by the required application fee to:

   Office of Admissions and Records
   California State University, Fullerton
   Fullerton, California 92634

2. **Request required transcripts of record of all previous scholastic work from each school or college attended when asked to do so by the campus where space has been reserved for you. The transcrips required at Fullerton are:**

—*for undergraduates*—

(a) the high school transcript, and

(b) a transcript from each college or university attended. Undergraduate applicants for a teaching credential must submit two copies of the transcript from each college or university attended.

—*for graduates*—

(a) applicants for unclassified post-baccalaureate standing with no degree or credential objective must submit a transcript from the college or university where the baccalaureate was earned. Further, one transcript from other institutions attended are required as necessary so that the university has a complete record of the last 60 semester units attempted prior to enrollment at Cal State Fullerton.

(b) applicants for a master's degree or teaching credential, or both, must submit two copies of the transcript from each college or university attended.

All students are advised that they should also have a complete set of college transcripts for their personal use at all times of advisement.

All transcripts must be received directly from the issuing institution to be considered official and cannot be returned to the student. Foreign language transcripts must be accompanied by certified English translations.

3. If required, submit the scores from either the Scholastic Aptitude Test or the American College Test. Scores are required for all undergraduate applicants with fewer than 56 completed transferable semester units of study (84 quarter units). Applicants to classified graduate curricula must submit the scores of any qualifying examinations required in their prospective program of study.

UNDERGRADUATE ADMISSION REQUIREMENTS

First-time Freshmen

Applicants who have completed no college work after high school graduation will be considered for admission as first-time freshmen under one of the following provisions. Results of either the CEEB Scholastic Aptitude Test (SAT) or the American College Testing program examination (ACT) are acceptable in establishing eligibility.

Exceptions: College credit earned concurrent with high school enrollment; college credit earned in summer session after high school and prior to regular matriculation in college; college credit granted for the CLEP or advanced placement programs, or military or USAFI courses; or college credit granted for some nontraditional learning experience, will *not* affect the applicant's status as a first-time freshman for application quota purposes as well as admission. Further, the accelerated student, who completes his high school program mid-year, who has applied to The California State University and Colleges for the following fall term, but chooses to attend a local community college in the spring term, will be considered a first-time freshman for application quota purposes as well as admission. All such college or advanced standing credit, if fully acceptable as transfer credit, will be granted the student after admission.

California high school graduates or legal residents for tuition purposes must have a grade-point average and total score on the SAT, or composite score on the ACT, which together provide an eligibility index placing them in the upper one-third of California high school graduates. For 1975-76 the minimum eligibility index is 3,072 using the SAT or 741 using the ACT.

High school graduates from other states or possessions who are nonresidents for tuition purposes must present an eligibility index which places them in the upper one-sixth of California high school graduates. For 1975-76 the minimum eligibility index is 3,402 using the SAT or 826 using the ACT.

The eligibility index is computed either by multiplying the grade-point average by 800 and adding it to the total SAT score, or multiplying the grade-point average by 200 and adding it to 10 times the composite ACT score. Grade-point averages are based on work completed in the last three years of high school, exclusive of physical education and military science.

As an alternative, the following table may be used to determine the eligibility of graduates of California high schools (or California legal residents) for freshman admission to a California State University or College. This table is based on the eligibility index. Scores shown are the SAT Total and the ACT Composite. Students with a given GPA must present the corresponding test score. Conversely, students with a given ACT or SAT score must present the corresponding GPA in order to be eligible.

ADMISSIONS TABLE FOR CALIFORNIA HIGH SCHOOL GRADUATES OR CALIFORNIA LEGAL RESIDENTS

GPA	ACT Score	SAT Score	GPA	ACT Score	SAT Score	GPA	ACT Score	SAT Score
(—)*			2.80	19	832	2.39	27	1160
3.20	11	512	2.79	19	840	2.38	27	1168
3.19	11	520	2.78	19	848	2.37	27	1176
3.18	11	528	2.77	19	856	2.36	27	1184
3.17	11	536	2.76	19	864	2.35	28	1192
3.16	11	544	2.75	20	872	2.34	28	1200
3.15	12	552	2.74	20	880	2.33	28	1208
3.14	12	560	2.73	20	888	2.32	28	1216
3.13	12	568	2.72	20	896	2.31	28	1224
3.12	12	576	2.71	20	904	2.30	29	1232
3.11	12	584	2.70	21	912	2.29	29	1240
3.10	13	592	2.69	21	920	2.28	29	1248
3.09	13	600	2.68	21	928	2.27	29	1256
3.08	13	608	2.67	21	936	2.26	29	1264
3.07	13	616	2.66	21	944	2.25	30	1272
3.06	13	624	2.65	22	952	2.24	30	1280
3.05	14	632	2.64	22	960	2.23	30	1288
3.04	14	640	2.63	22	968	2.22	30	1296
3.03	14	648	2.62	22	976	2.21	30	1304
3.02	14	656	2.61	22	984	2.20	31	1312
3.01	14	664	2.60	23	992	2.19	31	1320
3.00	15	672	2.59	23	1000	2.18	31	1328
2.99	15	680	2.58	23	1008	2.17	31	1336
2.98	15	688	2.57	23	1016	2.16	31	1344
2.97	15	696	2.56	23	1024	2.15	32	1352
2.96	15	704	2.55	24	1032	2.14	32	1360
2.95	16	712	2.54	24	1040	2.13	32	1368
2.94	16	720	2.53	24	1048	2.12	32	1376
2.93	16	728	2.52	24	1056	2.11	32	1384
2.92	16	736	2.51	24	1064	2.10	33	1392
2.91	16	744	2.50	25	1072	2.09	33	1400
2.90	17	752	2.49	25	1080	2.08	33	1408
2.89	17	760	2.48	25	1088	2.07	33	1416
2.88	17	768	2.47	25	1096	2.06	33	1424
2.87	17	776	2.46	25	1104	2.05	34	1432
2.86	17	784	2.45	26	1112	2.04	34	1440
2.85	18	792	2.44	26	1120	2.03	34	1448
2.84	18	800	2.43	26	1128	2.02	34	1456
2.83	18	808	2.42	26	1136	2.01	34	1464
2.82	18	816	2.41	26	1144	2.00	35	1472
2.81	18	824	2.40	27	1152	(—)+		

Graduates of Secondary Schools in a Foreign Country

Applicants who are graduates of foreign secondary schools must have preparation equivalent to that required of eligible California high school graduates. The university will carefully review the previous record of all such applicants and only those with promise of academic success equivalent to that of eligible California high school graduates will be admitted. Such applicants are not required to take either the SAT or ACT except when specifically requested to do so.

*Students earning grade-point averages above 3.20 are eligible for admission.
+Students earning grade-point averages below 2.0 are not eligible for admission.

Non-High School Graduates

Applicants over 18 years of age, but who have not graduated from high school, will be considered for admission as first-time freshmen only when preparation in all other ways is such that the university believes promise of academic success is equivalent to that of eligible California high school graduates.

High School Students

Students still enrolled in high school will be considered for enrollment in certain special programs, including summer session, if recommended by their principal and if in the judgment of the university their preparation is equivalent to that required of eligible California high school graduates. Such admission is only for a given course or program.

Recommended Preparation

Overall excellence of performance in high school subjects and a test score giving evidence of academic potential provide the best bases for predicting success at Cal State Fullerton. While no specific course pattern is required, prospective students are strongly encouraged to include the following subjects in their preparation for work at Cal State Fullerton: college preparatory English; another language; mathematics; laboratory science; history or social science (or both); and study in speech, music, art and other subjects contributing to a well-rounded academic background. Students who anticipate intensive study in science are urged to take four years of mathematics and three years of foreign language in high school.

ADMISSION OF UNDERGRADUATE TRANSFER STUDENTS

Applicants for admission as undergraduate transfers in good standing at the last institution attended will be considered for admission under one of the following provisions:

1. He is eligible for admission in freshman standing (see First-Time Freshman requirements) and has earned an average grade of "C" (2.0 on a scale where A equals 4.0) or better in all transferable college units attempted.

2. He has completed at least 56 transferable semester units or 84 transferable quarter units with an average grade of "C" (2.0 on a scale where A equals 4.0) or better if a California resident. Nonresidents must have a grade-point average of 2.4 or better.

The California community college transfer student should consult the community college counseling office for information on transferability of courses.

Other Applicants

Applicants not admissible under one of the above provisions should enroll in a community college or other appropriate institution. Only under the most unusual circumstances, and then only by special action, will such applicants be permitted to enroll in the university.

ADMISSION OF POST-BACCALAUREATE AND GRADUATE STUDENTS

Post-Baccalaureate Standing. Unclassified.

For admission to unclassified post-baccalaureate standing, a student must: hold an acceptable baccalaureate degree from an institution accredited by a regional accrediting association or have completed equivalent academic preparation as determined by an appropriate campus authority; have attained a grade point of at least 2.5 (on a five-point scale) in the last 60 semester (90 quarter) units attempted; and have been in good standing at the last college attended.

An applicant ineligible for admission under these provisions may be admitted by special action if on the basis of acceptable evidence he is judged by appropriate university authority to possess sufficient academic, professional or other potential pertinent to his educational objectives to merit such action.

Admission to a California State University or College with post-baccalaureate unclassified standing does not constitute admission to graduate degree curricula.

Post-Baccalaureate Standing. Classified.

A student who is eligible for admission to a California State University or College in unclassified standing may be admitted to classified post-baccalaureate standing for the purpose of enrolling in a particular post-baccalaureate credential or certificate program; provided, that such additional professional, personal, scholastic, and other standards, including qualifying examinations, as may be prescribed for the particular program by the appropriate campus authority are satisfied.

Graduate Standing. Conditionally Classified.

A student who is eligible for admission to a California State University or College under unclassified post-baccalaureate standard above, but who has deficiencies in prerequisite preparation which in the opinion of the appropriate campus authority can be met by specified additional preparation, including qualifying examinations, may be admitted to an authorized graduate degree curriculum with conditionally classified graduate standing.

Graduate Standing. Classified.

A student who is eligible for admission to a California State University or College in unclassified or conditionally classified standing may be admitted to an authorized graduate degree curriculum of the campus as a classified graduate student if he satisfactorily meets the professional, personal, scholastic or other standards for admission to the graduate degree curriculum, including qualifying examinations, as the appropriate campus authority may prescribe. Only those applicants who show promise of success and fitness will be admitted to graduate degree curricula, and only those who continue to demonstrate a satisfactory level of scholastic competence and fitness shall be eligible to proceed in such curricula.

ADMISSION OF STUDENTS FROM OTHER COUNTRIES

Normally, the university accepts for consideration only two categories of applicants from other countries:

1. Those who have completed, with a good academic record, a two-year program in an accredited institution of higher education.
2. Those who have completed a bachelor's degree or its equivalent, with a good academic record, in an accredited institution and wish to enroll as graduate students.

Persons applying from their home countries are normally considered for admission to the fall semester only. Those transferring from U.S. institutions may apply to the fall or spring semesters.

All applicants whose native language is other than English are required to present a satisfactory score on the Test of English as a Foreign Language (TOEFL). The international administrations of this examination are scheduled for September 22 and November 24, 1975, and February 25 and May 17, 1976. Applicants should obtain the *TOEFL Bulletin of Information* and registration forms well in advance. Copies of this bulletin and registration forms are often available at American embassies and consulates, offices of the United States Information Service, United States educational commissions and foundations abroad, bi-national centers, and several private organizations. Those who cannot obtain locally a *TOEFL Bulletin of Information* should write to: Test of English as a Foreign Language, Box 899, Princeton, New Jersey, U.S.A. 08540.

Application procedures in other respects are the same as for other students, except that transcripts of educational documents in languages other than English must be accompanied by approved translations into English.

SUMMER SESSION STUDENTS

Although the quality of the program and most of the course offerings are the same as in the regular session, the university does not require an advance application or transcripts from

students registering for credit courses in the summer session. However, students normally must be high school graduates and are expected to have satisfied the prerequisites for the courses in which they register. In addition, students are expected to file a request to register in the summer session. Admission to summer session does not grant admission to the regular session.

READMISSION OF FORMER STUDENTS

A student previously enrolled in the university, planning to return after an absence of one or more semesters, must file a new application for admission in accordance with procedures set forth below. The application fee is required if the student was not enrolled in either of the two semesters prior to the semester to which he is seeking admission or if he was enrolled in another institution during his absence from Cal State Fullerton. Unless a leave of absence was granted, catalog requirements at the time of readmission will apply.

Former Students in Good Standing

A student who left the university in good standing will be readmitted provided any academic work attempted elsewhere since the last attendance does not change his scholastic status. Transcripts of the record of any work attempted in the interim are required.

Former Students Who Were on Probation

A student on probation at the close of his last enrollment will be readmitted on probation provided he is otherwise eligible. The student must furnish transcripts of any college work taken during his absence.

Former Students Who Were Disqualified

The readmission of a previously disqualified student is by special action only. Ordinarily the university will consider an application for reinstatement only after the student has remained absent for a minimum of one year following disqualification and has fulfilled all recommended conditions. In every instance, readmission action is based on evidence, including transcripts of study completed elsewhere subsequent to disqualification, which in the judgment of the university warrants such action. If readmitted, the student is placed on scholastic probation.

GENERAL INFORMATION ABOUT ADMISSION

Determination of Residence

New and returning students of The California State University and Colleges are classified for the purpose of determining the residence of each student for nonresident tuition purposes. The residence questionnaire and, if necessary, other evidence furnished by the student is used in making these determinations. A student may not register and enroll in classes until his residence questionnaire has been received by the Admissions Office.

The following statement of the rules regarding residency determination for nonresident tuition purposes is not a complete discussion of the law, but a summary of the principal rules and their exceptions. The law governing residence determination for tuition purposes by The California State University and Colleges are found in Education Code Sections 22800-22865, 23753.1, 23754-23754.4, 23758.2, 23752, and in Title 5 of the California Administrative Code, Article 4 (commencing with Section 41901) of Subchapter 5 of Chapter 1, Part V. A copy of the statutes and regulations is available for inspection at the campus Admissions Office.

Legal residence may be established by an adult who is physically present in the state while, at the same time, intending to make California his permanent home. Steps must be taken at least one year prior to residence determination date to evidence the intent to make California the permanent home with concurrent relinquishment of the prior legal residence. Some of the relevant indicia of an intention to establish and maintain California residence may be established by registering to vote and voting in elections in California; satisfying resident California state income tax obligations on total income, ownership of residential property or

continuous occupancy or letting of an apartment on a lease basis where one's permanent belongings are kept; maintaining active resident memberships in California professional or social organizations; maintaining California vehicle plates and operator's license; maintaining active savings and checking accounts in California banks; and maintaining permanent military address and home of record in California if one is in the military service.

The student who is within the state for educational purposes only does not gain the status of resident regardless of the length of his stay in California.

In general, the unmarried minor (a person under 18 years of age) derives legal residence from his parents, or, in the case of permanent separation of the parents, from the parent with whom the minor maintains his place of abode. The residence of a minor cannot be changed by act of the minor or that of the minor's guardian, so long as the minor's parents are living.

A man or a woman may establish his or her residence; marriage is not a governing factor.

The general rule is that a student must have been a California resident for at least one year immediately preceding the residence determination date in order to qualify as a "resident student" for tuition purposes. At the Fullerton campus, the residence determination date for fall terms is September 20, and for spring terms is January 25.

There are several exceptions for nonresident tuition. Some of the exceptions provided for:

1. Persons below the age of 19 whose parents were residents of California but who left the state while the student was still a minor. When the minor reaches age 18, the exception continues for one year to enable the student to qualify as a resident student.

2. Persons below the age of 19 who have been present in California for more than a year before the residence determination date, and entirely self-supporting for that period of time.

3. Persons below the age of 19 who have lived with and been under the continuous direct care and control of an adult, not a parent, for the two years immediately preceding the residence determination date. Such adult must have been a California resident for the most recent year.
4. Dependent children and spouses of persons in active military service stationed in California on the residence determination date. This exception applies only for the minimum time required for the student to obtain California residence and maintain that residence for a year. The exception, once attained, is not affected by transfer of the military person directly to a post outside the 50 states and the District of Columbia.

5. Military personnel in active service stationed in California on the residence determination date for purposes other than education at state-supported institutions of higher education. This exception applies only for the minimum time required for the student to obtain California residence and maintain that residence for a year.

6. A student who is an adult alien is entitled to residence classification if the student has been lawfully admitted to the United States for permanent residence in accordance with all applicable provisions of the laws of the United States; provided, however, that the student has had residence in California for more than one year after such admission prior to the residence determination date. A student who is a minor alien shall be entitled to residence classification if both the student and the parent from whom residence is derived have been lawfully admitted to the United States for permanent residence in accordance with all applicable laws of the United States, provided that the parent has had residence in California for more than one year after acquiring such permanent residence prior to the residence determination date of the term for which the student proposes to attend the university.

7. Certain credentialed, full-time employees of school districts.

8. Full-time California State University and Colleges employees and their children and spouses. This exception applies only for the minimum time required for the student to obtain California residence and maintain that residence for a year.

9. Certain exchange students.

10. Children of deceased public law enforcement or fire suppression employees, who were California residents, and who were killed in the course of law enforcement or fire suppression duties.

11. A person in continuous full-time attendance at an institution who had resident classification on May 1, 1973, shall not lose such classification as a result of adoption of the uniform student residency law on which this statement is based, until the attainment of the degree for which currently enrolled.

    Any student, following a final decision on campus on his residence classification, may make written appeal to: Office of General Counsel, 5670 Wilshire Boulevard, Suite 1260, Los Angeles 90036, within 120 calendar days of notification of the final decision on campus of his classification. The Office of General Counsel may make a decision on the issue, or it may send the matter back to the institution with instructions for a further review on campus. Students classified incorrectly as residents or incorrectly granted an exception from nonresident tuition are subject to reclassification as nonresidents and payment of nonresident tuition in arrears. If incorrect classification results from false or concealed facts, the student is subject to discipline pursuant to Section 41301 of Title 5 of the California Administrative Code. Resident students who become nonresidents, and nonresident students qualifying for exceptions whose basis for so qualifying changes, must immediately notify the Admissions Office. Applications for a change in classification with respect to a previous term are not accepted.

    The student is cautioned that this summation of rules regarding residency determination is by no means a complete explanation of their meaning. The student should also note that changes may have been made in the rate of nonresident tuition, in the statutes, and in the regulations between the time this catalog is published and the relevant residence determination date.

Admission to Credential Programs

Admission to the university as a student does not constitute admission to the teaching credential program. Students who plan to work toward teaching credentials must apply to the School of Education following procedures available from the School of Education.

Cancellation of Admission

A student who is admitted to the university for a given semester but who does not register in the specified semester will have his admission canceled. The student must file a new application form when he again seeks admission and must follow the complete application procedure and meet the then current admission requirements.

Honors at Entrance

Honors at entrance are awarded to both freshman and transfer students who have demonstrated outstanding achievement in past academic work. For first-time freshmen who have no previous college units earned, a grade point of 3.5 on a five-point scale must be earned in the coursework considered for admission to the university. Students who have completed fewer than 56 transferable semester units of credit must meet the grade-point average criteria for first-time freshmen and must also have earned a 3.5 grade-point average on all college work attempted. Students who have attempted 56 or more transferable semester units are eligible if a grade-point average of 3.5 is earned in all college work completed.

Undergraduate Entrance Testing Requirements

All undergraduate students, who have completed fewer than 56 semester or 84 quarter units of transferable work, are required to submit scores from either one of two national testing programs before eligibility for admission to the university can be determined. This requirement does not affect undergraduate students who have previously attended Cal State Fullerton and who have submitted ACT or SAT scores at the time of their first admission.

Registration forms and test dates for either test may be obtained from school or college counselors, from the addresses below, or from the campus testing offices. For either test, submit the registration form and fee at least one month prior to the test date.

ACT Address	*SAT Address*
American College Testing Program, Inc. Registration Unit, P.O. Box 168 Iowa City, Iowa 52240	College Entrance Examination Board P.O. Box 1025 Berkeley, California 94770

To take one of these tests:

1. After obtaining the test registration form and a *Student Information Bulletin,* select a test center near your home from the list printed in the *Bulletin.*
2. Send the completed registration form and the appropriate test fee to the proper address. Do not send to the Fullerton campus.
3. Have your ACT or SAT scores reported to the Testing Center, Cal State Fullerton. Use the appropriate code number for score reports.

If you have already taken either the ACT or SAT, send $2 to the appropriate testing agency and request that your scores be reported to the Testing Center. Use appropriate code number when requesting such reports, and provide complete information concerning testing date, test center, name and address changes, etc.

EVALUATIONS OF ACADEMIC RECORDS

Evaluation of Transfer Credits

The Office of Admissions will evaluate previous college work in terms of its relationship to the requirements of Cal State Fullerton. All degree candidates will be issued a credit summary during the first semester of attendance which serves as a basis for determining specific remaining requirements for the student's specific objectives.

Once issued to a student, the evaluation remains valid as long as the student enrolls at the date specified, pursues the objective specified, and remains in continuous attendance. The student will not be held to additional graduation requirements unless such requirements become mandatory as a result of changes in the California Administrative Code or the California Education Code. If the student does not remain in continuous attendance and has not applied for and been granted a formal leave of absence, the evaluation issued upon readmission will specify the remaining requirements for the student's specific objectives.

In view of the foregoing regulations, the student should notify the Office of Admissions immediately if he changes the objective specified in his evaluation. While the evaluation for a student remains valid, the student is held responsible for complying with all changes in regulations and procedures which may appear in subsequent catalogs.

Acceptance of Credit

Credit for work completed at accredited institutions, other than coursework identified by such institutions as remedial or in other ways as being nontransferable, will be accepted toward the satisfaction of degree and credential requirements at the university within limitations of residence requirements and community college transfer maximums.

Transfer of Credit From a Community College

Upper division credit is not allowed for courses taken in a community college. Credential credit is not allowed for courses in professional education taken in a community college. This does not invalidate credit for preprofessional courses taken at a community college, such as introduction to education, art or design, arithmetic, or music for classroom teachers. After a student has completed 70 units of college credit at a community college, no further community college units will be accepted for unit credit.

Credit for Military Service

Students who have been in active military service for at least a year may be granted six units of undergraduate credit. Courses taken in service schools may be given credit on the basis of an evaluation which determines that they are of university level. Any credit for military ex-

perience will be given only upon request. Records verifying such experience must be filed with the Office of Admissions.

Credit for Extension and Correspondence Courses

The maximum amount of credit through correspondence and extension courses which may be allowed toward the bachelor's degree is 24 units, if otherwise applicable.

Credit by Advanced Placement

Students who have successfully completed courses in the advanced placement program of the College Entrance Examination Board (defined as receiving a score of 3, 4 or 5) shall be granted six units of credit for each advanced placement course toward graduation, advanced placement in the university's sequence courses, and credit for curriculum requirements.

Credit by Examination

Students may be granted credit for a course toward graduation and to meet curriculum requirements by the satisfactory completion of a *challenge examination* in that course requirment. The examinations are to be comprehensive and administered by the department in which the course is offered. Well in advance of the *challenge examination* the student will secure written approval of his major adviser and the chair of the department in which the course is offered. Upon the successful completion of the examination, the notation on the permanent record of the student will be made as "CR" for the course. "CR" is to indicate credit for the course with a passing grade. Upon failure of the examination, the notation on the permanent record of the student will be made as "No CR" for the course. Credit by examination may not be used to fulfill the minimum residence requirements. The *challenge examination* for any course may be attempted only once. A maximum of 30 credits can be earned by *challenge examination,* including those achieved by advanced placement.

College Level Examination Program

The university shall accept three semester units of credit for each of the following College Level Examination Program (CLEP) examinations, subject to achievement of the scores indicated, provided the examination was not taken previously within one calendar year and that degree credit has not been granted for previous coursework at the equivalent or at a more advanced level than for the examination in question.

Examination	*Passing score*
Mathematics General Exam (1973 edition)	50 (on both parts of the examination)
College Algebra - Trigonometry	49
Introductory Calculus (including essay)	48
Statistics (including essay)	49

Operating under an interim policy, Cal State Fullerton may grant additional credit and advanced standing based upon CLEP examination results using as minimum standards:

General Examinations

1. That the student achieve a score at or above the 50th percentile, college sophomore norms.
2. That no unit credit be granted for any test in the general examinations, but that six units of general education requirements be waived for each test completed with the appropriate score.

Subject Examinations

1. That the student submit a score at or above the 50th percentile of those in the norming group who earned a mark of C or better.
2. That equivalency to Cal State Fullerton courses be determined by the appropriate academic department in conjunction with the Office of Admissions and Records.
3. That university credit shall have not been previously earned in the courses in question.

In no case will credit so awarded count towards residence credit.

English Equivalency Examination

Students passing the California State University and Colleges English Equivalency Examination shall be awarded six semester units of credit provided credit has not been granted previously at the equivalent or at a more advanced level.

REGISTRATION

Orientation

Various opportunities are provided for new students to obtain information relating to academic programs, student services and activities, and other aspects of university life. Information about specific programs will be published separately.

Registration

Class Schedule: A complete listing of courses offered will be found in the *Class Schedule* published prior to the start of each semester. This publication, which may be purchased in the Titan Bookstore, also states detailed information pertaining to the semester including class enrollment and fee payment procedures.

It is important that each student familiarize himself not only with the academic policies stated in this catalog but also with the requirements and procedures in the *Class Schedule* as both are used in the selection of classes for the semester.

Registration: Registration is made up of two steps — class enrollment and fee payment. At registration, every student is required to file a study program with the Office of the Registrar. The filing of a program by the student and its acceptance by the university obligates the student to perform the designated work to the best of his ability. It is emphasized that registration does not become official until fees have been paid.

Computerized Records System

The student records system, including the registration process, is computer based. This means that records and reports are produced from files maintained in the university Computer Center. It is a fact of life in a large institution such as Cal State Fullerton that use of the computer is essential. Thus, there is a requirement for data cards, code numbers, student file numbers and for meeting precise criteria for data input, which introduces an element of the impersonal in the student records system. Despite these conditions, every effort is made to provide courteous, efficient and personalized service to students and the entire university community. To assist in providing this service, students are urged to be extremely careful and accurate in preparing forms, especially the official program and change of program forms. Accurate input of information will assure each student of error-free records.

Controlled Entry Classes

In general, all courses listed in the semester *Class Schedule* shall be available to all matriculated students except for appropriate academic restrictions as stated in the *General Catalog*. These restrictions, including special qualifications and other academic limitations, on class entry shall be published in the *Class Schedule* as appropriate footnotes to the designated class or class section and shall be consistent with the *General Catalog*.

Late Registration

The last day to register late each semester will be announced in the *Class Schedule*. Late registrants will find themselves handicapped in arranging their programs and must pay a $5 late registration fee in addition to regular fees.

Changes in Program

Each student is responsible for the program of courses he lists when he registers. Changes may not be made thereafter without the filing of a change of program (add-drop) form in the Office of the Registrar following procedures announced in the *Class Schedule*.

Failure to file an official change of program request in the case of dropped classes may result in a penalty mark being recorded. Through the fourth week of instruction in the semester no record of enrollment is made of dropped classes. After four weeks students are expected to complete all courses in which they are enrolled. However, for reasons of ill health or reasons involving other serious and unforeseen problems, the student may drop a class or classes and receive a W (Withdrawal) by obtaining the approval and signature(s) involved and filing the change with the registrar on the form provided.

No classes may be dropped during the last three weeks of instruction, although complete withdrawal from the university is still possible.

Concurrent Enrollment

A student enrolled at the university may enroll concurrently for additional courses at another institution only with advance written approval from the student's academic adviser on official forms filed in the Office of the Registrar. Permission will not be granted when the study load in the proposed combined program exceeds the units authorized at this university.

Auditors

A properly qualified student may enroll in classes as an auditor. The student must meet the regular university admission requirements and must pay the same fees as other students. An auditor may not change his registration to obtain credit after the last date to add courses to the study list. An auditor is not permitted to take examinations in the course.

Handicapped Students

Students physically handicapped who require assistance should get in touch with the Handicapped Student Services Center prior to the announced semester registration period so that special arrangements for them can be made.

VETERANS

Cal State Fullerton is approved by the Bureau of Readjustment Education, State Department of Education, to offer programs to veterans seeking benefits under state and federal legislation. All students seeking veterans' benefits must have a degree or credential objective.

Applications for benefits should be filed well in advance of the semester in which the veteran plans to use these benefits in order to have the authorization at the time of registration.

SELECTIVE SERVICE

Male students requiring certification of their student status may request the Office of Admissions and Records to submit the appropriate forms to their draft board.

Undergraduate students shall normally be enrolled for 12 units a semester to be considered full time. Graduate students enrolled for nine units of study may be considered full time provided at least three units are 500-level courses.

RESERVE OFFICERS' TRAINING CORPS

Cal State Fullerton does not have a Reserve Officers' Training Corps program. However, through arrangements with the University of Southern California, two-, three- and four-year Air Force Reserve Officers Training Corps (AFROTC) programs are available to all qualified undergraduate students for the university. Further, in cooperation with the University of California, Los Angeles and the Claremont Colleges, Army ROTC programs are available to Fullerton students. Academic units earned in these programs are counted as elective credit towards the baccalaureate. Additional information may be obtained from the Office of Admission and Records.

FEE SCHEDULE, 1975-76

Tuition is not charged to legal residents of California. The following are the fees and expenses currently assessed.

All Students

Application fee (nonrefundable)
Payable by check or money order at time of applying $20

Student services fee	Semester
Fewer than 4 units	$51
At least 4 but fewer than 8 units	$57
At least 8 but fewer than 12 units	$63
12 or more units	$72
Facilities fee	$3
Associated Students fee	$10
University Union fee	$10

Nonresident and Foreign Visa Students

Nonresident tuition fee (in addition to fees required of all students, except for enrollment in extension or summer session)

15 or more units, maximum	$650
Fewer than 15 units, per unit	$43
Per academic year	$1,300

Summer Session

Standard course fee per unit	$30
Associated Students fee	$3
University Union fee	$5
Facilities fee	$3

Extension Fees

Per unit or fraction of unit ..... $28 to $56

Other Fees or Charges

Campus service card	$1
Late registration fee (in addition to other fees listed above)	$5
Check returned from bank for any cause	$5
Transcript fee	$1
Failure to meet administrative required appointment or time limit	$2

Auditors pay the same fees as others.
Fees are subject to change by the Trustees of The California State University and Colleges without advance notice.

Alan Pattee Scholars

No fees of any kind shall be required of or collected from those individuals who qualify for such exemption under the provisions of the Alan Pattee Scholarship Act.

Refund of Fees

Upon withdrawal from the university, the student services fee may be refunded if written application for refund, on forms provided by the university, is submitted to the registrar not later than 14 days following the day of the term that instruction begins; provided that the amount of $10 shall be retained to cover the cost of registration. Late registration and application fees are not refundable.

The entire fee may be refunded if a student is unable to continue his registration because of a university regulation. Application for refund under such circumstances may be made at any time before the date when the student received any academic credit for the courses for which he is registered.

No refund of fees will be given if the unit load of the student is reduced to a lower student services fee category.

Parking Fees

Semester pass (nonreserved spaces);	
Regular and limited students	$15
Coin operated gate, per admission	25
Summer session, each six-week period	$6

Typical Student Expenses

Typical school year budgets for California residents living at home or making other housing arrangements will vary widely. It is estimated that, including a $1,000 yearly allowance for room and board, the cost will approximate $2,000. Nonresident students must also allow for nonresident tuition.

AVERAGE ANNUAL COSTS AND SOURCES OF FUNDS

The 19 campuses of The California State University and Colleges are financed primarily through funding provided by the taxpayers of California. For the 1974-75 year, the total cost of operation is $603 million, which provides continuing support for 231,295 full-time equivalent (FTE*) students. This results in an average cost per FTE student of $2,608 per year. Of this amount, the average student pays $254. Included in this average student payment is the amount paid by nonresident students. The remaining $2,354 in costs are funded by state and federal taxes.

Averages do not fit all students alike or even any specific student. To arrive at an average figure that is meaningful, the costs outlined above exclude "user fees" for living expenses, housing, and parking, as well as costs for extension and summer session work. Computations are based on full-time equivalent students, not individuals, and costs are prorated by system totals, not by campus. The average costs for a full-time equivalent student in the system are depicted in the following chart:

1974-75 PROJECTION OF TOTAL COSTS OF CAMPUS OPERATION (Including Building Amortization)
Enrollment: 231,295 FTE

	Amount	*Average Cost Per Student (FTE)**	*Percentage*
State appropriation (support)	$488,163,528	$2,111	81.0
State funding (capital outlay)**	28,615,000	124	4.8
Student charges	58,806,800	254***	9.7
Federal (financial aids)	27,456,316	119	4.5
Total	$603,041,644	$2,608	100.0

* For budgetary purposes, full-time equivalent (FTE) translates total head count into total academic student load. The term assumes that a full-time student in The California State University and Colleges is enrolled for 15 units of academic credit. Some students enroll for more than 15 units; some students enroll for fewer than 15 units.

** The system's more than 14,000 acres of land and the wide range of facilities and equipment on the 19 campuses are currently valued at approximately $1.2 billion. Amortized over a 40-year period, they are valued at $125 per FTE student.

*** The average costs paid by a student include the student services fee (formerly called the materials and service fee), health facilities fee, college union fee, student body fee and the nonresident tuition. This amount is derived by taking the total of all student fees and dividing by the total full-time equivalent student enrollment. Individual students may pay more or less than $254 depending on whether they are part-time, full-time, resident or nonresident students.

RECORDS AND REGULATIONS

ENROLLMENT DEFINITIONS AND REGULATIONS

Unit of Credit

Each semester unit represents three hours of university work per week for one semester. Courses are of three types:

(1) Lecture—one hour in class plus two hours of study.
(2) Activity—two hours of class plus one hour of study.
(3) Laboratory—three hours in class.

Some courses may combine two or more of these types. All required courses carry unit credit.

Classification in the University

Undergraduate students who have completed 0-29½ semester units of work are classified as freshmen, 30-59½ semester units as sophomores, 60-89½ semester units as juniors, and 90 or more as seniors.

Maximum Number of Course Units

Undergraduate students' requests to carry units beyond 18 (19 for engineering majors) must be approved by the student's adviser and the department chair of the major. If such requests are denied, appeals may be made to the appropriate school dean. Undeclared majors must receive the approval of the director of academic advisement to carry over 18 units of work. The *minimum* full-time load is 12 units.

A student whose academic record justifies a study list in excess of the normal may request to be allowed to carry extra units. Request forms may be obtained from the Office of the Registrar and are submitted during the first week of instruction. In general, only students with superior academic records are allowed to enroll for more than the maximum unit load. In addition, the need to carry an overload must be established. Factors such as time spent in employment or commuting, the nature of the academic program, extracurricular activities and the student's health should be considered in planning a study load. Students who are employed or have outside responsibilities are advised to reduce their program of study.

The minimum full-time program of study for graduate students is defined in the "Graduate Policies and Procedures" section of this catalog.

Undergraduate Students Taking Graduate Level Courses

Graduate level (500) courses are organized primarily for graduate students. Undergraduate students may be permitted to enroll in a graduate level (500) course if:

1. They are within nine units of completion of graduation requirements, or
2. They are exceptionally qualified seniors whose undergraduate work in the related field or fields has been of 3.5 grade-point average or better, and whose cumulative overall grade-point average is at least 3.25.

Such cases shall require specific approval by the instructor and also the chair of the department or dean of the school in which the course is offered and by the chair or dean of the student's major department or school.

Graduate level (500) courses taken under 1. above may be applied to a graduate program if approved under graduate studies policies.

Graduate level (500) courses taken under 2. above may be applied to the undergraduate program only.

Class Attendance

While class attendance is not recorded officially by the university, regular attendance in class is often essential to success in a course. The policy on class attendance is within the discretion of the individual faculty member and shall be announced by the faculty member at the first class meeting of the semester.

Initial Class Meeting

It is especially important that students attend the first meeting of a class. Students who are absent from the first meeting and fail to notify the instructor or departmental office no later

than 24 hours after the class meeting may be denied admission to the class. Instructors may deny admission to absentees in order to admit any persons on waiting lists in their places.

Instructor-Initiated Drops

A student who registers for a class and whose name appears on the first-day-of-class list should attend all class meetings in the first week or the first two class meetings, whichever alternative covers the longer time span. If the student is absent without notifying the instructor or departmental office within 24 hours after any meeting missed, the student may then be dropped administratively from the class by the instructor. This administrative withdrawal shall be without penalty and must be filed by the instructor with the registrar no later than the 20th day of instruction.

GRADING POLICIES

Grading System

Every student of the university will have his coursework reported by the faculty in terms of letter grades or administrative symbols.

When, because of circumstances, a student does not complete a particular course, or withdraws, certain administrative symbols may be assigned by the faculty. Grades and symbols are listed in the chart below together with grade-point values. The chart also illustrates the academic bookkeeping involved for all grades and symbols used.

The university utilizes a combination of traditional and nontraditional grading options as follows:

Traditional

Option 1. Letter Grades: A, B, C, D, F

Nontraditional

Option 2. Letter Grades: A, B, C and NC (No Credit) for undergraduate courses; A, B, and NC for graduate level courses.

Option 3. CR (Credit) for satisfactory and NC (No Credit) for less than satisfactory work.

Grade or Symbol	*Units Attempted*	*Units Earned*	*Grade Point Value*	*Progress Point Value*	*Full Credit*
Option 1 *Option 2*					
Satisfactory Grade					
A A	Yes	Yes	4	4	Yes
B B	Yes	Yes	3	3	Yes
C C◊	Yes	Yes	2	2	Yes
Unsatisfactory Grade					
D	Yes	Yes	1	1	No
NC	*	No	None	0	No
F	Yes	No	0	0	No
Option 3					
CR	*	Yes	0	2	Yes
NC	*	No	0	0	No
Administrative Symbols					
I (Incomplete)	**	No	None	None	No
W (Withdrawal)	No	No	0	0	No
AU (Audit)	No	No	0	0	No
SP (Satisfactory Progress)	No	No	0	0	No
RD (Report Delayed)	No	No	0	0	No
TOTALS	*Used in GPA*	*Counted Toward Objective*	*Used in GPA*	*Counted Toward Progress*	

* Credit/No Credit course units are not included in grade-point computations; however Credit/No Credit course units attempted are included in progress-point computations.

** If not completed within one calendar year the "I" will be counted as an "F" (or "NC") for grade-point and progress-point calculation.

◊ Undergraduate courses only.

Selection of a grading option, with certain exceptions, is the responsibility of the student. Graduate students must use Option 1 for courses that are on study plans leading to master's degrees.

Exceptions are those courses designated by the faculty to be graded solely on either an Option 2 or Option 3 basis. These courses will be so designated in the *Class Schedule* (and shall not be changed by the faculty after publication of the *Class Schedule)* for each semester and may be included in major, core, or special program requirements.

The instructor shall grade all students using the traditional A, B, C, D, or F grades except in Credit/No Credit courses, and the registrar shall make the necessary changes from A, B, C, D or F. converting A, B, C to Credit and D, F to No Credit in undergraduate courses; and A, B to Credit and C, D, F to No Credit in graduate level courses. In those courses offered only on a Credit/No Credit basis, the instructor shall assign grades of "Credit" or "No Credit" or appropriate administrative symbols, i.e., "I" (Incomplete), "SP" (Satisfactory Progress).

NONTRADITIONAL GRADE OPTIONS

Nontraditional grading options are available to undergraduate students, nonobjective graduate students, and to classified graduate students for courses not included in the approved study plan. Any student attempting a course using either of the nontraditional grading options must meet the prerequisites for that course. Each student shall be permitted to select courses in subjects outside of the major requirements for enrollment on a Credit/No Credit basis (grading Option 3). The phrase "major requirements" shall be taken to include core plus concentration (or option) requirements in departments using such terms, and professional course requirements in teacher education curricula. A student in any one term may take a maximum of two courses under Option 2, or one course from Option 2 and one course from Option 3 (but not two courses under Option 3). In addition, he may enroll in a required course offered only under Option 3; however, a maximum of 36 units of Credit/No Credit (or pass/fail) courses including those transferred from other institutions may be counted toward the baccalaureate.

Students shall inform the registrar up to the end of the fourth week of classes regarding the selection of grading options in designated courses. If a student does not do so, he shall be graded under Option 1.

A, B, C, No Credit (Option 2)

There is no difference in grade-point values or other essentials between letter grades in this option and the traditional letter grades. The principal differences are that NC (No Credit) replaces both the D and F as an "unsatisfactory grade" and has "O" progress-point value in undergraduate courses, and replaces C, D and F in graduate courses. No Credit grades are included in progress computations.

Credit/No Credit (Option 3)

Under Option 3 the term "Credit" signifies that the student's academic performance was such that he was awarded full credit in undergraduate courses with a quality level of achievement equivalent to a "C" grade or better. In all graduate level courses "Credit" signifies academic performance equivalent to "B" or "A" grades. "No Credit" signifies that the student attempted the course but that his performance did not warrant credit toward his objective. As in Option 2, No Credit (NC) grades are included in progress point computations.

Ordinarily, a student shall be limited to one non-major course per term using this option, exclusive of courses offered only on a Credit/No Credit basis.

When an undergraduate student changes his major field of study to one where he has completed courses on a Credit basis, such lower division courses shall be included in his major

requirements. Upper division courses may be included at the option of the department upon petition by the student.

ADVISORY CAUTION: Undergraduate students who plan to pursue graduate or professional studies later are advised to be selective in opting for courses on a Credit/No Credit basis. As a general rule (advisory only), coursework that is preparatory or prerequisite to advanced specialized study should be completed and evaluated on a letter grade basis and not Credit/No Credit.

ADMINISTRATIVE SYMBOLS

Incomplete (I)

A grade of Incomplete (I) may be given only when, in the opinion of the instructor, a student cannot complete a course during the semester of enrollment for reasons beyond his control. Such reasons are assumed to include: illness of the student or of members of his immediate family; extraordinary financial problems; loss of outside position; and other exigencies. In assigning a grade of "I", the instructor will file with his department, a statement of the specific requirements for completion of coursework. Such requirements will not include or necessitate retaking the course. This statement will also include a provisional grade indicating the quality of work completed at that time, and the instructor's designation of the time limit, allowed for completion of course requirements. Upon later completion of the course requirements, the instructor shall initiate a change to a grade of A, B, C, D or F, or CR (Credit), NC (No Credit) if the course was offered only for such grades. When the instructor is no longer available, instructional departments will determine procedures for completion of course requirements and assigning grades for such completed coursework.

An Incomplete (I) signifies that a portion of required coursework has not been completed and evaluated in the prescribed time period and that there is still possibility of earning credit. It is the responsibility of the student to bring pertinent information to the instructor and to reach agreement on the means by which the remaining course requirements will be satisfied. A final grade is assigned when the work agreed upon has been completed and evaluated.

An "Incomplete" must be made up within one calendar year immediately following the end of the term in which it was assigned. This limitation prevails whether or not the student maintains continuous enrollment. Failure to complete the assigned work will result in an "Incomplete" being counted as equivalent to an "F" (or an "NC") for grade-point average and progress-point computations.

Withdrawal (W)

The symbol "W" indicates that the student was permitted to drop the course after the 20th day of instruction (university census date) with the approval of the instructor and department chair. It carries no connotation of quality of performance and is not used in calculating grade point averages or progress points. Withdrawal is permitted during the first 20 days of classes without record of enrollment.

After the first 20 days of classes, students are expected to complete all courses in which they are enrolled. However, for serious and compelling reasons, such as illness, the student may, by obtaining appropriate authorizations, withdraw from a class or classes and receive the symbol of "W" (withdrawal). Authorization to withdraw after the census date and prior to the last three weeks of instruction, shall be granted only with the approval of the instructor and the department chair or school dean. All requests for permission to withdraw under these circumstances and all approvals shall be made in writing on the "Change of Program" form and shall briefly state the reason for the withdrawal. The completed change of program form shall be filed at the Registrar's Office by the student or his proxy.

Withdrawals shall not be permitted during the final three weeks of instruction except in cases such as accident or serious illness where the assignment of an "Incomplete" is not practicable. Ordinarily, withdrawals in this category will involve total withdrawal from the

campus, except that Credit, or an Incomplete may be assigned for courses in which sufficient work has been completed to permit an evaluation to be made. Requests for permission to withdraw from all classes under these circumstances, with authorizations as described above, shall be made on the change of program form and shall be filed by the student, or his proxy, with the registrar.

Audit (AU)

The symbol "AU" is used by the registrar in those instances where a student has enrolled in a course either for information or other purposes not related to the student's formal academic objective. An auditor may not change his registration to obtain credit after the last date to add courses to the study list. An auditor is not permitted to take examinations in the course; therefore, there is no basis for evaluation and a formal grade report.

Satisfactory Progress (SP)

The "SP" symbol is used in connection with thesis, project or similar courses that extend beyond one academic term. It indicates that work is in progress, and has been evaluated and found to be satisfactory to date, but that assignment of a final grade must await completion of additional coursework. Cumulative enrollment in units attempted may not exceed the total number applicable to the student's educational objective. Work is to be completed within a stipulated time period which may not exceed one year except for graduate degree thesis or project for which the time may be up to two years, but may not exceed the overall time limit for completion of all master's degree requirements. Any extension of time limit must receive prior authorization by the dean of the school (or the dean's designee) in which the course is offered.

Report Delayed (RD)

The "RD" symbol is used in those cases where a delay in the reporting of a final grade is due to circumstances beyond the control of the student. The symbol is assigned by the registrar and should be replaced by a more appropriate grading symbol as soon as possible. An "RD" shall not be included in calculations of a grade-point average or in determination of progress points.

Grade Reports to Students

A report of the final grades assigned in classes is sent to each student at the end of each semester. Many students also leave self-addressed post cards for instructors of specific courses to send them earlier reports.

Examinations

Final examinations, if required by the instructor, will be given at times scheduled by the university. Once established, the final examination schedule may not be changed unless approved by the dean of the school. No makeup final examination will be given except for reason of illness or other verified emergencies.

Grade-Point Averages: Repetition of Courses

Each undergraduate student shall complete with a grade-point average of 2.0:

A. All units accepted toward a degree, including those accepted by transfer from another institution,

B. All units in the major,

C. All units attempted at the university.

The numerical grade-point values in the grading system chart are intended to give an exact determination of a student's scholarship. To compute the grade-point average for coursework at Cal State Fullerton, the point value of each grade with the exception noted below is multiplied first by the unit value of the course to obtain a total of all grade points earned. The total is then divided by the total units attempted in all courses in which grades of A, B, C, D or F were received. The resulting figure is the grade-point average (GPA).

The exception in grade-point computations is as follows: Undergraduate students may repeat, using the traditional grading system (A, B, C, D, F), those courses for which grades of D or F were earned. In computing the grade-point average of a student who repeats courses in which he received D or F, only the most recently earned grades and grade points shall be used for the first 16 units repeated. Nevertheless, the original grade on the academic record shall not be changed or eradicated.

In the case of any additional repetition (beyond the 16 unit limitation), both grades are considered in computing grade-point averages. However, successful repetition of a course originally passed carries no additional unit credit toward a degree or credential except for certain courses such as independent study or practicum (specified in this catalog as "may be repeated for credit").

Grade Changes

All grades except Incomplete (I) are final when filed by the instructor in his end-of-term course grade report. Each student is notified by mail of the grades earned during the term. These grades become a part of the official record and may be changed only upon official authorization by the instructor and department chair.

TRANSCRIPTS

Official transcripts of courses taken at the university are issued only with the written permission of the student concerned. Partial transcripts are not issued. A fee of $1 for each transcript issued must be received before the record can be forwarded.

Normally transcripts are available within three working days, except at the end of the semester when the student should allow about 10 days after the last day of the semester.

Transcripts from other institutions, which have been presented for admission or evaluation, become a part of the student's permanent academic file and are not returned or copied for distribution. Students desiring transcripts covering work attempted elsewhere should request them from the institutions concerned.

CONTINUOUS RESIDENCY REGULATIONS

Good Standing

"Good standing" indicates that a student is eligible to continue and is free from financial obligation to the university. A student under academic disqualification, disciplinary suspension or disciplinary expulsion is not eligible to receive a statement of "good standing" on transcripts issued by the university or on other documents.

Choice of Catalog Regulations for Meeting Degree Requirements

A student remaining in continuous attendance in regular sessions and continuing on in the same curriculum in any California State University or College, in any of the California community colleges or in any combination of California community colleges and The California State University and Colleges may, for purposes of meeting graduation requirements, elect to meet the graduation requirements of The California State University or College from which he will graduate in effect either at the time of his entering the curriculum or at the time of his graduation therefrom, except that substitutions for discontinued courses may be authorized or required by the proper college authorities.

Continuous Enrollment for Graduate Students

A graduate student with a degree objective is expected to maintain continuous enrollment in the university (summer sessions and extension excluded) until completion of the degree. If a student pursuing an advanced degree finds it impossible to attend during a certain semester, and is not eligible for a leave of absence, as detailed elsewhere in this catalog, he may request permission to register in Graduate Studies 700, a course with no unit credit, which does not require class attendance.

If a graduate student who has completed student teaching and is pursuing a standard elementary or secondary teaching credential finds that he cannot enroll in courses leading to

the credential during a certain semester, he may enroll in Credential Studies 701. This course is a course with no unit credit, which does not require class attendance. Students may not enroll in Credential Studies 701 for a third consecutive semester.

A graduate student who fails to register has discontinued enrollment in the university.

Leave of Absence

A student may petition for a leave of absence and if approved may upon his return continue under the catalog requirements that applied to his enrollment prior to the absence. A leave of absence may be granted for a maximum of one year. Illness is the only routinely approved reason for a leave of absence. Students should realize that an approved leave of absence does not reserve a place for them in the university; they must reapply.

Complete Withdrawal from the University

Students who wish to withdraw from the university must complete a change of program form. See section on refund of fees for possible refunds. No student may withdraw after the date shown on the university calendar as the last day of instruction. Complete withdrawal from the university is accomplished by following the procedures for dropping classes.

STUDENT HONORS

Dean's Honor List

Academic achievement is recognized with the publication each semester of a list of undergraduate students whose grade-point average for the previous term has been 3.5 or better. Students are notified in writing when they have earned this distinction. Eligibility is based on a minimum of 12 units of graded coursework.

Honors at Graduation

Honors at graduation have been defined by the Faculty Council in three classifications:

With honors	GPA 3.5
With high honors	GPA 3.85
With highest honors	GPA 4.0

ACADEMIC PROGRESS, PROBATION AND DISQUALIFICATION

For purposes of determining a student's ability to remain in the university both quality of performance and progress towards his educational objective will be considered.

Academic Probation

An undergraduate student shall be placed on academic probation if in any semester his cumulative grade-point average or his grade-point average at Cal State Fullerton falls below 2.0 (grade of C on a five-point scale), or if he fails to earn twice as many progress points as all units attempted during that semester. The student shall be advised of probation status promptly and, except in unusual instances, before the start of the next consecutive enrollment period.

An undergraduate student shall be removed from academic probation and restored to clear standing when he earns a cumulative grade-point average of 2.0 (C) in all academic work attempted, in all such work attempted at Cal State Fullerton, and is making satisfactory progress towards his educational objective by achieving at least twice as many progress points as units attempted during each semester.

A graduate student enrolled in a graduate degree program in either conditionally classified or classified standing shall be subject to academic probation if he fails to maintain a cumulative grade point average of at least 3.0 (grade of B on a five-point scale) in all units attempted after admission to the program.

Academic Disqualification

An undergraduate student on academic probation shall be subject to academic disqualification if:

1. As a lower division student (fewer than 60 semester hours of college work completed) he falls 15 or more grade points below a 2.0 (C) average on all college units attempted or in all units attempted at this institution, or fails to earn during any semester twice as many progress points as all units attempted in that semester.

2. As a junior (60 to 89½ semester hours of college work completed) he falls nine or more grade points below a 2.0 (C) average on all college units attempted or in all units attempted at this institution, or fails to earn during any semester twice as many progress points as all units attempted in that semester.

3. As a senior (90 or more semester hours of college work completed) he falls six or more grade points below a 2.0 (C) average on all college units attempted or in all units attempted at this institution, or fails to earn during any semester twice as many progress points as all units attempted in that semester.

A graduate student enrolled in a graduate degree program shall be subject to disqualification if while on probation he fails to earn sufficient grade points to remove himself from probationary status. Disqualification may be either from further registration in a particular program or from further enrollment in the university, as determined by appropriate campus authority.

A post-baccalaureate student (unclassified or classified) shall be disqualified if he falls below a 2.0 (C) average in all units attempted at this institution as a post-baccalaureate student, or fails to earn during any semester twice as many progress points as all units attempted in that semester.

Student Conduct

The university properly assumes that all students are in attendance to secure a sound education and that they will conduct themselves as mature citizens of the campus community. *Compliance with all regulations of the university is therefore expected.* If, however, on any occasion a student or an organization *is alleged to have compromised accepted university policies or standards, appropriate judiciary procedures shall be initiated through the established university judicial process.* Every effort will be made to encourage and support the development of self-discipline and control by students and student organizations. The dean of student services, aided by all members of the faculty and advised by the Student Affairs Committee of the faculty, is responsible to the president of the university for the behavior of students in their relationships to the university. The president in turn is responsible to the Chancellor and the Trustees of The California State University and Colleges who themselves are governed by specific laws of the State of California.

A list of specifically prohibited behavior is available upon request from the dean of student services and also is posted on the administrative bulletin boards in the breezeway of the Letters and Science Building and in the second-floor lobby of Langsdorf Hall. Prohibited behavior includes hazing, now defined as acts likely to cause physical or emotional harm.

Students have the right to appeal certain disciplinary actions taken by appropriate university authorities. Regulations governing original hearings and appeal rights and procedures have been carefully detailed to provide maximum protection to both the individual charged and the university community. Information about the operation of the judicial system involving student discipline may be obtained in the Office of Special Projects.

Debts Owed to the University

From time to time the student may become indebted to the university. This could occur, for example, when the student fails to repay money borrowed from the university. Similarly, debts occur when the student fails to pay library fees, or when the student fails to pay for other services provided by the university at the request of the student. Should this occur, Sections 42380 and 42381 of Title 5 of the California Administrative Code authorize the university to withhold "permission to register, or use facilities for which a fee is authorized to

be charged, to receive services, materials, food or merchandise or any combination of the above from any person owing a debt" until the debt is paid. For example, under these provisions the university may withhold permission to register, and may withhold other services such as grades and transcripts. If a student feels that he or she does not owe all or part of a particular fee or charge, the student should contact the business office.

RIGHT OF PETITION

Students may petition for review of certain university academic regulations when unusual circumstances exist. It should be noted, however, that academic regulations when they are contained in Title 5, California Administrative Code, are not subject for petition.

Petition forms are available in the Office of Admissions and Records and must first be reviewed and signed by the student's advisor. Action will then be taken on the petition and the student will be notified of this decision. A copy of the action will also be placed in the student's folder in the Office of the Registrar.

RIGHT OF NONCOMPLIANCE, RISK ACTIVITIES

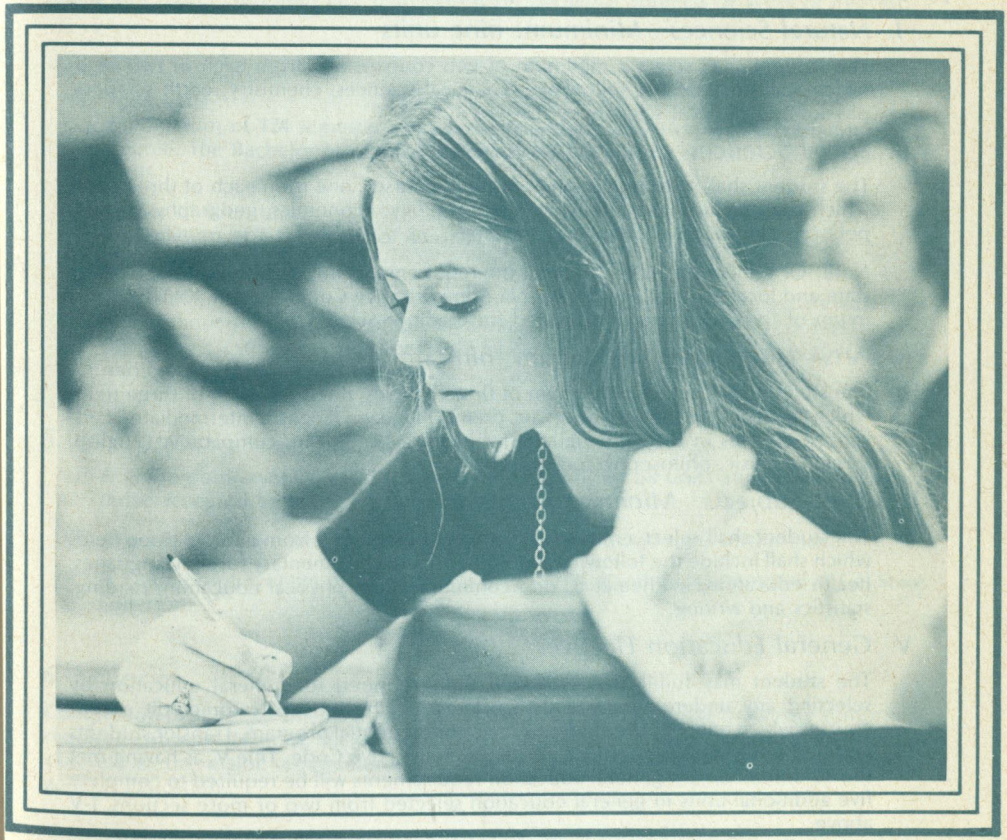
Certain university activities either within or outside of the classroom may involve varying degrees of risk to the participants. It is university policy that the instructor directing such activities divulge fully to all potential participants the specific nature of such risks and obtain from them their expressed or implied consent prior to undertaking activities.

The student who at any time comes to believe that the risks to himself, whether physical or psychological, are excessive has the responsibility to withdraw from participation at that time and to inquire of the instructor if there are alternative means of fulfilling the requirements without penalty. If there is none, the student may petition for withdrawal from the course without penalty or appeal for an appropriate modification of the activity. The appeal may be made either to the chair of the department concerned, or to the chair of the Committee on Activities Involving Human Subjects, or both.

RIGHT OF ACADEMIC APPEAL

The student who believes he has been graded capriciously or treated with obvious prejudice by faculty members or administrators may initiate steps for an academic appeal. In all cases the student should first make an effort to resolve the issue by consulting the faculty member or administrator concerned. If the issue cannot be resolved, the student should consult with the dean of student services or director of special projects.

DEGREE REQUIREMENTS



GRADUATION REQUIREMENTS FOR THE BACHELOR'S DEGREE

A student is eligible for graduation if he is in good standing and fulfills the following requirements:

1. General Education

To be eligible for a baccalaureate degree from Cal State Fullerton, the student shall have completed a minimum of 45 semester units of general education courses selected in accordance with the pattern designated below. Such courses may be lower division courses or upper division courses for which the student qualifies.

I. Natural Sciences Minimum: nine units

The student shall select a minimum of two courses, one from each of two fields which shall include the following: biological sciences, chemistry, earth sciences, physics and physical science.

II. Social Sciences Minimum: nine units

The student shall select a minimum of three courses, one from each of three fields which shall include the following: anthropology, economics, geography, history, political science, psychology and sociology.

Note: Of the courses taken to meet the requirements in U.S. history, Constitution, state and local government (California Administrative Code, Section 40404), a maximum of three units may be applied for credit in Section II.

III Arts—Humanities Minimum: nine units

The student shall select a minimum of three courses, one from each of three fields which shall include the following: art, drama, language (English, intermediate or advanced courses in foreign languages), literature (American, comparative, English, foreign), music, philosophy and speech.

IV. Basic Subjects Minimum: nine units

The student shall select a minimum of three courses, one from each of three fields which shall include the following: computer science, elementary foreign languages, health education, mathematics, oral communication, physical education, reading, statistics and writing.

V. General Education Electives

The student may fulfill any remaining units required for general education by selecting any undergraduate course offered by the university for credit except courses which apply to the student's major or credential program. Transfer students certified under provisions of California Administrative Code, Title V, as having met the 40-unit minimum general education requirements will be required to complete five additional units in general education selected from two or more sections, I-V above.

2. Statutory Requirements in American Institutions and Values

In addition to general education-breadth requirements California Administrative Code, Section 40404, states that for graduation the student is required "to demonstrate competence in the Constitution of the United States, and in American history including the study of American institutions and ideals, and of the principles of state and local government established under the Constitution of this state." To meet this requirement, the student may select the following alternatives: (1) pass a comprehensive examination in these fields, (2) pass Political Science 100 and a course in U. S. history or American Studies 201, (3) pass a combination of Political Science 300 and History 170A or 170B.

Note: Coursework completed to satisfy Section 40404 may be applied in the social sciences area of general education to a maximum of three units.

3. Electives

After fulfilling the requirements in general education, American institutions and values, and a specific major (and possibly a minor), each student is free to choose the rest of the courses needed to complete the 124 semester units required for graduation. Different majors vary considerably in both the number of units they require in their own and related fields. They also vary considerably in the amount of latitude or choice they permit in selecting courses to satisfy the major requirement. The general education requirement encourages great freedom of choice within the broad categories of the natural sciences, social sciences, arts and humanities, and basic subjects. Students at the university use their electives to broaden their general educations, deepen some aspect of their specialties, pursue work in related fields, and satisfy curiosities and enthusiasms for particular subjects or areas of interest.

4. Units

(a) Total units
A minimum of 124 semester units is required for graduation with a bachelor of arts degree. The Bachelor of Science in Engineering requires a minimum of 132 semester units.

(b) Upper division units
Completion of a minimum of 40 units of upper division credit is required.

(c) Resident units
Completion of a minimum of 24 semester units in residence is required. At least one-half of these units must be completed among the last 20 semester units counted toward the degree. Extension credit, or credit by examination, may not be used to fulfill the minimum residence requirement.

5. Scholarship

(a) A grade-point average of 2.0 or better is required on all units attempted, including those accepted by transfer from another institution.

(b) A grade-point average of 2.0 or better is required on all units in the major.

(c) A grade-point average of 2.0 or better is required on all units attempted at Cal State Fullerton.

6. Major

Completion of all requirements for a major as specified by appropriate university authority is required. At least 24 units, including 12 at the upper division level, must be applied exclusively to the major requirements and may not be used to meet the requirements of general education.

7. Multiple Majors and Second Baccalaureate Degrees

Within the units required for the baccalaureate it is possible for a student to complete the requirements for more than one major within a degree program when the additional major is within the degree of the first major. At least 24 units, including 12 at the upper division level, in each major must be applied exclusively to the respective major and may not be used to meet requirements in other majors or in general education. The student shall declare the additional major with the appropriate department not later than the beginning of the student's final year of study. The completion of additional majors will be noted at the time of graduation by appropriate entries on the academic record and in the commencement program.

Second baccalaureate

(a) First degree completed elsewhere, second at Cal State Fullerton
Students seeking a bachelor's degree from Cal State Fullerton after having received a baccalaureate from another institution may qualify for graduation with the approval and recommendation of the faculty upon completion of the following:

(1) general education requirements
(2) all requirements in the major field of study
(3) residence and scholarship requirements

(b) Two baccalaureates from Cal State Fullerton
With the approval and recommendation of the faculty, a student may qualify for a second baccalaureate under the following circumstances:

(1) The second field of study is offered in a different degree (e.g., bachelor of arts to bachelor of science)

(2) At least 24 units are earned in residence after the conferral of the first degree

(3) All requirements of the major are fulfilled

Units included in second baccalaureate programs may not apply to graduate degrees or credential programs.

8. Minor

Completion of a minor field is *not* required for the baccalaureate degree at this time.

9. Graduation Requirement Check

A candidate for graduation should file an application for a graduation requirement check in the Office of the Registrar during registration for the semester prior to the semester in which he expects to graduate (please refer to the current schedule of class for the deadlines applied to requesting and returning graduation checks). A senior should have completed at least 100 units (including the current work in progress) and a substantial portion of his major requirements before requesting a graduation check. If the candidate does not complete the requirements in the semester indicated, he must file a change of graduation date in the Office of the Registrar. The original graduation check is valid as long as a student is in continuous attendance and is completing the major under which the graduation check was requested.

10. Approval and Recommendation by the Faculty of the University

THE PROGRAM OF MASTER'S DEGREES

Master's degree programs offered at Cal State Fullerton are listed on page 80 and described in the appropriate section of this catalog under "University Curricula." Program descriptions and additional information are contained in the *Graduate Bulletin,* copies of which are available in the Office of Admissions and the Graduate Office.

Master's degrees in other areas are under consideration and will be announced when approved.

STANDARDS FOR GRADUATE STUDY

Graduate study deals with more complex ideas and demands more sophisticated techniques, searching analysis, and creative thinking than undergraduate study. The research required is extensive in both primary and secondary sources and the quality of writing expected is high. The student is advised to consider these factors when deciding upon the amount of coursework to be undertaken during any one semester.

GENERAL REQUIREMENTS FOR THE MASTER'S DEGREE

General requirements for the master's degree include a study plan consisting of a minimum of 30 semester units of approved upper division and graduate (500-level) coursework taken after the baccalaureate and completed with a 3.0 (B) minimum grade-point average. The coursework should normally be completed within five years (see "Time Limit for Completion"). For specific requirements of particular programs, please see the descriptions elsewhere in this catalog.

In the degree program:

1. Not less than 24 semester units shall be completed in residence.
2. Not less than one-half of the units required for the degree shall be in graduate (500-level) courses.
3. Not more than six semester units shall be allowed for a thesis if a thesis is required.

Some type of final evaluation, near the end of the student's work toward the master's degree, is required. It may be a thesis, a project, a comprehensive examination, or any combination of these.

Each student's program for a master's degree (including eligibility, classified standing, candidacy, and award of the degree) must be approved by the graduate program adviser, the graduate committee, and the dean of graduate studies.

GRADUATE REGULATIONS

The following are in addition to other policies and procedures applying to both undergraduates and graduates described elsewhere in this catalog and in the appropriate *Class Schedule.* Requirements of individual programs are shown in the appropriate sections of this catalog. Also, individual academic areas may have established particular rules governing programs offered.

Students are advised to consult the *Graduate Bulletin* for detailed instructions concerning steps in the master's degree program. It is the student's responsibility to initiate the requests for classified standing, advancement to candidacy, and for a graduation check at the appropriate times. The deadline for requesting the graduation check appears in the official calendar for each semester.

Since all policies and procedures are subject to change, by appropriate authority, students should consult class schedules and other official announcements for possible revision of policies and procedures stated herein.

Post-Baccalaureate and Graduate Application Procedures

All applicants for any type of post-baccalaureate or graduate standing (e.g., master's degree applicants, those seeking credentials, and those interested in taking courses for professional growth) must file a complete application within the appropriate filing period. *Second baccalaureate degree aspirants should apply as undergraduate degree applicants.* A complete application for post-baccalaureate or graduate standing includes all of the materials required for undergraduate applicants plus the supplementary graduate admissions application. Applicants who completed undergraduate degree requirements and graduated the preceding term are also required to complete and submit an application and the $20 nonrefundable application fee. Since applicants for post-baccalaureate and graduate programs may be limited to the choice of a single campus on each application, redirection to alternative campuses or later changes of campus choice will be minimal. In the event that an applicant wishes to be assured of initial consideration by more than one campus, it will be necessary to submit a separate application (including fee) to each. Applications may be obtained from the graduate studies office of any California State University or College campus in addition to the sources noted for undergraduate applicants.

Applicants should consult the section of this catalog, "Admission to the University," for information concerning "Category Quotas and Systemwide Impacted Programs," "Application Filing Periods," "Space Reservations" and "Hardship Petitions."

Admission of Post-Baccalaureate and Graduate Students

Post-Baccalaureate Standing: Unclassified

For admission to unclassified post-baccalaureate standing, an applicant must: (a) hold an acceptable baccalaureate degree from an institution accredited by a regional accrediting association (e.g., Western Association of Schools and Colleges for California) or have completed equivalent academic preparation as determined by an appropriate campus authority; (b) have attained a grade-point average of at least 2.5 (on a five-point scale) in the last 60 semester (90 quarter) units attempted; and, (c) have been in good standing at the last college attended. *Admission to a California State University or College with post-baccalaureate unclassified standing does not constitute admission to graduate degree curricula.*

An applicant who does not qualify for admission under the provisions of (a) or (b), or both, as in the preceding, may be admitted by special action if on the basis of acceptable evidence it is determined by appropriate campus authority that the applicant possesses sufficient academic, professional and other potential pertinent to the educational objectives to merit such action.

Graduate Standing: Conditionally Classified

An applicant who is eligible for admission to a California State University or College under unclassified post-baccalaureate standards as above, but who has deficiencies in prerequisite preparation which in the opinion of the appropriate campus authority can be met by specified additional preparation, including qualifying examinations, may be admitted to an authorized graduate degree curriculum with conditionally classified graduate standing. There may be additional requirements for admission with conditionally classified standing in particular programs. Consult the program descriptions.

Graduate Standing: Classified

A student who is eligible for admission to a California State University or College in unclassified or conditionally classified standing may be admitted to an authorized graduate degree curriculum of the campus as classified if the graduate student satisfactorily meets the professional, personal, scholastic or other standards for admission to the graduate degree curriculum, including qualifying examinations, as the appropriate campus authority may prescribe. Consult the program descriptions. Only those applicants who show promise of success and fitness will be admitted to graduate degree curricula, and only those who continue to demonstrate a satisfactory level of scholastic competence and fitness shall be eligible to proceed in such curricula.

Advancement to Candidacy

A student who has been classified (as above) may, upon application and with subsequent approvals, be advanced to candidacy, following the satisfactory completion of a minimum of 12 units of coursework on the approved study plan. A minimum grade-point average of 3.0 (B) in all coursework on the study plan is required; other scholastic, professional and personal standards, the passing of examinations, and other qualifications, may be prescribed.

Admission From Nonaccredited Schools

An applicant who is a graduate of a nonaccredited school must apply for admission as an undergraduate to complete requirements for a bachelor's degree from this institution. However, once admitted, a student in this category who gives evidence of unusual promise and superior background may petition the school or department concerned for conditionally classified graduate standing. If the petition is granted, the student may then proceed in the graduate program.

Residence Requirement

A student is considered to be in residence when registered during regular semesters at Cal State Fullerton. Of the minimum of 30 semester units of approved coursework required for the master's degree, not less than 24 shall be completed in residence at this institution. Approved units earned in summer sessions may be substituted for regular semester unit requirements on a unit for unit basis. Extension credit and credit by examination may not be used to fulfill the minimum residence requirement and are not normally acceptable as part of the six units of approved transfer work permitted. See also "Continuous Enrollment," below.

For a modification of this requirement, see the Master of Public Administration external degree program.

Election of Curriculum Requirements

A student remaining in continuous attendance in regular semesters and continuing in the same curriculum may elect to meet the degree requirements in effect either when entering the curriculum or at the time of completion of degree requirements, except that substitutions for discontinued courses may be authorized or required by the proper authorities.

Continuous Enrollment

A graduate student with a graduate degree objective should maintain continuous enrollment during regular semesters (summer sessions and extension excluded) until award of the degree.

A graduate student who fails to register has discontinued enrollment in this institution and in the graduate degree program. If the student wishes to resume studies, it will be necessary to reapply for admission to Cal State Fullerton and to the degree program. This policy is designed to eliminate the need for readmission to the university, provide opportunity for continuous use of facilities, including the Library, and assure the development of an integrated program, adequately supervised, and effectively terminated within the time limitations allowed by regulations.

Students who may have completed all coursework, but who may not have satisfactorily completed a comprehensive examination or other requirement, are expected to maintain continuous enrollment.

Students admitted to the external degree program in public administration are not subject to this requirement.

If a graduate student pursuing an advanced degree finds it impossible to attend during a certain semester, permission may be requested from the academic area sponsoring the graduate degree sought to register in Graduate Studies 700, a credit/no credit course with no units of credit, which does not require class attendance. Registration in Graduate Studies 700 will normally be restricted to graduate students who have been classified or who are in a prescribed prerequisite program for a specific graduate degree (conditionally classified).

For a student whose only objective is a credential, a similar course, Credential Studies 701, is available. Consult the School of Education for further details.

Applicability of Courses Taken During Summer Sessions

Cal State Fullerton normally conducts a 12-week summer session. Appropriate courses taken during the summer session may be applied to a graduate degree program, providing the courses are approved *in advance* by the appropriate authorities. Since the funding of graduate work during the summer months does not include the necessary advisement and supervision, appropriate advisers and committees may not be available.

A normal full-time program of study in the summer session is up to 1⅓ units of coursework per week of instruction. *Any student who enrolls by error in more than 16 units during a 12-week summer session will find that credit for excess units will not be counted toward a degree, credential or other objective.* Any exceptions must be petitioned through the Office of Admissions and Records.

It should be noted that enrollment in a summer session does not constitute admission to the university (matriculation). Any student desiring a master's degree must be admitted to a regular semester (fall or spring) and is expected to be enrolled continuously until award of the degree (see "Continuous Enrollment").

Grade-Point Average Standards

A minimum grade-point average of 2.5 in the last 60 semester units attempted is required for admission of all students for enrollment beyond the baccalaureate level, except that, under certain conditions, an applicant who does not meet this requirement may be admitted by special action. See "Post-Baccalaureate Standing: Unclassified," under "Admission of Post-Baccalaureate and Graduate Students."

Minimal grade-point average requirements for admission to graduate degree programs with conditionally classified graduate standing are shown in the descriptions of graduate programs elsewhere in this catalog. For further information, consult the appropriate graduate adviser, the Office of Admissions or the Graduate Office.

The required GPA for the granting of classified graduate standing varies, according to the particular program. Consult descriptions of programs in this catalog and in the *Graduate Bulletin*. However, a student is expected to have earned a 3.0 grade-point average in all post-baccalaureate coursework taken at this university plus such transfer courses as are applied to the study plan.

Students in conditionally classified and classified graduate standing are subject to academic probation and, subsequently, disqualification if they do not maintain a cumulative grade-point average of at least 3.0 in all units attempted subsequent to admission to the program. Progress points are not computed for students in graduate standing.

Advancement to candidacy requires the completion of a minimum of 12 units on the study plan with a minimum grade-point average of 3.0, and whatever additional requirements there may be in a particular program.

The 30 semester units of approved study plan coursework required for the degree must be completed with a 3.0 (B) minimum grade-point average. If a student approaches the completion of the degree requirements with less than a 3.0 average, a request may be made to change the study plan to add no more than six units of coursework in order to achieve at least a 3.0 average (see "Changes in Study Plan," as follows). If a student's average at any time falls below such a level that it cannot be raised to a 3.0 within the prescribed limits of coursework, the student has in effect withdrawn from the master's program.

Tests

An applicant for admission with graduate standing in conditionally classified or classified graduate standing and declaring the objective of a Master of Business Administration is required to submit the test scores from the Admission Test for Graduate Study in Business (Educational Testing Service).

Similarly, an applicant for admission to the Master of Arts in Biology must submit test scores from the GRE Aptitude test and the Advanced test in biology.

Other applicants may be admitted in conditionally classified graduate standing without test scores. However, test scores are required for admission to classified standing in many of the master's degree programs. See program descriptions in this catalog for the appropriate requirements and types of tests required.

The Graduate Record Examinations are nationally administered and are given only a few times a year on specified dates. A current list of these dates is available at the Office of Counseling and Testing, and the Graduate Office. The student must make written application for the tests on a form available at the above offices which must be submitted to the particular testing service office by the applicable deadline. Since test results are measured against those of students who normally take the tests in their senior year and since they are required before the student can become a classified student, the taking of the tests should not be deferred.

Limitation on Preclassification Coursework

No more than nine units of postgraduate work taken at Cal State Fullerton prior to classified standing may be applied to a student's master's degree study plan. Any acceptable transfer work is excluded from the nine units permitted. Students who receive postgraduate credit for courses taken during their final semester as a senior may accumulate as many as 12 units.

Inapplicable Courses

Courses numbered 100 to 299 and in the 700 series may not be included in a master's degree study plan. Courses numbered 300 to 399 do not give graduate credit unless included on an approved graduate study plan.

Courses taken to meet baccalaureate degree requirements, or postgraduate coursework taken to satisfy quantitative or qualitative deficiencies, may not be used on a master's degree study plan. Credit by examination and correspondence credit are not acceptable.

Workshop, extension, and institute coursework offered either at this institution or by other colleges or universities is not normally acceptable as part of a master's degree study plan. A student who desires to utilize such coursework should obtain approval from the graduate adviser and committee, and from the dean of graduate studies. When such coursework has been taken elsewhere, the student should provide evidence that the college or university concerned would consider such coursework acceptable toward a comparable graduate degree. Any such courses offered by other institutions, but which are not acceptable for their own graduate degrees, may not be accepted by this university for a graduate degree.

Also see the sections following on "CR, P or S Grades" and "Time Limit for Completion."

CR, P or S Grades

Any course taken at this university with a grade of CR, P, S or similar cannot be accepted on a master's degree study plan.

A course taken at another college or university with a grade of CR, P, S or similar cannot be accepted on a master's degree study plan unless such a course with such a grade is acceptable at that college or university for a graduate degree.

Declassification

Graduate students in classified standing may be declassified upon the recommendation of the appropriate academic unit, with a change to post-baccalaureate standing (unclassified), when one or more of the following conditions exist:

1. The student's request for declassification is approved by the graduate committee.
2. The student fails to maintain the grade-point average required in the master's degree program.
3. The student's professional performance is judged to be unsatisfactory.
4. The student fails to petition for an extension of the time limit.

Time Limit for Completion

All coursework on the master's degree study plan should normally be completed within five years. The university, at its option, may further extend the time if warranted by individual circumstances and if the outdated work is validated by comprehensive examination, in the relevant additional course or subject field work or such other demonstration of competence as may be prescribed. Requests to take such comprehensive examinations, or accomplish updating by alternative means, should be made to appropriate graduate studies committees.

When an examination is administered or the alternative completed, a report of successful completion will be made to the dean of graduate studies. The grade received on the original course will be used on the master's degree study plan, rather than the CR grade used for challenge examinations.

The following shows the dates of expiration of courses according to the five-year limitation:

Courses taken in	*Will expire in*
1970	1975
1971	1976
1972	1977
1973	1978
1974	1979
1975	1980
1976	1981

The five-year period is computed as the time between the actual date of completion of the earliest course and the month and year the degree is granted.

Changes in Study Plan

The student must complete the courses shown on the approved study plan on file in the Graduate Office and in the particular academic unit with at least a 3.0 (B) grade-point average. If a student wishes to make a change in the study plan, a request may be made on the appropriate form (copies available in the Graduate Office, and graduate program offices) in the academic unit offering the master's degree prior to registration for the coursework to be substituted or added. The recommendation for a change must be signed by the adviser. No course for which a grade has been assigned may be removed from a study plan.

Minimum Full-Time Course Unit Load

The minimum full-time unit load for a graduate student is either 12 units of coursework a semester or nine units of which six are in 500-level courses. Students for whom the unit count does not adequately reflect the study load may request a review. Consult the Graduate Office for further information.

Maximum Course Unit Load

Twelve units is considered to be a maximum course load for graduate students, but, on the approval of an adviser, in exceptional cases, a student may take more.

Theses and Projects

According to the definition approved by the university, a thesis is a systematic study of a significant problem. The problem, its major assumptions, its significance, the methods and sources for gathering data, the analysis of data, and the conclusions and recommendations, should be clearly stated. A project is defined as either (1) the systematic development of a plan for, or the critical evaluation of a significant undertaking, or (2) a creative work such as a novel, a musical composition or a group of paintings. Quality of work accomplished is a major consideration in judging the acceptability of any thesis or project. The finished product must evidence originality, appropriate organization, clarity of purpose, critical analysis, and accuracy and completeness of documentation where needed. Mere description, cataloging, compilation or other superficial procedures are not adequate. Critical thinking and independent thinking should characterize every thesis and every project.

Of the minimum of 30 semester units of approved coursework required for the master's degree, no more than six are allowed for a thesis.

When a thesis is required the Library must be provided with the approved original copy, or a fully acceptable duplicated copy, in the approved binding, and a microfilm of it. An abstract, of not more than 150 words, must accompany the thesis, and will be published in the journal, *Master's Abstracts.* Arrangements for the binding, microfilming and publication of the abstract are made through the Titan Bookstore and include the execution of a publication agreement. The current fee (subject to change) for microfilming, publication of the abstract, and the archival copy is $21 (plus tax), plus $1 for postage. The fee (subject to change) for binding is $8.50 (plus tax).

When a project is required, it will be filed with the academic unit offering the degree program. Some record of the project, or the project itself, is preserved in the academic unit and, when appropriate, in the Library. When the appropriate authority recommends, a project or its written record may be treated as a thesis.

The thesis and, where appropriate, the project, must conform in matters of style and format to the rules in the section on "Theses and Projects" in the *Graduate Bulletin.* Since adherence to these rules must be checked and approved, and valuable assistance can be given with problems associated with illustrations, etc., students are advised to consult the Library adviser (in the reference area) well in advance of the final typing of the thesis. In addition, schools, divisions, departments, and programs have adopted particular style manuals which are to be followed in matters of documentation and bibliography (see the chart in the *Graduate Bulletin* or consult the Graduate Office, or appropriate academic area). Some graduate programs use style manuals or guides designed for journal articles. Although these are helpful for abbreviations, tables, figures and footnoting, as well as other purposes, students should be aware of the difference between a thesis and an article and make appropriate adaptations, approved by the graduate program adviser. Theses from the Library shelves should not be used as examples of correct format.

It is the student's responsibility to become acquainted with the appropriate rules and regulations and to make all necessary arrangements for the typing of the thesis, including instruction of the typist, if other than the student. An experienced typist is strongly advised, although the university does not endorse or recommend typists. Adequate time should be allowed for reading and criticism by the adviser, the committee members, and the library clerk, for revisions, as needed, and for completion of the final edition of the thesis, including approvals. No changes or additions will be allowed after the final signatures have been obtained.

The deadline for submission of the completed thesis to the adviser and committee is six weeks in advance of the last day of classes of the semester in which the student hopes to be awarded the degree, unless other arrangements are made with the school or department. The deadline for submission to the Library adviser is the last day of classes. **The deadline for depositing the approved copy of the thesis in the Titan Bookstore and making the arrangements for binding, microfilming and publication of the abstract, is the last day of final examinations for the semester or session in which the degree is to be awarded.** If a student's program requires a thesis, or if the project has been determined to be regarded as a thesis, the master's degree cannot be awarded unless the notification that the student has completed this final step is received by the dean of graduate studies.

Graduate Assistantships, Fellowships and Financial Aids

A limited number of appointments as graduate assistants are available to outstanding graduate students who are working in graduate degree programs. These may pay up to $1,540 per semester. If interested, consult the dean or chair of the appropriate academic area. Teaching fellowships are not currently available.

Each year the State of California may award a certain number of graduate fellowships (payment of fees only) to qualified students who are residents of California. Applications may be obtained from the Financial Aid Office or the Graduate Office.

The Graduate Office maintains a file of scholarship and fellowship opportunities offered by other educational institutions and foundations.

For information concerning other financial aids and part-time placement services, see the appropriate sections of this catalog.

International Study

Cal State Fullerton participates in The California State University and Colleges' program of study abroad. Under this program, limited studies taken at designated foreign universities, when arranged in advance, may be applied toward the requirements of a graduate degree awarded by Cal State Fullerton. It is important that plans be completed several months before starting such a program. For details see elsewhere in this catalog and consult the director of international education and exchange.

Second Master's Degree

A graduate student desiring to work for a second master's degree at Cal State Fullerton must request permission to apply for admission for a second master's degree program. A letter should be sent to the dean of graduate studies requesting approval and giving justification for the request. If the request is granted, the student must as a minimum satisfy all prerequisites and all requirements of the new degree program. Approval of classified standing for the second degree will be given only after the first degree has been awarded. Please consult the Graduate Office for further details.

Postgraduate Credit

Petitions for postgraduate credit for coursework taken in excess of baccalaureate degree requirements at Cal State Fullerton are obtained and filed in the Office of Admissions and Records. If approved, the appropriate notations will be entered upon the permanent record of the student.

If a graduate student has not, while an undergraduate, received permission to consider coursework which was not required for the baccalaureate as postgraduate, a petition may be filed for such credit to be granted retroactively.

If, subsequently, approval is given by the appropriate *graduate program adviser,* the committee and the dean of graduate studies, such coursework may be included as a part of the student's study plan, within existing regulations concerning applicable coursework and requirements for the degree. See also "Inapplicable Courses."

Enrollment in 500-Level Courses by Seniors

Under certain circumstances, a senior may take a 500-level course. If the student *is not* within nine units of graduation, postgraduate credit is not given for such courses. The senior must have a minimum grade-point average of 3.25 overall and of 3.5 in the field or fields of the intended graduate program, and the specific approval of the dean or chair of the academic area in which the course is offered and the chair or dean of the student's major area.

If the senior *is* within nine units of completion of graduation requirements and has been given approval, as above, the student may petition for postgraduate credit for these units as provided under "Postgraduate Credit."

ACADEMIC ADVISEMENT

ACADEMIC ADVISEMENT

OFFICE OF ACADEMIC ADVISEMENT

In order to help students make their study years a meaningful educational experience, the university established the Office of Academic Advisement. This office assists students in choosing an undergraduate major and in choosing general education courses and electives. It also provides initial interviews for special majors and is a center for undeclared majors, i.e., for those students who have not yet decided upon a major.

The Office of Academic Advisement is located in Room 112 of the Humanities-Social Sciences Building. No appointment is necessary to engage the assistance of an adviser about various aspects of the academic life at the university. For more specific information about the office, the student should consult the *Class Schedule*.

Choosing an Undergraduate Major

Every student is expected to choose a major or field of concentration by the beginning of the junior year. The majors currently offered at this university are described in the next sections of this catalog. Most major requirements allow students the freedom to take a number of courses in fields other than in their majors or closely related fields.

Lower division students who are uncertain about their primary vocational goals or educational interests may, and probably should, enroll as undeclared majors. Then, and during their freshman and sophomore years, such students should explore the possibilities open to them that will meet their interests and potentialities. To help students in their searching and selecting, the university has available a number of useful resources: the Office of Academic Advisement; summer advisement sessions and orientation programs that are given every year; a variety of counseling and testing services provided by the Counseling and Testing Centers; and the different department and school offices for information and advice on particular fields, their programs of study and later work opportunities. There also is a collection of college and university catalogs available in the Library. Additionally, there is a growing number of student organizations organized in terms of disciplinary and professional interests. The Career Planning and Placement Center also has much useful information on vocations and specific work opportunities.

Most students have general ideas about some subjects in which they might like to major, and almost all students are aware of the fields in which they do not wish to major. The task of selecting a major (and often a minor or other complementary specialization) then becomes one of crystallizing these earlier ideas on the basis of experiences in specific courses, discussions with other students and faculty, etc. Before commitment to a specific major, students should be sure that they have not rejected a field of study because of some wrong preconceptions or inaccurate information. Students also should not overlook interests and potentialities that they previously may not have discovered. The option of taking a limited number of courses on a Credit/No Credit basis often will be helpful in these pursuits. "Minicourses" also provide an excellent opportunity to explore the multiple areas of knowledge.

Students, however, must be very careful to plan freshman or sophomore programs which will permit their entering or taking advanced courses in fields they think they may want to be their majors. Such students should check such major requirements as mathematics, chemistry and foreign language which must be taken before the junior year or perhaps even begun during the freshman year. Students anticipating graduate or professional study in a certain field should exercise special care in planning their undergraduate programs, and they should seek faculty counseling in the fields concerned. Such choices do not have to be made during the first two years, and may or may not be made during the second two. However, careful and advance examination of the possibilities of graduate or professional study often will be helpful to students who have fairly clear ideas of the educational and vocational objectives they would like to seek.

Students also should be careful about concentrating so heavily in a particular field that they cannot change majors to a different field should they wish to do so. Some students come to the campus with no clear idea of the field in which they would like to major. Such students, and others whose goals and objectives have not yet firmly crystallized, will have opportunities to take courses in various fields and make up their minds during their lower division work. They should, however, take full advantage of the opportunities that exist on and outside the campus to learn more about available fields of study and occupational fields.

Planning a Major Program

When students have selected a major field, they should study carefully all the requirements which are specified in this catalog under their chosen degree program. Then they should make a tentative semester by semester plan for completing the requirements, with careful regard for courses which are prerequisite to others. They should discuss this plan with their major advisers who will be able to help them with any problems.

In addition to courses in the major department, related courses in other fields and supporting courses in basic skills also may be required. These, too, should be included in the tentative semester by semester plan. These auxiliary requirements are described in the degree program for each major.

Some departments require placement tests prior to admission to classes. The time and place for such tests is given in the class schedule, often before registration. Students should purchase a copy of the *Class Schedule* at the Titan Bookstore well before registration for classes begins.

Choosing General Education Courses and Electives

In keeping with the liberal arts tradition, the university requires its graduates to have sampled a variety of disciplines as part of their general education. The broad categories of general education courses are presented in the catalog section on "Graduation Requirements for the Bachelor's Degree." Through these requirements students are introduced to the worlds of values, ideas, and beauty, to mankind and his problems, to the natural world in which man lives, and to skills essential for scholarship.

To many students the selection of general education courses and electives poses many difficult choices. With well over 2,700 classes to choose from and over 50 fields of specialization that can be sampled, some demanding decisions must be made. Various aids or resources are available. Among these are: this catalog and the *Class Schedule* with their descriptions of regular and new and experimental courses; informal consultations with other students and faculty members; and advisers in the Office of Academic Advisement.

The reasons for selecting particular general education courses and electives include:

- A meaningful and adequate preparation for a selected field of study for those students who have decided on their major.
- The need to explore potential major or vocational interests.
- Curiosity about or enthusiasm for a particular subject.
- The desire to clarify thinking and values on problems and issues of personal and social significance.
- The urge to broaden and synthesize work in a specialization with perspectives and skil ls from other fields.
- The desire to deepen understanding and improve skills for such central human activities as personal relationships, family and community life, citizenship activities and leisure pursuits.
- The interest in experiencing the various approaches and teaching methods of different, talented teachers.
- Sharing learning experiences with friends.

Communication Skills

Skills in written, oral and gestural communication are important tools and marks of well educated men and women. Great competencies in both articulation and advocacy are arts well-worth attaining for living effective, full and civic lives and for achieving excellence in vocational careers.

A variety of experiences at the university provides opportunities to practice and develop

communications skills. The acts of written and oral expression also serve to consolidate, synthesize, and develop thinking and personality.

Students will be required to demonstrate, in all classes where written expression is appropriate, their ability to write clearly and correctly about the materials of the course. Ability of a student to demonstrate writing proficiency shall be used as a part of the final grade determination in any course.

Change of Major, Degree or Credential Objective

A student who wishes to change his major, degree, or credential objective must obtain the required form in the Office of Admissions and Records or the Office of Academic Advisement. Such a change is not official until the form has been signed and filed in the Registrar's Office. A student should be aware that he will be responsible for the requirements for the new choice of major, degree, or credential that are in the catalog in effect at the time he files a change.

DEPARTMENTAL ACADEMIC ADVISEMENT

According to the established practice at the university, each department follows the advisement system which it finds the most appropriate for its majors.

Each undergraduate student is assigned or may request an adviser who will help the student plan an academic program. The adviser is a resource person who can provide valuable information and suggestions and who can assist the student to find the most desirable ways to meet the requirements for graduation and for his major or credential. Although the adviser is consulted, the final choice of courses and the responsibility for the program lies with the student himself.

Academic program advisers are able to offer better advice when consulted if students come prepared with lists of courses they already have taken and their own copies of transcripts from colleges previously attended (if students are new to Cal State Fullerton).

Those seeking a credential will also be assigned a professional adviser by the School of Education. Students who have not yet decided upon a major (undeclared majors) or who are not seeking a degree will be advised in the Office of Academic Advisement.

Graduate students will be assigned a major adviser in their fields of specialization, except in education where all will have a professional adviser from the School of Education. Those students seeking a credential for teaching in secondary schools will be assigned both a professional and a major adviser.

PREPROFESSIONAL PROGRAMS

The academic programs of the university provide appropriate preparation for graduate work in a variety of fields. Students who have made tentative decisions about institutions in which they may wish to pursue graduate work should consult the catalogs of those graduate schools as they plan their undergraduate programs. Students planning to undertake graduate work should supplement their undergraduate programs by anticipating language requirements at major graduate schools and by intensive work in areas of special relevance to their intended graduate work. Professional schools in many universities either require or recommend that applicants complete four-year programs for admission. Although the professional schools do not always require a bachelor's degree, they generally encourage basic preparation and a broad general education leading to that degree before beginning specialization.

The university offers a number of professional programs through the master's degree. These include programs in the fine arts, business administration, communications, education, engineering, health education and physical education and recreation, library science, public administration, and speech pathology-audiology. Students interested in preparing for professional careers in these areas, either here or in other educational institutions, are encouraged to seek assistance and guidance from our faculty members in these fields.

Prelegal Preparation

Students planning to enter law school may elect any one of several majors. In general, the better law schools require that an applicant hold a baccalaureate degree. Although there is no uniform prelegal course of study or specific university major required, it is recommended that prospective law students prepare themselves in such fields as English, American history, economics, political science (particularly the history and development of English and American political institutions) and such undergraduate courses as judicial process, administrative law, constitutional law and international law, philosophy (particularly ethics and logic), business administration, anthropology, psychology and sociology.

The major chosen and many of the courses selected should demand a high level of performance in reading difficult material, understanding abstract and complex concepts, and speaking and writing clearly and persuasively. Prelegal students are advised to take the minimum program to meet the requirements of their chosen major and courses beyond the introductory survey level in other selected fields. A distribution of course sequences among the social sciences, the natural sciences and the humanities is desirable. Students with interests in becoming lawyers should contact the Prelaw Society. Some faculty members in the School of Business Administration and Economics and the Department of Political Science also can provide advice and assistance.

HEALTH PROFESSIONS

Health Professions Committee

Student counseling with respect to preprofessional programs in medicine, dentistry and other health sciences as well as professional school admission problems are the concern of this committee. (See membership listing, page All students wishing to prepare for dental or medical careers should register in the Office of the Vice President for Academic Affairs.

Predental Preparation

Dental schools are seeking applicants with broad preparation. Although admission is possible following 60 or 90 units of college work including basic science requirements, most successful applicants in California complete their baccalaureate degree prior to admission to dental school. Dental schools vary with respect to their requirements, thus the student is advised to consult the admission requirements of the individual schools to which he anticipates making application. The basic program listed below under premedical preparation, although more extensive than required for many individual dental schoosl, would meet the requirements for all of the California dental schools and the majority of the others in the United States. The prospective dental student should take the Dental College Admission Test (DAT) one year prior to the date at which he plans to enter dental school. Application blanks for the test may be obtained from the Office of the Vice President for Academic Affairs.

Premedical Preparation

Medical schools are currently seeking applicants with as broad and liberal an educational experience as possible. They recommend that applicants pursue collegiate major programs which are of vital interest to the student. However, all medical schools require a basic minimal training in the natural sciences and English. The Health Professions Committee, upon review of the medical school admission requirements, recommends the following coursework which satisfies this minimum training:

one year of English

four semesters of biology (including embryology and genetics)

one year of general chemistry

one year of organic chemistry with laboratory

at least one semester of biochemistry

one year of college physics with laboratory

one year of calculus

Most medical school applicants complete a baccalaureate degree program prior to beginning their medical training. However, applications to medical school are processed normally at the termination of the sixth semester (junior year). The Medical College Admission Test (MCAT), required of all medical school applicants, is taken normally during the spring of the sixth semester (junior year). The prospective medical school applicant should therefore normally plan to complete the above natural science minimal requirements by the end of the junior year. Thus he should begin general chemistry in his freshman year in order to satisfy the prerequisite requirements for the advanced courses in chemistry.

Since medical school admissions are limited, the best prepared applicants are likely to have an advantage. Many medical schools recommend certain courses in the natural sciences in addition to those listed above in the minimal requirements.

The prospective applicant is advised to consult the catalogs of those medical schools to which he anticipates applying for additional recommended preparatory subjects. He is further advised to consult the chair or any member of the Health Professions Committee for assistance in planning his total collegiate program. Application forms for the MCAT can be obtained from the Office of the Vice President for Academic Affairs.

Preoptometry

The study and practice of optometry requires a high degree of responsibility, devotion, intellectual curiosity and social commitment. The individual's education prior to optometry school should demonstrate and strengthen these qualities.

Academic requirements for admission to colleges of optometry are based on standards provided by the California Optometry Law, the accrediting bodies and the judgment of College Admissions Committee.

At the college level, completion of a minimum of 60 semester units or 90 quarter units is required for admission; however, the accumulation of more units or attainment of any undergraduate degree is suggested. The ratio of applicants to available places is disproportionate; therefore, a student without a degree must demonstrate exceptionally high scholastic achievement, intellectual capacity and motivation in order to gain admission.

The following courses must be completed prior to enrollment and are the minimum requirements for most colleges of optometry:

Analytical geometry or calculus (3 semester units or 4 quarter units)

General biology or zoology to include laboratory (8 semester units or 12 quarter units)

Microbiology or bacteriology to include laboratory (no substitutions are allowed) (3 semester units or 4 quarter units)

General physics to include laboratory (8 semester units or 12 quarter units)

General chemistry to include laboratory (8 semester units or 12 quarter units)

Psychology (Statistics will not meet this requirement) (6 semester units or 8 quarter units)

English—composition or literature (6 semester units or 8 quarter units).

Other Health Professions

Preprofessional preparation for osteopathy, pharmacy, pharmacology, podiatry and veterinary medicine should be arranged in consultation with the chair of the Health Professions Committee.

No specific bachelor's degree programs are available at Cal State Fullerton in professional areas such as dental technician, occupational therapy, physical therapy. Preparatory work for such programs is available. Students should register their specific interest preference in either the Office of the Vice President for Academic Affairs or the department offices in biological science or chemistry.

Medical Technology

A concentration in medical technology is available under the B.A. in Biological Science program. Students interested in pursuing this field of study should select appropriate paramedical courses as electives in their study plan. A concentration in medical technology is also available under the M.A. in Biology. For further details, consult the coordinator of medical technology in the Department of Biological Science.

Social Welfare

Full preprofessional training usually consists of two years of graduate training leading to the degree of Master of Social Welfare. Students who plan to seek employment in social work or social welfare should prepare themselves in the fields of human services, psychology (particularly child and adolescent psychology), sociology, anthropology, political science, economics and research methods in social science.

Students who intend to enter a professional school following undergraduate training should learn about the specific prerequisites for admission to the graduate school of their choice. Ordinarily a major in one of the social sciences, and some additional work in at least several other social sciences, is recommended. Students with interests in pursuing careers in the fields of social welfare should contact the Department of Sociolgoy for advice and assistance.

Pretheological

Students who might be interested in pursuing careers in counseling, social work, the teaching of religion, and the ministry and associated fields should take some courses in religion, psychology, anthropology, sociology, philosophy, education, communications, history, English, speech communication and a foreign language. Students desiring assistance and counseling regarding advanced work or professional careers may seek help from the faculty in the Department of Religious Studies.

UNIVERSITY CURRICULA

UNIVERSITY CURRICULA

DEGREE PROGRAMS

California State University, Fullerton offers the following baccalaureate degree programs which are described on the pages listed:

	Page
B.A. American Studies	222
B.A. Anthropology	224
B.A. Art	88
B.A. Biological Science	345
B.A. Business Administration	126
B.A. Chemistry	357
B.S. Chemistry	355
B.A. Communications	236
B.A. Comparative Literature	244
B.S. Computer Science	156
B.A. Criminal Justice	248
B.A. Earth Science	365
B.A. Economics	135
B.S. Engineering	370
B.A. English	251
B.A. Ethnic Studies	218, 231
B.A. French	257
B.A. Geography	271
B.A. German	257
B.A. History	276
B.S. Human Services	162
B.A. Latin American Studies	166
B.A. Liberal Studies	168
B.A. Linguistics	293
B.A. Mathematics	389
B.A. Music	103
B.M. Music	105
B.A. Philosophy	300
B.S. Physical Education	208
B.A. Physics	397
B.A. Political Science	304
B.A. Psychology	314
B.A. Religious Studies	322
B.A. Russian Area Studies	169
B.A. Sociology	326
B.A. Spanish	257
B.A. Special Major	172
B.A. Speech Communication	333
B.A. Theatre Arts	116

The following master's degree programs are offered:

	Page
M.A. Anthropology	225
M.A. Art	91
M.A. Biology	346
M.B.A. Business Administration (including a concentration in international business)	133
M.A. Chemistry	359
M.A. Communications	238
M.A. Comparative Literature	244
M.S. Computer Science	158
M.S. Counseling	177
M.A. Economics	135
M.S. Education (with emphases in elementary education, reading, school administration, and special education)	180, 186, 189, 200
M.S. Engineering	373
M.A. English	252
M.S. Environmental Studies	161
M.A. French	258
M.A. Geography	271
M.A. German	258
M.A. History	278
M.S. Library Science	289
M.A. Linguistics	293
M.A. Mathematics	391
M.A. Music	107
M.S. Physical Education	210
M.A. Political Science	305
M.A. Psychology	315
M.S. Psychology (concentration in Clinical/Community)	316
M.P.A. Public Administration	306
M.A. Social Sciences	170
M.A. Sociology	326
M.A. Spanish	258
M.A. Special Major	173
M.A. Speech Communication	334
M.A. Theatre Arts	118

The university is accredited by the California State Board of Education and the National Council for Accreditation of Teacher Education for programs leading to credentials and master's degrees.

SUBJECT FINDER

The listing of degree programs does not include all of the fields or subject matter areas in which some courses currently are being offered at Cal State Fullerton. Additionally, different colleges and universities differ in the names they assign to degrees, curricular programs, and the academic units offering courses. The following "subject finder" lists some of the most commonly used terms for fields with information on where courses or programs on these subjects can be located at Fullerton and in this catalog.

Subject	*Page*
Accounting	128
African Studies (See Afro-Ethnic Studies, Anthropology, Geography, History, Political Science)	
Afro-Ethnic Studies	218
American Indian Studies	222
American Studies	222
Anthropology	224
Art	88
Art Education	98
Art History	89
Asian Studies (See Anthropology, Comparative Literature, Geography, History, Political Science)	
Astronomy	344
Behavioral Sciences in Education	177
Biological Science	344
Business Administration	126
Chemistry	355
Chicano Studies	231
Chinese	260
Classics (See Comparative Literature, History and Latin)	
Communications	235
Comparative Literature	244
Computer Science	156
Counseling	177
Criminal Justice	248
Dance	98
Drama (See Theatre)	116
Drama Education (See Theatre Education)	124
Earth Science	356
Economics	135
Education	176
Reading	180
School Administration	186
School Counseling	176
School Psychology	176
School Psychometry	176
Special Education	189
Teacher Education	194
Engineering	369
English	250
English Education	257
Environmental Education	404
Environmental Studies	160
Ethnic Studies (See Afro-Ethnic Studies and Chicano Studies)	
Finance	129
Folklore (See Anthropology and Comparative Literature)	
Foreign Languages and Literatures	257
Foreign Languages Education	260
French	257
Geography	270
Geology (See Earth Science)	

German 257
Graduate Studies 85
Health Education 211
Hebrew 265
History 276
Human Services 162
Interdisciplinary Center 164
International Relations (See Political Science, Economics, History)
International Study 85
Italian 265
Japanese 266
Journalism (See Communications)
Journalism Education 243
Latin 266
Latin American Studies 166
Law (See Political Science, Management)
Library Science 289
Liberal Studies 167
Linguistics 292
Management 130
Marketing 130
Mathematics 389
Mathematics Education 396
Meteorology 299, 396
Medical Biology Courses 355
Mexican-American Studies (See Chicano Studies)
Music 101
Music Education 115
Mythology (See Anthropology and Comparative Literature)
Native American Studies (See American Indian Studies)
Nature Interpretation 404
Oceanography 354, 396
Philosophy 300
Photography (See Art and Communications)
Physical Education 208
Physical Science 397
Physics 397
Political Science 304
Portuguese 266
Psychology 314
Public Administration (See Political Science)
Public Relations (See Communications)
Quantitative Methods 131
Radio (See Theatre and Communications)
Reading 180
Recreation 216
Religious Studies 322
Russian 267
Russian Area Studies 168
Sanskrit (See Linguistics)
School Administration 186
Science Education 403
Social Sciences 170
Social Welfare 77
Social Work (See Social Welfare)
Sociology 325
Spanish 257
Special Major 172
Speech (See Speech Communication)
Speech Communication 333

Speech Communication Education 341
Sports (See Physical Education)
Statistics (See Mathematics and Quantitative Methods)
Student-to-Student Tutorial 85
Swahili 270
Teacher Education 194
Technological Studies 173
Television (See Theatre and Communications)
Theatre 116
Theatre Education 124

COURSE DESCRIPTIONS

Course descriptions briefly describe the content or subject matter to be covered and provide additional information on units of credit, the level of instruction (general course numbering code), prerequisites, and the type of course (lecture, laboratory, activity, seminar, and individually supervised work). Information on specific offerings of courses (times, rooms, instructors) will be found in the class schedule which is printed in advance of the fall and spring semesters. Information on additional (new, special or experimental) courses for each semester also can be found in these class schedules.

Some of the courses listed in the catalog are not taught every year. Many are taught once only every year. Others are taught every semester, and often in many sections. Advance information regarding the plans for offering particular courses may be obtained from the offices of the departments teaching them.

The forms and methods of teaching vary widely in specific classes, depending on the subject matter and purposes and the particular instructor and students. The more traditional methods of lecturing, discussion, laboratory work, and individually supervised research or projects increasingly are being supplemented by such learning resources as group and individual exercises, television, and films and records, videotaping, and the use of the computer. Modern specialized facilities and equipment are used in many courses in different fields. These include: laboratories for teaching the sciences; studios for teaching the fine arts; a small museum and archaeology/physical anthropology laboratory; a variety of facilities for teaching communications; a language laboratory for teaching foreign languages and linguistics courses; a speech and hearing clinic; and the Tucker Wildlife Sanctuary.

Cal State encourages experimentation and innovation in teaching and welcomes a diversity of approaches. Increasingly, and with growing help from students, efforts are being made on the campus to examine and evaluate and improve the learning experiences in some classrooms in more scholarly ways. Students also are being provided more opportunities to learn through teaching experiences in activities such as tutoring.

SCHEDULES

A new *Class Schedule* is published in advance of the fall and spring semesters. This general, university schedule contains not only detailed information on times, places, and instructors for specific courses but also materials on registration, new courses that are not in the catalog, the times for final examinations, and many other useful items for course and program planning. The *Class Schedule* may be purchased at the Titan Bookstore. Special schedules, which may be obtained from the Office of Continuing Education, are provided for the summer sessions and the extension curriculum.

GENERAL COURSE NUMBERING CODE

100-299 Lower division courses of freshman and sophomore level, but open also to upper division students.

300-399 Upper division courses of junior and senior level, which do *not* give graduate credit

unless included on an approved graduate study plan (such as a credential or graduate degree program) for a specific graduate student.

400-499 Upper division courses of junior and senior level which give graduate credit when taken by a graduate student. (Note limitations in specific graduate programs.)

500-599 Graduate courses organized primarily for graduating students.*

700-799 Graduate professional courses in the postgraduate program, not applicable to graduate degrees.

DEPARTMENTAL COURSE NUMBERING CODE

Because of the differences in the organization and content of the various disciplines and professions, there is no uniform, reasonable way of numbering courses that would be equally useful for all fields of knowledge. Some of the departments explain the logic of their own course numbering system in this catalog.

In general it may be assumed that increases in class (freshman, sophomore, junior, senior, or graduate) and certainly division level (lower, upper, graduate) correlate with more difficult and challenging academic work. Sometimes, however, disciplines organize their course numbering partly in terms of criteria other than degree of difficulty: e.g., anthropology numbers its area courses in the 300's and its theoretical or institutional courses in the 400's. It should be noted, too, that some students find introductory courses to be more demanding than advanced, specialized courses: in such courses, a more comprehensive approach and the first exposure to new ways of thinking may be harder for some individuals than covering a smaller, more familiar area, in much greater detail.

SPECIAL COURSE NUMBERS

For uniformity, certain types of courses have been listed by all departments and schools with the same numbers: 499 and 599 are used for undergraduate and graduate "independent study"; 196 or 496 for "student-to-student tutorials"; 597 for a graduate "project"; and 598 for a graduate "thesis." The course numbers for senior seminars are not so uniform but they tend to be numbered 485, 490, 491 or 495.

EXPLANATION OF COURSE NOTATIONS

Certain notations are uniformly used in the course descriptions in this catalog.

1. The figure in parentheses following the course title indicates the number of semester units for the course. Courses offered for varying units are indicated as (1-3) or (3-6).

2. A course listing such as Anthropology 416 (3) (Same as Interdisciplinary Center 403) indicates that the course is "cross-listed" by both departments, i.e. a student can choose to take the course and count it as either an anthropology *or* an Interdisciplinary Center course; if the complete course description is found with the Interdisciplinary Center courses, it should be followed by "(Same as Anthropology 416)."

3. A notation such as (Formerly 433) following the course title and the number of units indicates the same course previously was numbered 433.

PREREQUISITES

Students are expected to meet stated prerequisites for all courses. However, in exceptional cases, and at the discretion of the division in which the course is taught, students may be allowed to meet prerequisites by examination.

INDEPENDENT STUDY

Under the independent study program, the upper division student can pursue topics or problems of special interest beyond the scope of a regular course under the supervision of a faculty advisor. The work is of a research or creative nature, and normally culminates in a

*Note exceptions on page 49.

paper, project, comprehensive examination, or performance. Before registering, the student must get his topic approved by the instructor who will be supervising independent study. The catalog numbers for independent study in departments are 499 and 599. Independent study courses may be repeated. A student wishing to enroll in more than six units of independent study in any one semester must have the approval of his major advisor and of the chair of the department(s) in which the independent study is to be conducted.

INTERNATIONAL STUDY COURSES

Cal State Fullerton students under The California State University and Colleges International Study Programs register concurrently at Cal State Fullerton and at the host institution abroad, with credits assigned to the student which are equivalent to courses offered at Cal State Fullerton. Undergraduate students who discover appropriate study opportunities at the host institution but no equivalent course at Cal State Fullerton may use Independent Study 499 and International Study 292 or 492. Graduate students may use Independent Graduate Research 599 and International Study 592.

292 Projects in Study Abroad (Subject): (1-6 lower division units)
Open to students enrolled in California State University and Colleges International Programs. Study undertaken in a university abroad under the auspices of The California State University and Colleges.

492 Projects in Study Abroad (Subject): (1-3 upper division units)
Open to students enrolled in California State University and Colleges International Programs. Study undertaken in a university abroad under the auspices of The California State University and Colleges.

592 Projects in Study Abroad (Subject): (1-3 graduate units)
Open to students enrolled in California State University and Colleges International Programs. Study undertaken in a university abroad under the auspices of The California State University and Colleges.

LIBRARY COURSE

300 Elements of Bibliographic Investigation (3)
An investigation of the elements of bibliographic research which will enable students to become sophisticated library users. Will discuss such topics as: the organization of knowledge in libraries, a survey of important research materials in various fields found in American libraries; how to prepare bibliographies and assemble information for term papers; and style manuals.

GRADUATE STUDIES 700

A credit/no credit course with no (0) units of credit, which is designed to ensure continuous registration for those graduate students with an advanced degree objective who find that they are unable to enroll in regularly scheduled coursework. This course does not require class attendance. Permission to register in Graduate Studies 700 may be requested from the academic area sponsoring the graduate degree sought.

Registration in Graduate Studies 700 normally will be restricted to graduate students who have been classified or who are in a prescribed prerequisite program for a specific graduate degree (conditionally classified).

STUDENT-TO-STUDENT TUTORIALS

The university has begun a program of experimentation with and development of "student-to-student tutorials." One of the fastest and profoundest ways to learn is to teach. The "student-to-student tutorial" will provide a formal way to encourage students to learn through teaching. It will expand significantly the opportunities for students to have meaningful experiences as teachers. At the same time, it greatly will increase the amount of tutoring available and will extend tutoring to all of the kinds of students who need and want tutorial assistance.

Students electing to be tutors not only will increase their mastery of particular subject matters but also will have practice in developing their communication, cooperation and interpersonal relationship skills. Most important adult roles and jobs also involve a teaching dimension and the tutorial experience will provide opportunities to develop awareness of teaching problems and competence in teaching techniques.

Each department will decide whether or not it wishes to offer this course. Departments choosing to offer the student-to-student tutorial course will follow the rules listed in the following course description.

The course numbers will be 196 or 496, and one to three units of credit can be given for each course.

Prerequisites: A 3.0 or more grade-point average and/or consent of instructor and simultaneous enrollment in the course or previous enrollment in a similar course or its equivalent. The tutor and his tutee or tutees will work in mutually advantageous ways by allowing all involved to delve more carefully and thoroughly into the materials presented in this specific course. One to three students may be tutored by the tutor unless the instructor decides that special circumstances warrant increasing the usual maximum of three tutees. Three hours of work are expected for each unit of credit, and this work may include, apart from contact hours with tutees, such other activities as: tutorial preparations; consulting with instructors; reporting, analysis and evaluation of the tutorial experiences; and participation in an all-university orientation and evaluation program for tutors. A maximum of three units can be taken each semester and nine units of any combination of 196 and 496 for an undergraduate program. This course must be taken as an elective and not counted toward general education, major or minor requirements. The course can be taken on a credit/no credit basis by the tutor. Requests for tutors must be initiated by tutees and can be initiated up until the official university date for dropping a class with a W. Tutors electing to respond to such requests will receive credits at the end of the semester and can register in the course until the official university date for dropping a class with a W. Both tutors and tutees must submit written reports, analyses and evaluations of their shared tutorial experience, and both must participate in an all-university orientation program as well as in any conference or critiques that the instructor of the course may require.

Further information can be obtained from the department in which the student is interested in "student-to-student tutorials."

THE ARTS

SCHOOL OF THE ARTS

Acting Dean: Jerry Samuelson
Associate Dean: Donald R. Henry

DEPARTMENT OF ART

FACULTY
G. Ray Kerciu
Acting Department Chair

Robert Baron, Alvin Ching, Darryl Curran, Naomi Dietz, Henry Evjenth, Robert Ewing, Dextra Frankel, Carmel Goode, Ray Hein, Thomas Holste, George James, Claude Kent, Ruth Kline, Donald Lagerberg, Michael Lee, Clinton MacKenzie, Robert MacLean, Robert Partin, Albert Porter, Leo Robinson, Jerry Rothman, Jerry Samuelson,* Victor Smith, Jon Stokesbary, Vincent Suez, George Williams.

The Department of Art offers a program which includes the several fields of art history, theory and appreciation; drawing, painting, sculpture; design and crafts; and art education. The broadest objective of the program is to contribute to the intellectual, social, and creative development of the student as he prepares for citizenship in a democratic society. More specifically, the art program provides opportunities for students: (1) to develop a knowledge and understanding of those general principles of visual organization and expression basic to all forms and fields of art; (2) to develop a critical appreciation and understanding of historical and contemporary art forms through a study of these principles as they relate to the range of artistic production of mankind; (3) to use these general principles as a means to express more clearly their ideas, thoughts, and feelings in the creation of visual forms; (4) to develop those understandings and skills needed to pursue graduate studies in the field, to teach art in the schools, or to qualify for a position in business and industry as an art specialist.

Undergraduate curricula leading to the bachelor of arts degree have been designed to meet the specialized needs of the following groups: (1) students who wish to study art as an essential part of their personal and cultural development; (2) students seeking preprofessional preparation in art; and (3) students planning to teach art in grades K-12.

To qualify for a baccalaureate degree with a major in art, students must have a C or better in all courses required for the degree. No credit toward the major will be allowed for specific major courses in which a grade of D is obtained. As is customary, the Art Department reserves the right to hold projects completed by a student for class credit for a period of three years.

BACHELOR OF ARTS IN ART

Three course programs have been planned to meet the individual needs and interests of students working for the bachelor of arts degree with a major in art. In the development of specific course offerings which make up these programs, it has been the concern of the art faculty to see that each program contains: (1) basic courses in art history, theory, appreciation, and studio practice which have as their primary focus the study of those general principles of visual organization and expression underlying all fields of art: (2) more specialized courses which provide for adequate preparation in depth in a single field of art. The teaching of art history, theory, and criticism is not confined to courses bearing that title. Rather, each studio course involves theory as well as the practice of art, includes as part of its content the study and reference to related historical art forms, and has as part of its purpose the development of those critical abilities which are necessary to a valid evaluation and appreciation of the art expressions of man.

Plan I provides for an emphasis in the area of art history, theory, and appreciation and is particularly recommended for those students who wish to pursue graduate studies in art history or museology.

*University administrative officer.

Plan II is designed for those students who prefer a studio-type program with a preprofessional orientation and an area of specialization selected from the following: (1) drawing and painting; (2) printmaking; (3) sculpture; (4) crafts; (5) ceramics; (6) graphic design; (7) illustration; (8) environmental design; or (9) creative photography.

Plan III is for those students who wish to meet the requirements for single subject instruction (Ryan Act) for teaching art in grades K-12.

Plan I requires a minimum of 60 units in art or approved related courses with a minimum of 36 units of upper division in art. Plan II requires a minimum of 60 units in art with a minimum of 33 units of upper division in art. Plan III requires a minimum of 54 units of art including a minimum of 27 units of upper division art.

In addition to the requirements listed below for the major, students must meet the other university requirements for a bachelor of arts degree (see page 56). Students following Plan III also must meet any specific requirements for the desired teaching credential (see section in catalog for School of Education).

PLAN I: ART HISTORY EMPHASIS *Units*

Preparation for the Major: Art history 201A,B (6 units); 6 units of studio courses; approved electives (12 units) in art, anthropology, drama, foreign languages, history, literature, music or philosophy 24

The Major: Art history (18 units) including one course from each of the following six groups: 301-302; 411-412; 341-421-422; 431-432; 451-452; 461; an additional three courses (9 units) to add depth in three of the above groups; and three courses (9 units) of approved electives 36

Reading knowledge of one modern foreign language

PLAN II: STUDIO EMPHASIS

Drawing and Painting

Preparation for the Major: Art 201A,B; 107A,B; 103; 104; 117 (3 units) and 207A,B 27

The Major: Art 307A,B; 317A,B; 487A,B or C (6 units); 6 units of upper division art history; and 9 units of art electives 33

Printmaking

Preparation for the Major: Art 201A,B; 107A,B; 247; 117 (3 units); 103; 104; and 3 units of art electives 27

The Major: Art 347A,B; 487D (6 units); 307A, 317A; 6 units of upper division art history; and 9 units of art electives 33

Sculpture

Preparation for the Major: Art 201A,B; 107A,B; 103; 104; 216A,B; 117 (3 units).... 27

The Major: Art 316A,B; 336A,B; 486 (6 units); 6 units of upper division art history and 9 units of art electives 33

Crafts

Preparation for the Major: Art 201A,B; 107A,B; 103; 104; 205A; and 6 units selected from Art 106A, 123B, 205B, 216A, or 117 (3 units)..... 27

The Major—General Concentration: Art 305A; 315A; 325A; 330 or 355A or 365A; 6 units of upper division art history and 15 units selected from Art 305B, 315B, 316A, 325B, 338A, 485A, 485B, 485C, 485D or 485E 33

The Major—Jewelry/Metalsmithing Concentration: Art 305A; 315A,B; 325A,B; 6 units of upper division art history; 6 units selected from Art 305B, 330, 355A, 365A or 338A; and 6 units selected from 485A or 485C 33

The Major—Fibers Concentration: Art 355A,B; 365A,B; 6 units selected from 330, 485D or 385E; 6 units of upper division art history; and 9 units of art electives 33

Ceramics

Preparation for the Major: Art 201A,B; 107A,B; 103; 104; 106A,B; 117 (3 units).... 27

The Major: Art 306A,B; 326A,B, or 426A,B; 484 (6 units); 6 units of upper division art history and 9 units of art electives 33

Graphic Design

Preparation for the Major: Art 201A,B; 107A,B; 103; 104; 223A,B; 117 (3 units).... 27

The Major: Art 323A,B; 483A (6 units); 338A; 363A; 6 units of upper division art history; and 9 units of art electives 33

Illustration *Units*

Preparation for the Major: Art 201A,B; 107A,B; 103; 104; 123A; 117 (3 units); and 3 units of art electives 27

The Major: Art 363A,B; 483C (6 units); 317A,B; 323A; 6 units of upper division art history; and 6 units of art electives 33

Environmental Design

Preparation for the Major: Art 201A,B; 107A,B; 103; 104; 123B; and 6 units of art electives 27

The Major: 313A,B; 333A,B; 483B (6 units); 453A; 6 units of upper division art history and 6 units of art electives 33

Creative Photography

Preparation for the Major: Art 201A,B; 103; 104; 107A,B; 117 (3 units); 247; and 3 units of art electives 27

The Major: 338A,B; 489 (6 units); 347A; 6 units of upper division art history; and 6 units selected from 323A, 363A, 307A, 347B, or 443A; and 6 units of art electives 33

PLAN III: TEACHING EMPHASIS
Single Subject Instruction—Ryan Act
(Qualifies for teaching Art in grades K-12)

Preparation for the Major: Art 103; 104; 106A; 107A,B; 3 units of 117 or 123A; 201A,B; and 205A 27

The Major: (Select one of the following)

Drawing and Painting: 307A,B; 316A; 317A; 338A or 443A; 347A; 411 or 412; and 441A,B 27

Crafts: 305A; 306A,B; 307A; 315A; 330; 411 or 412; and 441A,B 27

Graphic Design and Photography: 307A; 323A; 338A; 347A; 363A; 411 or 412; 443A; and 441A,B 27

Professional Preparation:

Art Ed 442 3

Education coursework 9

Student teaching (one semester full time) 12

Program Requirements:

1. Assignment by the Art Department chair to a faculty adviser in art education.
2. Fulfill credential requirements listed in this catalog within the School of Education for the curriculum pertinent to the Ryan Act provisions.
3. Meet the requirements listed under Plan III, Teaching Emphasis for the bachelor's degree in art.
4. Completion of major and education course requirements prior to enrolling in student teaching.
5. Admission to teacher education through the School of Education is required prior to enrollment in Art Ed 442 and student teaching.
6. Acceptance for student teaching is based on candidate quotas, a review of a candidate's portfolio of art work, and evidence of success in university coursework completed.
7. Recommendation by the faculty adviser in art education.

Upon completion of the above program and the bachelor of arts degree, the student is eligible for a partial credential, which meets state requirements for teaching in grades K-12. Within a specified period of time from the beginning of a teaching assignment, 30 units of coursework must be completed at an accredited college or university to qualify for a full credential. Credentials are issued from the institution where this unit requirement has been completed.

Multiple Subject Instruction—Ryan Act

The following three courses are recommended for all students intending to teach in the elementary schools in multiple subject classrooms:

	Units
Art 380	3
Music 333	3
Theatre 402	3
	9

The following additional list of courses would be strongly recommended for any student who wishes to expand his knowledge in any or all of the arts:

Art 100, 101, 103, 104, 107A, 201A,B, 310A,B, 330, 380, and 441A,B

Dance 100, 112, 122, 125A,B, 132, 142, 152, 162, 206A,B, 311A,B, 331A,B, 484

Music 111A,B, 184A,B, 251, 281A,C,E,G, 283A, 381B, 435

Theatre 100A,B, 211, 263A, 276A, 277, 370A,B, 402, 403, 411C

MINOR IN ART FOR THE BACHELOR OF ARTS DEGREE

A minimum of 24 units is required for a minor in art for the bachelor of arts degree of which a minimum of 10 units must be in upper division courses. Included in the program must be a basic course in each of the following areas: (1) art history and appreciation; (2) design; (3) drawing and painting; and (4) crafts. Those students planning to qualify for a standard teaching credential with specialization in elementary or secondary teaching and art for a minor must obtain approval from the Art Department for the courses selected to meet the upper division requirements for a minor in art.

MASTER OF ARTS IN ART

The program of studies leading to the master of arts degree in art provides a balance of theory and practice for those who desire to teach art or wish to develop a sound basis for continued advanced work in this field. The program offers each student the opportunity to expand his intellectual and technical resources and to acquire greater richness and depth in terms of creative understanding and achievement in one of the following areas of concentration: (1) drawing and painting (including printmaking); (2) crafts (including ceramics); (3) design; (4) sculpture; and (5) art history.

Prerequisites

1. Conditionally classified standing
   - A. A baccalaureate degree from an accredited institution.
   - B. GPA of minimum 2.5 in the last 60 semester units attempted.
   - C. Special requirements:
     - (1) Studio emphasis: review of preliminary portfolio by department chair.
     - (2) Art history emphasis: satisfactory score on the Educational Testing Service Undergraduate Record Exam—Area Tests and preliminary interview by art history coordinator.

2. Classified standing
   - A. A baccalaureate degree from an accredited institution.
   - B. GPA of minimum 2.5 in the last 60 semester units attempted.
   - C. Special requirements:
     - (1) An undergraduate major in art or 24 units of upper division art including at least 12 units of upper division study in the elected area of concentration with a GPA of 3.0 or better. In the art history emphasis a satisfactory score on the Educational Testing Service Undergraduate Record Exam—Area Tests is also required.
     - (2) Portfolio review—before any units may apply to the approved study program for the degree, the student must arrange for a faculty committee evaluation of the student's background, including a statement of purpose by the student and review of creative work, or, for art history applicants, a submission of an assigned research topic. Portfolio review dates are April 1 for the following fall semester, and November 1 for the following spring semester of each year. Arrangements may be made through the Art Department office to meet these deadlines prior to admission.
   - D. Development of an approved study plan.

Study Plan

The degree program requires 30 units of graduate study approved by the student's graduate committee of which 15 must be 500-level courses. The 30 units are distributed as follows:

	Units
1. Core courses in art history, philosophy, analysis and criticism	9
A. Art 500A Graduate Seminar in Major Field (3 units) (admission for students with classified status only)	
B. Art 500B Graduate Seminar in Major Field (3 units) (admission for students with classified status only)	
C. Art 481 Seminar in Art History (3 units), or substitute of a 400-level art history course, or Philosophy 311, Aesthetics, on the recommendation of the major adviser	
2. 500- and/or 400 level courses in the area of concentration selected from one of the following areas	12
A. Drawing and painting	
B. Crafts	
C. Design	
D. Sculpture	
E. Art history	
3. Additional coursework in area of concentration or approved electives	3-6
4. Project or thesis	3-6
	30

All courses must be completed with a B average, and all courses in the area of concentration must be graded B or better. The Department of Art requires the candidate for the Master of Arts in Art degree to exhibit his or her project in the department upon completion of the Master of Arts in Art degree and the art faculty reserves the right to retain an example from the student's master's exhibit for the university collection.

For further information, consult the Department of Art.

See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin*.

ART COURSES

100 Exploratory Course in Art (3)
Exploration and creative use of a variety of art materials, processes, and concepts. Field trips required. Not open to art majors for credit except by permission of Art Department. (6 hours activity)

101 Introduction to Art (3)
A course for the general student designed to develop an understanding of historical and contemporary art forms. Illustrated with examples of painting, sculpture, architecture, and design. Field trips required. Not open to art majors for credit except by permission of Art Department.

103 Two-dimensional Design (3)
The inventive use of materials, tools and elements of plastic organization as related to a two-dimensional surface. (6 hours activity)

104 Three-dimensional Design (3)
The inventive use of materials, tools and elements of plastic organization as related to three-dimensional form. (6 hours activity)

106A,B Beginning Ceramics (3,3)
Prerequisite: Art 103. A basic course in the study of form as related to ceramic materials, tools, processes and concepts. (6 hours activity)

107A,B Beginning Drawing and Painting (3,3)
Beginning work in the creative use of the materials of drawing and painting with emphasis on visual concepts, use of medium, individual exploration, and growth, planning and craftsmanship. 107A emphasizes drawing; 107B emphasizes painting. (9 hours laboratory)

117 Life Drawing (1)
Drawing from the live model. May be repeated to a maximum of 4 units. (3 hours laboratory for each unit)

123A,B Descriptive Drawing (3,3)
An intensive study of traditional and contemporary drawing techniques and theories. Emphasis in 123A on representation of nature forms and in 123B on manmade and mechanical forms including linear perspective. (9 hours laboratory)

201A,B Art and Civilization (3,3)
A comparative survey of the basic ideas, forms and styles of the visual arts as they developed in various cultures from prehistoric time to the present day.

205A Beginning Crafts (3)
Prerequisites: Art 103 and 104. Art 104 may be taken concurrently. A study and evaluation of craft concepts, processes and materials as they relate to the development of aesthetic forms based on function. (6 hours activity)

205B Beginning Crafts: Wood (3)
Prerequisites: Art 103 and 104. Art 104 may be taken concurrently. A study and evaluation of woodworking concepts and processes as they relate to the development of wood into aesthetic form based on function. (6 hours activity)

207A,B Drawing and Painting (Experimental Methods and Materials) (3,3)
Prerequisites: Art 117, 107A,B or equivalents. An intensive study of traditional and contemporary methods and materials as they relate to current approaches in drawing and painting. (9 hours laboratory)

213A,B Beginning Environmental Design (3,3)
Prerequisites: Art 103 and 104 or equivalents, and Art 123B. An introduction to design theory and communication skills related to the design field. **A**—Emphasis on architectural terminology, plans and elevations, and graphic symbols. **B**—Emphasis on material analysis, finishes and lighting concepts. (6 hours activity)

216A,B Beginning Sculpture (3,3)
Prerequisite: Art 104. An introductory course in sculpture with emphasis on the creative use of wood and metal, power equipment and hand tools. (6 hours activity)

223A,B Lettering, Typography and Rendering (3,3)
Prerequisite: Art 103. A study of the history, design and use of letter forms including techniques for rough and comprehensive layouts and the use of both hand-lettered forms and handset type. (6 hours activity)

247 Beginning Printmaking (3)
Prerequisite: Art 107A,B. An introductory course of all printmaking forms to include litho, etching, woodcut and serigraphy. (6 hours activity)

288 Design for the Theatre (3)
(Same as Theatre 288)

301 Ancient Art (3)
A study of the developments in art from the Paleolithic to the period of late antiquity.

302 Medieval Art (3)
A study of the developments in art from the period of late antiquity through the Gothic.

305A Advanced Crafts (3)
Prerequisite: Art 205A. Study and evaluation of craft concepts, processes, and materials as they relate to the development of aesthetic forms based on function. (9 hours laboratory)

305B Advanced Crafts: Wood (3)
Prerequisite: Art 205B. A study and evaluation of craft concepts and processes as they relate to the development of wood into utilitarian and aesthetic form. (9 hours laboratory)

306A,B Advanced Ceramics (3,3)
Prerequisite: Art 106A,B. Further experiences in the study and evaluation of forms as related to the creative use of ceramic concepts and materials including design, forming, glazing and firing. (6 hours activity)

307A,B Drawing and Painting (3,3)
Prerequisites: Art 117, 107A,B,207A,B or equivalents. The study, evaluation and creative use of the concepts and materials of drawing and painting with emphasis on individual exploration, growth, planning and craftsmanship. (9 hours laboratory)

310A,B Drawing and Painting: Techniques and Approaches for the Classroom Teacher (3,3)
Prerequisite: Art 100. The study and development of painting and drawing materials and approaches as they relate to elementary and secondary education. (6 hours activity)

311 Art and the Modern Mind (3)
The visual arts in the context of modern thought. A general approach for the non-art major. A slide lecture and discussion approach to art and the ideas and influences of McLuhan, Freud, Jung, Wittgenstein, Levi-Straus, Skinner, etc.

312 History of Architecture (3)
Architecture from antiquity to the present. Buildings will be studied in terms of their relationship to the societies which produced them, their symbolic content and their contributions to the evolution of western architectural tradition.

313A Environmental Design: Unit Concepts (3)
Prerequisites: Art 103, 104 and 213. Environmental design projects related to the study of unit concepts. (6 hours activity)

313B Environmental Design: Systems Concepts (3)
Prerequisite: Art 313A. Environmental design projects related to the study of systems concepts. (6 hours activity)

315A,B Jewelry (3,3)
Prerequisites: Art 205A and 305A. Art 305A may be taken concurrently. Design and creation of jewelry. (9 hours laboratory)

316A,B Sculpture (3,3)
Prerequisites: Art 104 and 216A. (9 hours laboratory)

317A,B Advanced Life Drawing (3,3)
Prerequisite: three units lower division life drawing. Drawing and painting from the live model. (9 hours laboratory)

323A,B Graphic Design (3,3)
Prerequisites: Art 103 and 223A. Development and projection of ideas in relation to the technical, aesthetic, and psychological aspects of advertising art. (6 hours activity)

325A,B Metalsmithing (3,3)
Prerequisites: Art 205A and 305A. Art 305A may be taken concurrently. A study and evaluation of fundamental metalsmithing concepts, processes and materials as they relate to the aesthetic development of utilitarian forms, raising, silversoldering, forging, casting, engraving, chasing and repousse. (9 hours laboratory)

326A,B Ceramic Sculpture (3,3)
Development of basic ceramic technology into individual sculptural forms and techniques. (6 hours activity)

327A,B Supergraphics (3,3)
The design and production of environmental paintings. Team and individual projects. A variety of advanced technical means are employed. Studio and lecture. A historical survey of environmental painting, concepts and techniques is included. (6 hours activity)

329A,B Art and Technology (3,3)
Creative activity in the context of modern technology. (9 hours laboratory)

330 Fibers and Fabrics, Non-woven Techniques (3)
Prerequisites: Art 103, 104 or 205A or B, or consent of instructor. Exploration of concepts of design using knotting, crochet, fabric manipulation, basketry, stitchery and applique as techniques applied to the creation of art works.

333A Environmental Design: Space and Structure (3)
Prerequisite: Art 213. Architecturally oriented projects to develop concepts of exterior-interior design and planning. (6 hours activity)

333B Environmental Design: Space and Structure (3)
Prerequisite: Art 333A. Architecturally oriented projects to develop experimental spaces and structures. (6 hours activity)

336A,B Casting Techniques and Theories of Cast Sculpture (3,3)
Prerequisite: Art 316A. Projects in various waxing, molding and metal casting techniques. Media with emphasis on aluminum and bronze and the lost wax process. (9 hours laboratory)

338A Creative Photography (3)
Prerequisite: Art 103 or its equivalent. Exploration of the photographic media as a means of personal expression. Historical attitudes and processes are discussed in relationship to new materials and contemporary aesthetic trends. Field trips required. (9 hours laboratory)

338B Creative Photography (3)
Prerequisite: Art 338A. Further exploration of the photographic medium as a means of personal expression. Historical and new processes introduced as a vehicle toward the individual student's personal goal. Field trips required. (9 hours laboratory)

341 Art of India (3)
A survey of the art and architecture of India which includes Hindu, Buddhist and Muslim influences from the pre-Indus Valley civilization to the decline of Muslim rule.

347A Printmaking—Etching (3)
Prerequisites: Art 107A,B, 247, and 117. Development of concepts and exploration of materials involved in printmaking including etching and aquatint. (9 hours laboratory)

347B Printmaking—Lithography (3)
Prerequisites: Art 107A,B, 247, and 117. Development of concepts and exploration of materials and techniques involved in lithography printing. (9 hours laboratory)

355A,B Fibers: Fabric Printing and Dyeing (3,3)
Prerequisites: Art 103, 107A or B or consent of instructor. Exploration of concepts of design as they relate to fabric surfaces with emphasis on various printing techniques and dyeing techniques applied to the creation of art works. (6 hours activity)

360 Elementary School Crafts (2)
Studio activities and techniques of crafts appropriate to the elementary school. Strongly recommended for elementary teaching credential candidates. (4 hours activity)

363A,B Illustration (3,3)
Prerequisites: Art 103, 107A,B and 117. Development and projection of ideas relative to the needs of story, book, magazine, and film illustration. (6 hours activity)

365A,B Fibers: Weaving (3,3)
Prerequisites: Art 103, 104 or 205A,B or consent of instructor. Exploration of concepts of design using various weaving techniques and learning the uses of a loom applied to the creation of art works. (6 hours activity)

380 Art and Child Development (3)
Prerequisite: Art 100 or equivalent. The study and evaluation of art concepts, materials, and processes as they relate to and promote child development. (6 hours activity)

381 Early Childhood Development in Art (3)
A variety of studio activities as they relate to early child art based on research of the behavioral sciences having relevance for the understanding of the child's artistic development. (6 hours activity)

401 Criticism of the Arts (3)
Prerequisite: senior or graduate standing in the School of the Arts or consent of instructor. Development of criteria and vocabulary for criticism of the visual and performing arts through lectures, readings, discussions, and exhibit and performance attendance. Emphasis on descriptive and evaluative skills in music, art, theatre, dance and cinema criticism.

411 Foundations of Modern Art (3)
Basic problems of painting and sculpture of the realism, impressionism, post-impressionism periods.

412 Art of the 20th Century—1900 to Present (3)
Fundamentals of modern painting, graphics and architecture.

421 Oriental Art: China (3)
A study of the historical development of the arts of China and their relation to Chinese philosophy and culture.

422 Oriental Art: Japan (3)
A study of the historical development of the arts of Japan and their relation to Japanese philosophy and culture.

423 Film Animation (3)
Prerequisites: Art 103, 104, 107A,B and 117. Aesthetic and technical considerations of animation applied in the production of film.

426A,B Glass Forming (3,3)
Prerequisites: Art 106A,B, 306A, and consent of instructor. A course in the chemistry, handling and manipulation of glass and its related tools and equipment for the ceramic artist. (6 hours activity)

431 Renaissance Art (3)
Basic problems of painting, sculpture and architecture of the Renaissance period. Lectures, discussion and field trips.

432 Baroque and Rococo Art (3)
Basic problems of painting, sculpture and architecture of the Baroque and Rococo period. Lectures, discussion and field trips.

441A,B Media Exploration for Teaching Art (3,3)
Prerequisites: Art 103, 104, 107A,B, 205A or consent of instructor. Provides a wide range of opportunities for exploring the art media used in secondary school art programs today. Deals with materials appropriate for secondary art curriculum. Offers creative investigation of two and three dimensional media in a variety of subject matter applications.

443A,B Film Making (3,3)
Development of film as a visual art form.

451 Oceanic Art (3)
An introductory survey of the styles of the aboriginal people of the following regions: Australia, Melanesia, Micronesia, Polynesia and Indonesia.

452 Art of Sub-Saharan Africa (3)
An introduction by region and tribal group to the art forms of West Coastal Africa and the Sudan, Niger River kingdoms, Yoruba kingdoms, Cameroon chieftainships, Congo tribes, Central Africa and East Coastal Africa.

453A,B Display and Exhibition Design (3,3)
A course in the appropriate and creative use of materials, processes, and design concepts as they relate to the special problems involved in the planning and preparing of displays, exhibits, bulletin boards, wall cases and art portfolios. (More than 6 hours laboratory)

461 Art of North American Indian (3)
An introduction to the art forms and style groupings of the following American Indian groups: Eskimo, Pacific Northwest, California, Eastern Woodlands, Mound Builders, Southwestern and Northern Mexico.

481 Seminar in Art History (3)
Prerequisite: consent of instructor. Opportunities for intensive study and evaluation in one area of art history and appreciation.

483 Special Studies in Design (1-3)
Prerequisite: consent of instructor. Opportunity for intensive study in the design areas listed below. Each area listed may be repeated to a maximum of 12 units, but no more than 3 units of credit may be obtained in any one area in a single semester.

483a Graphic Design (2 hours activity for each unit)
483b Environmental Design (2 hours activity for each unit)
483c Design and Composition (2 hours activity for each unit)
483d Display Design (More than 3 hours laboratory for each unit)
483f Film Making (2 hours activity for each unit)

484 Special Studies in Ceramics (1-3)
Prerequisite: a minimum of six upper division units in ceramics. Course may be repeated to a maximum of 12 units, but not more than three units of credit may be obtained in any one area in a single semester. (2 hours activity for each unit)

485 Special Studies in Crafts (1-3)
Prerequisite: a minimum of six upper division units in designated area or consent of instructor. Opportunity for intensive study in the craft areas listed below. Each area listed may be repeated to a maximum of 12 units, but no more than three units of credit may be obtained in any one area in a single semester. (2 hours activity for each unit)

485a Jewelry
485b General Crafts
485c Metalsmithing
485d Fibers—Weaving
485e Fibers—Fabric Printing and Dyeing
485f Fibers and Fabrics

486 Special Studies in Sculpture (1-3)
Prerequisites: Art 316A,B and consent of instructor. Opportunity for intensive study in the following sculptural processes. May be repeated to a maximum of 12 units but no more than three units of credit may be obtained in a single semester. (2 hours activity for each unit)

486a Modeling and Fabrication
486b Casting

487 Special Studies in Drawing and Painting and Printmaking (1-3)
Prerequisites: a minimum of six upper division units and consent of instructor. Opportunity for intensive study in the drawing and painting areas listed below. Each area listed may be

repeated to a maximum of 12 units, but no more than three units of credit may be obtained in any one area in a single semester. (3 hours laboratory for each unit)

487a Painting
487b Life Drawing
487c Drawing
487d Printmaking

488A,B Seminar in Advanced Scene Design (3,3)
(Same as Theatre 488A,B)

489 Special Studies in Creative Photography (1-3)
Prerequisite: Art 338A,B. Advanced projects in photography as a means of personal expression. May be repeated to a maximum of 12 units but no more than three units of credit may be obtained in a single semester. (2 hours activity for each unit)

498 Internship in Art (1-3)
Practical work experience in a specific art field in business or industry. Must be senior standing.

499 Independent Research (1-3)
Open to advanced students in art with consent of department chair and written consent of instructor. May be repeated for credit.

500A Graduate Seminar in Major Field (3)
Prerequisite: classified standing. Selected advanced problems and issues in art. Emphasis is on intellectual clarification and verbal articulation of individual intent as an artist. Each student will develop oral and written material in support of his master's project.

500B Graduate Seminar in Major Field (3)
Prerequisite: Art 500A. Directed research in the area of major emphasis. Each student will develop oral and written material on historical backgrounds and developments in art as they relate to his intent as an artist (stated in Art 500A) and in support of his master's project.

502 Seminar in Contemporary Art (3)
Selected advanced problems and directed research in relation to the contemporary art form.

503 Graduate Problems in Design (1-3)
Prerequisite: consent of instructor. Intensive study with emphasis on planning, development, and evaluation of individual projects in the design areas listed below. May be repeated to a maximum of 12 units in each area, but no more than three units of credit may be obtained in any one area in a single semester.

503a Graphic Design (2 hours activity for each unit)
503b Environmental Design (2 hours activity for each unit)
503c Design and Composition (2 hours activity for each unit)
503d Display Design (More than 3 hours laboratory for each unit)
503f Film Making (2 hours activity for each unit)

504 Graduate Problems in Ceramics (1-3)
Prerequisite: consent of instructor. Intensive study with emphasis on planning, development and evaluation of individual projects in ceramics. May be repeated to a maximum of 12 units but no more than three units of credit may be obtained in a single semester. (2 hours activity for each unit)

505 Graduate Problems in Crafts (1-3)
Prerequisite: consent of instructor. Intensive study with emphasis on planning, development, and evaluation of individual projects in the crafts areas listed below. May be repeated to a maximum of 12 units but no more than three units of credit may be obtained in a single semester. (2 hours activity for each unit)

505a Jewelry
505b General Crafts
505c Metalsmithing
505d Fibers—Weaving, Fibers and Fabrics
505e Fibers—Fabric Printing and Dyeing

506 Graduate Problems in Sculpture (1-3)
Prerequisite: consent of instructor. Intensive study with emphasis on planning, development, and evaluation of individual projects in sculpture. May be repeated to a maximum of 12 units but no more than three units of credit may be obtained in a single semester. (2 hours activity for each unit)

507 Graduate Problems in Drawing and Painting (1-3)
Prerequisite: 12 units of upper division drawing and painting. Intensive study with emphasis on planning, development and evaluation of individual projects in the drawing and painting areas listed below. May be repeated to a maximum of 12 units but no more than three units of credit may be obtained in a single semester. (3 hours laboratory for each unit)

507a Painting
507b Life Drawing
507c Drawing
507d Printmaking

597 Project (3-6)
Prerequisites: Art 500A,B, written consent of instructor and recommendation of the student's graduate committee. Art 500B may be taken concurrently with Art 597 on approval of instructor. Development and presentation of a creative project in the area of concentration beyond regularly offered coursework.

598 Thesis (3-6)
Prerequisites: Art 500A,B, written consent of instructor and recommendation of the student's graduate committee. Art 500B may be taken concurrently with Art 598 on approval of instructor. Development and presentation of a thesis in the area of concentration beyond regularly offered coursework. No more than three units may be taken in any one semester.

599 Independent Graduate Research (1-3)
Open to graduate students in art with consent of department chair and written consent of instructor. May be repeated for credit.

ART EDUCATION COURSES

332 Industrial Arts for Elementary Teachers (2)
Prerequisite: Educ 411 or consent of instructor. Creative selection, organization and use of materials and tools in construction activities. Includes correlation experiences with the social studies, science, and other units of work. (4 hours activity)

370A,B Art Activity (2,2)
Opportunities to observe, analyze, and evaluate child growth in and through creative art experiences. (4 hours activity)

429A,B Arts and Crafts for Teaching Exceptional Children (2,2)
Methods of using a variety of art materials and processes with emphasis on those experiences which meet the needs of retarded or handicapped children. (4 hours activity)

442 Teaching Art in the Secondary School (3)
Prerequisite: admission to teacher education. Objectives, methods, and materials including audiovisual instruction for teaching art in secondary school. Required before student teaching of students presenting majors in art for the standard teaching credential.

749 Student Teaching in Art in the Secondary School and Seminar (6)
See description and prerequisite under Division of Teacher Education.

FACULTY IN DANCE

FACULTY
Araminta Little
Faculty Chair,
Wilson Barrilleaux, M. E. Daenecke Lawlor, Sue Smyle, Miriam Tait

PART-TIME
John Dougherty, Richard Duree, Al Gilbert, Art Mikaelian, Robert Regger, Bruce Terry, Sylvia Turner

The program of studies in dance provides training in each of the related aspects of dance such as history, theory, composition and the techniques of movement leading to dance performances and productions. The curriculum is designed in accordance with the following

three objectives: (1) to prepare the student who wishes to enter dance as a profession, either in teaching, choreography or performance; (2) to provide for the general university student the opportunity for a personal involvement in dance as an art form and as a basic movement experience; and (3) to offer curricular experiences in dance for the student who is majoring in fields of study that are closely related to dance such as art, music and theatre.

Opportunities for dance performance are available through dance faculty sponsored and co-sponsored dance concerts, operas and musicals.

A major in dance is not yet offered by the Faculty in Dance; however, the Department of Theatre offers B.A. and M.A. degrees in theatre arts with areas of concentration in dance which are designed to meet the requirements of educational and professional careers in dance.

DANCE COURSES

Dance concert attendance required for all courses listed.

100 Introduction to Dance (3) (Formerly 101)
Historical and aesthetic approach to dance as an art form, to provide student with basic knowledge and aesthetic values in ballet, modern dance, educational dance, theatrical dance as well as ethnic dance. Field trips.

102A,B Movement and Rhythm (2,2) (Formerly 135A,B)
Prerequisite: Dance 102A is prerequisite for 102B. Designed to equip the student with higher kinesthetic and kinetic ability. Basic movement experience for dance, drama, art, music as well as the general student. (4 hours activity)

112 Beginning Classical Ballet (2) (Formerly 140)
A study of the fundamental structure and technique of classical ballet. (4 hours activitiy)

122 Beginning Modern Dance (1) (Formerly 140)
Development of proficiency in modern dance technique, and development of understanding and appreciation for modern dance as an art form. (2 hours activity)

126A,B Improvisation (2,2) (Formerly 125A,B)
Prerequisite: Dance 126A is prerequisite for 126B. Theory and practice of improvisation in movement. The student will be taught to overcome inhibitions, to move freely and naturally and to improvise imaginatively in movement. (1 hour lecture, 2 hours activity)

132 Beginning Jazz Dance (1) (Formerly 140)
Designed to introduce the student to the beginning technique of modern jazz dance and basic choreography. (2 hours activity)

142 Beginning Tap Dance (1) (Formerly 140)
Fundamental structure and technique of tap dance. Designed to equip students with the technique of tap and tap choreography. (2 hours activity)

152 Ballroom Dance (1) (Formerly 140)
Development of fundamental skills in ballroom dance with specific attention to basic steps and variations of dances in the major categories: fox-trot, waltz, swing, Latin-American and novelty dances. (2 hours activity)

156 Soul Dance (1) (Formerly 140)
Development of fundamental knowledges and skills in current fad and discotheque dances. (2 hours activity)

162 Beginning Folk Dance (1) (Formerly 140)
Designed to include both traditional and contemporary forms of folk dance. Dances of various countries are studied, with emphasis on the development of proficiency in folk dance skills and stylization. (2 hours activity)

206A,B Mime and Pantomime (2,2) (Formerly 245A,B)
Prerequisite: Dance 206A is prerequisite for 206B. Theory and practice of mime and pantomime for drama, dance and education (expression and gesture). Historical and contemporary knowledge and techniques with emphasis on individual development of creative skill in mime and pantomime. (4 hours activity)

212 Intermediate Classical Ballet (2) (Formerly 140)
Prerequisite: Dance 112 or consent of instructor. A study of the intermediate level technique of classical ballet (4 hours activity)

222 Intermediate Modern Dance (1) (Formerly 140)
Prerequisite: Dance 122 or consent of instructor. Development of intermediate level modern dance technique and movement vocabulary in terms of composition and communication. (2 hours activity)

223A,B Space Forming in Dance (3,3) (Formerly 227A,B)
Prerequisite: Dance 102A,B. 223A is prerequisite for 223B. Theory of space and principle of space forming to train students to understand spacial movement, so that they can master movement on stage. Stage design and the basic skills of choreography. (1 hour lecture, 4 hours activity)

226 Rhythmic Analysis (3) (Formerly 437)
Knowledge and understanding of musical form and structure; practice in musically notating dance rhythms and in percussion accompaniment for dance.

232 Intermediate Jazz Dance (1) (Formerly 140)
Prerequisite: Dance 132 or consent of instructor. The development of intermediate level skills in jazz technique and choreography. (2 hours activity)

242 Intermediate Tap Dance (1) (Formerly 140)
Prerequisite: Dance 142 or consent of instructor. Designed to equip students with intermediate skills in tap technique and tap choreography. (2 hours activity)

262 Intermediate Folk Dance (1) (Formerly 140)
Prerequisite: Dance 162 or consent of instructor. An in-depth study of both traditional and contemporary forms of folk dance. Emphasis is on stylization and performance. (2 hours activity)

271 Creative Dance for Children (3) (Formerly 210)
Prerequisite: Dance 102A,B. Designed not only for the student who is going to teach children how to create dance, but also for the student who is going to be a dance creator. Basic dance subjects in relation to the growth of children from 5 to 17 years of age. How to make a dance motif and how to compose simple dances. (2 hours lecture, 2 hours activity)

300 Dance Aesthetics (3) (Formerly 477)
Prerequisites: Dance 100 or consent of instructor. Philosophical as well as theoretical knowledge of dance as an art form. A study of the processes of dance creation, movement and image; the problems of music accompaniment in dance, and dance as an art form of metaphysical beauty.

312 Advanced Classical Ballet (2) (Formerly 140)
Prerequisite: Dance 212, audition, or consent of instructor. Advanced study in the technique, stylization and performance of classical ballet. (4 hours activity)

316A,B Character Dance for Theatre (2,2) (Formerly 331A,B)
Prerequisite: 102A,B or consent of instructor. Basic character dances such as Mazurka, Czardas, Friska, Polonaise, Fandango, Tarantella, along with the Court Dances such as Minuet and Galliard. Designed for students who aim to be professional performers or choreographers, as well as for actors and directors of theatre. (4 hours activity)

323A,B Elements and Forms of Dance Composition (3,3) (Formerly 311A,B)
Prerequisite: Dance 102A,B. 323A is prerequisite for 323B. Basic forms and elements of dance composition. Dances in which these rules must be applied will be composed by the student. (2 hours lecture, 2 hours activity)

332 Advanced Jazz Dance (2) (Formerly 140)
Prerequisite: Dance 232 or consent of instructor. The development of advanced jazz techniques through grade three of professional jazz dance. The relation of jazz to other forms of dance. History of jazz dance. Choreography of jazz dance. (4 hours activity)

336A,B Dance for Musical Theatre (2,2) (Formerly 255)
Prerequisite: Dance 102A,B or consent of instructor. 336A is prerequisite to 336B. Theories, approaches and techniques of dance utilized in the musical comedy. **A**—Emphasis on the ensemble and individual approaches to the style. **B**—Introduced is the concept of basic choreography in the style of musical comedy. (4 hours activity)

342 Advanced Tap Dance (2) (Formerly 140)
Prerequisite: Dance 242 or consent of instructor. Advanced structure and technique of tap dance. Designed for students aimed to be professional performers or choreographers on stage, film or television. (4 hours activity)

366 Afro-American Dance (2) (Formerly 355)
Study of primitive and tribal rhythm including jazz and other derivational dances of Africa. (1 hour lecture, 2 hours activity)

372 Kinesthetics (3)
Theory and application of kinesthetics as it relates to human performance capacity. Includes study of the principles of motion and human movement.

375 Dance in Cultural Perspective (3) (Formerly 476A)
History of dance from primitive times to the present. Covers development of dance in Europe, the Orient, Asia, America in its general relation to culture.

376 Philosophy and Methodology of Educational Dance (3) (Formerly 358)
Prerequisite: Dance 126 and 323A,B or consent of instructor. A short history of dance education; principles and objectives of modern educational dance and the methodology to meet these objectives; principle and structure of curriculum for educational dance. (1 hour lecture, 4 hours activity)

383A,B Dance Theatre Production (3,3) (Formerly 375A,B)
Prerequisites: Dance 102A,B and 223A,B or consent of instructor. **A** — The theory and practice of the technical aspects of dance production. **B** — Students direct the technical aspects of dance performance.

401 Criticism of the Arts (3)
Prerequisite: senior or graduate standing in the School of the Arts or consent of instructor. Development of criteria and vocabulary for criticism of the visual and performing arts through lectures, readings, discussions, and exhibit and performance attendance. Emphasis on descriptive evaluative skills in music, art, theatre, dance and cinema criticism.

422 Contemporary Dance Technique (3) (Formerly 484)
Prerequisite: Dance 102A,B or consent of instructor. Study of theories, approaches, and techniques of contemporary dancers. Emphasis is on development of individual technique in dance. (6 hours activity)

423 Choreography (3) (Formerly 486)
Prerequisite: Dance 102A,B or equivalent. Theoretical and creative aspects of choreography. Application and analysis of elements of choreographic form. Composition of solo and group dances. (2 hours lecture, 2 hours activity)

426 Experimental Dance Theatre (3)
Prerequisite: Dance 222 or consent of instructor. Environmental and sensorial experiences in dance. Includes studies in creativity, sensitivity, and perception. Experiments in composition using improvisation, happenings, geographic design, and special effects. Field trips. Final production. (2 hours lecture, 2 hours activity)

462 Ethnic Dance (3) (Formerly 482)
Prerequisite: advanced preparation and/or experience in dance or consent of instructor. Theoretical and practical study of folk, square and social forms of dance in terms of cultural and environmental influences (includes geography, music, costumes, customs) (2 hours lecture, 2 hours activity)

471 Creative Dance for Teachers (3) (Formerly 450)
Prerequisites: Dance 102A,B and 376 or consent of instructor. Study and analysis of creative dance and its relation to dance education in elementary and secondary schools. Recommended for students of dance, theatre, music and art as well as practicing teachers. (2 hours lecture, 2 hours activity)

475 Forces and Figures in 20th Century Dance (3) (Formerly 476B)
Intensive study of contemporary dance and trends influencing its development.

483 Dance Repertory (1-3) (Formerly 470)
The production and performance of major dance repertory. A minimum of one unit per semester, excepting the freshman year, required for all dance emphasis theatre majors.

496 Special Studies in Dance (1-3) (Formerly 474)
Opportunity for intensive study in theory and practice in dance theatre and production. May be repeated to a maximum of eight units but no more than three units of credit may be obtained in a single semester. (More than 3 hours production per unit)

499 Independent Study (1-3)
Directed reading, reports, creation and performance according to predetermined arrangements with instructor and faculty chair.

DEPARTMENT OF MUSIC

FACULTY
Leo Kreter
Department Chair
Roger Ardrey, David Berfield, Carole Chadwick, Andrew Charlton, John Cooksey, M'lou

Dietzer, John Farrer, Rita Fuszek, Kenneth Goldsmith, J. Justin Gray, Su Harmon, Burton Karson, Terry King, Joseph Landon, John Lueck, Gary Maas, Donal Michalsky, Benton Minor, Williams Nicholls, Jane Paul, Lloyd Rodgers, Patricia Roycroft, Robert Stewart, Howard Swan, David Thorsen, Rodger Vaughan.

PART-TIME

Donald Ambroson (viola), Kalman Bloch (clarinet), Kay Brightman (bassoon), William Cole (brass methods), Allen Davis (jazz ensemble), Bonnie Farrer (piano), Jay Grauer (double bass), Gary Gray (clarinet), David Grimes (guitar), Ann Hand (music education), John Jensen (music literature), Michael Kurkjian (voice), Jenifer McKenzie (flute), Karen McKinney (organ), Todd Miller (French horn and percussion), Michael Mitacek (theory), Donald Muggeridge (oboe), Harvey Pittel (saxophone), JoAnne Ritacca (accompanying), Leona Roberts (voice), Clarence Sawhill (conducting, band), Gary Scudder (saxophone ensemble), James Stamp (trumpet), Thomas Steele (guitar), Susan Stockhammer (flute), Susan Talevich (class piano), Leigh Unger (piano), Earle Voorhies (piano), Scott Zeidel (guitar)

The Department of Music offers courses for both majors and non-majors. The fundamental purpose of the music curriculum is threefold: (1) to promote excellence in all aspects of music and academic coursework; (2) to provide basic preparation for careers in music; and (3) to promote interest in all musical and artistic endeavors in the university and the surrounding community.

REQUIREMENTS OF THE DEPARTMENT OF MUSIC

1. All entering music majors must register for the Bachelor of Arts degree program for the first semester of residence. Students may change their degree objective to the Bachelor of Music program upon completion of at least one semester of coursework at the university, successful completion of an examination in applied music and recommendation of the coordinator in the appropriate area of concentration.
2. A placement audition in the principal performance area (student's voice or instrument), and proficiency examinations in theory and basic piano will be given to all music majors at the time of entrance to the university. Each student must pass the proficiency examinations in theory and basic piano before being approved for graduation. The basic piano requirement may also be satisfied by successful completion of Mu 282B. Students deficient in any of the above areas will be advised to take additional coursework.
3. Each music major must declare a single principal performance area with the approval of a faculty adviser who will be assigned upon completion of the placement audition at the time of entrance. Before being approved for graduation, each student must achieve at least the 300 level of performance proficiency in his area of principal performance.
4. Each music major is required to present a senior recital appropriate to his degree program before being approved for graduation. In the music history and theory, conducting, composition, accompanying and musical theatre programs, this requirement may be met by some means other than a conventional recital. Consult the appropriate coordinator for more specific information.
5. All undergraduate music majors are required to participate in a major performance ensemble (band, orchestra, opera or chorus) every semester. Students who declare wind or percussion as their principal performance area must register for band (or orchestra, if designated by the instrumental coordinator); string majors must register for orchestra; and voice majors must register for chorus (or opera, if designated by the choral-vocal coordinator). A music major whose principal performance area is piano, organ or guitar shall be assigned to an appropriate performance group by his faculty adviser. Exceptions to this requirement must be directed by petition to the department chair (see also 6d below).
6. The principal performance area for the major in music requires work in applied music, as follows:

    a. All music majors must complete a minimum of six semesters (eight semesters for the Bachelor of Music) of applied music in the principal performance area.

    b. A student pursuing the Bachelor of Music (Composition) or the Bachelor of Arts (Music History and Theory) may reach the 300 level in applied music before using all of the units designated in his degree requirements for that purpose. If the 300 level is reached before the required units in applied music (principal perfor-

mance area) are expended, the remainder of these units may be used as music major electives. A music history and theory major may elect additional units in applied music only upon the recommendation of his adviser and the coordinator in his area of performance, and with the approval of the coordinator of applied music. The composition major must also complete six units of composition beyond Mu 422A culminating in the successful presentation of a senior recital of his own compositions.

c. A student pursuing the Bachelor of Music (instrumental, keyboard, voice or accompanying specializations) must achieve the 300 level of performance proficiency before giving the junior recital, and must achieve the 400 level before giving the senior recital, and may not receive double lessons (two units) for more than three semesters at any given jury level. Specific information about jury level criteria is available in the Music Department Office.

d. In order to receive state-funded lessons in applied music, an undergraduate student must be enrolled for a minimum of six units, two of which must be in an academic area of music (any courses other than performing ensembles and applied music), and must be making satisfactory progress toward a degree. If courses are dropped during the semester reducing his enrollment below the six-unit minimum, state-funded lessons will be withheld in a subsequent semester of enrollment. In order to receive state-funded lessons, the student also must be enrolled in an approved major performance ensemble or be excused from that requirement by means of a petition signed by the department chair.

7. Senior transfer students entering Cal State Fullerton with a major in music, or graduate students in music entering to complete credential requirements are expected to complete a minimum of one semester of successful upper division work in music before they may be approved for admittance to teacher education. Required courses and competencies must be satisfied before endorsement by the faculty committee for acceptance in the credential program.
8. All credential candidates are required to pass functional examinations in piano and voice (in addition to the piano proficiency described in 2 above) before being approved for admittance to teacher education. This requirement may also be satisfied by successful completion of Mu 282B and 283.
9. A music major must maintain a 2.5 grade-point average in major field coursework at this institution in order to be approved for graduation.
10. All exceptions to departmental or curricular requirements should be directed by petition to the department chair.

MUSIC DEGREE PROGRAMS

The Department of Music offers a variety of courses and programs leading to baccalaureate and graduate degrees in teaching and the professions. The baccalaureate degree may be earned in either of two degree programs (Bachelor of Arts and Bachelor of Music). Within these patterns, a student will normally pursue an emphasis in music history and theory, music education, performance, composition, accompanying, or musical theatre.
musical theatre.

BACHELOR OF ARTS IN MUSIC

The Bachelor of Arts in Music shall consist of no fewer than 50 units, of which at least 29 shall be in the upper division. All Bachelor of Arts students must complete the basic requirements in lower and upper division and in addition select and complete the requirements listed in one of two options: Music History-Theory Option or Music Education Option.

Basic Requirements for the Bachelor of Arts in Music

Lower Division	*Units*
Music theory (Mu 111A,B, 211)	9
Music literature (Mu 251)	3
Applied techniques (Ensemble 4, Principal Performance Area 4)	8
	20
Upper Division	
Music theory (Mu 320A, 321A)*	5
Music history (Mu 351A)	3
	8

* In the Music, History and Theory Option, Mu 320B or 321C may be substituted for Mu 320A.

Music History and Theory Option

This is designed as a balanced program in music history and theory and provides suitable preparation for advanced degrees in theory, literature or musicology and basic preparation for advanced study in other fields, such as musical acoustics, music therapy, ethnomusicology, library science in music, and music in industry and recreation.

	Units
Basic requirements for the Bachelor of Arts	28
Music theory (Mu 316, 321B)	4
Music history and literature (Mu 352A,B, 498, 499)	8
Conducting and composition (Mu 391A or 392A or 422A)	2
Ensemble (Mu 361)	2
Electives in music (conducting, history or theory)	6
	50

Allied requirements for Music History and Theory Option

1. An academic minor (20 units) with written approval of the history or theory coordinator.
2. Foreign language, preferably German, to be satisfied by one of the following:
   a. Four years study of foreign language at the secondary school level.
   b. Pass examination given by the Department of Foreign Languages and Literatures, or
   c. Completion of the second semester of the beginning university course in foreign language.

Music Education Option

This is designed to provide in-depth preparation for teaching in the California public schools under the provisions of the Teacher Preparation and Licensing Law of 1970 (Ryan Act).

Instrumental Emphasis:	*Units*
Basic requirements for the Bachelor of Arts	28
Music history (Mu 351B)	3
Orchestral instruments (Mu 281)	6
Music theory (Mu 323A and 320B or 323B)	4
Conducting (Mu 391A, 392A,B, 362F)	6
Ensemble (Mu 361)	3
	50

Vocal-Choral Emphasis:	
Basic requirements for the Bachelor of Arts	28
Music history (Mu 351B)	3
Diction for singers (Mu 390)	1
Orchestral instruments (Mu 281a,c,e,g)	4
Conducting (Mu 391A,B, 392A, 362F)	6
Literature and interpretation (Mu 453, 457)	4
Opera theatre (Mu 361d)	1
Ensemble (Mu 361)	3
	50

General Music Emphasis:	
Basic requirements for Bachelor of Arts	28
Music and child development (Mu 333)	3
Conducting (Mu 391A,B)	4
Orchestral instruments (Mu 281A,C,E,G)	4
Recreational instruments (Mu 381B)	1
Music in the classroom (Mu 435)	3
Music history (Mu 351B)	3
Ensemble (Mu 361)	3
Electives in music	1
	50

TEACHING CREDENTIAL PREPARATION

Students desiring a California teaching credential in music must complete the following courses prior to enrolling in the professional education program as required by the School of Education.

	Units
Instrumental emphasis: Mu 342B, 353, 399	5
Choral-vocal emphasis: Mu 342A, 354, 399	5
General music emphasis: Mu 342A, Mu Ed 441, 399	5

Students who wish to earn a teaching credential in addition to a Bachelor of Arts with a music education option must complete the following:

	Units
MuEd 442 (3) — professional education courses	9-12
Student teaching, full-time	12
	21-24

The following competency examinations must be passed prior to admission to teacher education:

Theory
Keyboard functional
Voice functional

Multiple Subject Instruction—Ryan Act

The following three courses are recommended for all students intending to teach in the elementary schools in multiple subject classrooms:

	Units
Art 380	3
Mu 333	3
Theatre 402	3
	9

The following additional list of courses would be strongly recommended for any student who wishes to expand his knowledge in the arts:

Art 100, 101, 103, 104, 107A, 201A,B, 310A,B, 320, 330, 340, and 380
Dance 100, 112, 122, 125A,B, 132, 142, 152, 162, 206A,B, 311A,B, 331A,B, 484
Mu 100, 101, 111A,B, 184A,B, 251, 281A,C,E,G, 283A, 381B, MuEd 435
Theatre 100A,B, 211, 263A, 276A, 277, 370A,B, 402, 403, 411C

BACHELOR OF MUSIC

This degree program is designed to provide training for the highly gifted students who show promise and capability of becoming professional performers and composers.

This degree shall consist of no fewer than 70 semester units, of which at least 32 shall be in the upper division.

Basic Requirements for the Bachelor of Music	*Units*
Music theory (Mu 111A,B, 211)	9
Music history and literature (Mu 251, 351A)	6
Principal performance area (Mu 171)	2
Major performance ensemble	4
Senior recital (Mu 498)	1
	22

Composition Specialization	
Basic requirements for the Bachelor of Music	22
Music theory (Mu 316, 318, 320A,B, 321A and 321B or C, 323A, 422A)	17
Music history and literature (Mu 352A,B)	6
*Principal performance area	4
Applied composition	5
Major performance ensemble	4
Electives in music	12
	70

Instrumental Specialization	
Basic requirements for the Bachelor of Music	22
Music theory (Mu 316, 320A or B, 321A, 323A, 422A)	11
Music history and literature (351B or 352A,B)	3-6
Principal performance area	11
Major performance ensemble	4
Conducting (392A,B, 362F)	4
Chamber music	6
Electives in music	6-9
	70

*See 6b under Requirements of the Department of Music.

Keyboard Specialization

	Units
Basic requirements for the Bachelor of Music	22
Music theory (Mu 316, 320A or B, 321A, 422A)	9
Music history and literature (Mu 351B or 352A,B, 454A,B)	7-10
Principal performance area	11
Chamber music	3
Accompanying	1
Pedagogy (Mu 372 or 373, 467A,B)	5
Electives in music	9-12
	70

Voice Specialization

Basic requirements for the Bachelor of Music	22
Music theory (Mu 316, 320A or B, 321A, 422A)	9
Music history and literature (Mu 351B or 352A,B, 456, 457A,B)	10-13
Principal performance area	11
Major performance ensemble (2 units minimum in Mu 361d)	4
Diction (Mu 390A,B,C)	3
Conducting	2
Pedagogy	2
Electives in music	4-7
	70

Allied requirement for voice specialization:

Two foreign languages, each to be satisfied by one of the following:

a. Four years study of foreign language at the secondary school level, or
b. A pass examination given by the Department of Foreign Languages and Literatures, or
c. Completion of the second semester of the beginning university course in foreign language.

Accompanying Specialization

Basic requirements for the Bachelor of Music	22
Music theory (Mu 316, 318, 320A or B, 321A, 422A)	11
Music history and literature (Mu 351B or 352A,B, 455, 457A)	8-11
Principal performance area	9
Sight reading (Mu 385)	2
Accompanying (Mu 386)	2
Chamber music (Mu 363)	2
Harpsichord class (Mu 372)	1
Conducting (Mu 391A)	2
Diction (Mu 390A,B,C,D)	4
Organ class (Mu 373)	1
Electives in music	3-6
	70

Musical Theatre Specialization

*Basic requirements for the Bachelor of Music	22
Music theory (Mu 321A or 323A)	2-3
Music history and literature (Mu 351B, 456)	6
Principal performance area	5-6
Major performance ensemble/workshop	4
Diction (Mu 390D)	1
Conducting (Mu 391A or 392A)	2
Music/Theatre workshop (465A, 465C)	6
Music/Theatre history (473)	3
Theatre (Theatre 263A, 263B, 342A, 342B)	14
Dance (Dance 102A,B or 206A,B)	4
	70

*Student may receive 498 credit for a leading role in a major production upon approval of instructor and area coordinator.

Minor in Music
The minor in music may be used as an appropriate area of study by persons whose majors are in other fields, or may be used to satisfy minor field requirements for elementary or secondary teaching credentials. A maximum of 12 units from the lower division may be included in work counted toward the music minor. The music minor requires a minimum preparation of 20 units.

Composite of Lower Division and Upper Division	*Units*
Theory of music (selected from Mu 101, 111A,B, 211 or any 300- or 400-level theory classes for which student is qualified)	6
Music history and literature (Mu 100, 251, 350 or courses at the 400- or 500-level for which student is qualified)	5-6
Applied techniques (selected from Mu 183, 184A,B, 281a-g, 283 or any course in ensemble, conducting, piano, voice and orchestral instruments at the 300 or 400 level for which student is qualified	8-9
	20

Note: Students expecting to use the minor for teaching must complete four units of Mu 281a-g and/or Mu 381A,B Orchestral Instruments, and a minimum of two units in an ensemble appropriate to their area of specialization.

MASTER OF ARTS IN MUSIC
The program of studies leading to the Master of Arts in Music provides advanced studies in breadth as well as in an area of graduate specialization. The program is further intended to provide advanced coursework with a suitable balance in such music studies as theory, composition, history, literature, advanced applied techniques and music education. There are suitable graduate specializations in the areas of history and literature and performance.

The Master of Arts in Music is designed for teachers and supervisors of music; persons intending to specialize in applied fields in the pursuit of occupational goals; individuals preparing for college teaching; and persons intending to pursue advanced degrees beyond the master's level.

PREREQUISITES

An applicant must meet the university and school requirements for admission in classified graduate standing with the declared objective of this degree. These include: (a) possession of an acceptable baccalaureate degree from an accredited institution; (b) a major in music (or the equivalent of a major; i.e., 29 upper division units in music), with a minimum grade-point average of 3.0 in the major and 2.75 overall; (c) completion of a satisfactory audition or conference and a written essay in his area of specialization; and (d) the completion of Music 500 (Introduction to Graduate Studies in Music, 2 units). One objective of Music 500 is the selection of a Departmental Advisory Committee which aids the student in the preparation of a study plan listing all courses required for completion of the degree. This study plan must receive the approval of the Departmental Advisory Committee and the dean of graduate studies. Opportunity is given the student to remove deficiencies by taking certain prescribed courses, but such courses cannot be applied to the master's degree program.

For admission in conditionally classified graduate standing with the declared objective of this degree, an applicant must meet the university and school requirements: possession of an acceptable baccalaureate degree from an accredited institution and attainment of a grade-point average of at least 2.5 in the last 60 semester units attempted. In addition, each applicant will be required to audition in his area of specialization and to submit a written essay.

Study Plan
The degree program requires 30 units of graduate study, no more than nine of which shall be outside the field of music, and at least 15 of which must be in 500-level courses in music. The student must include Mu 500, Introduction to Graduate Studies in Music, within the first nine units taken as a graduate student. The degree program offers two options: Option I in

History and Literature, or Option II in Performance. A thesis is required in Option I; a thesis or project in Option II. In addition, in Option I the program will include at least six units of study outside the field of music, but supportive to the program.

A written comprehensive examination will be required of all students prior to advancement to candidacy. In addition, for Option I only, the student must demonstrate reading ability in at least one foreign language, preferably German or French, prior to advancement to candidacy.

For further information, consult the Department of Music.

See also "The Program of Master's Degree" in this catalog and the *Graduate Bulletin*.

MUSIC COURSES

100 Introduction to Music (3)
A basic approach to musical enjoyment and understanding through a general survey of musical literature representative of various styles and performance media. Music will be related to other arts through lectures, recordings and concerts. Closed to music majors.

101 Music Theory for Non-Music Majors (3)
Basic theory and practical applications to further understanding of basic music principles and to improve music performance and listening skills. Includes sightsinging and relationship to keyboard and simple melodic instruments. Closed to music majors.

102 History of Jazz (3)
Historical study of jazz music in America, with emphasis on chronological development and stylistic evolution with consideration of peripheral trends. Emphasis on listening. Designed for the non-music major.

111A,B Diatonic Harmony (3,3)
A year course covering diatonic harmony and musicianship. Includes scales and intervals, triads and their inversions, harmonizations, nonharmonic tones, modulation and dominant seventh chords. Practical applications, to include sightsinging, dictation and keyboard harmonizations. (2 hours lecture, 2 hours activity)

171, 271, 371, 471 Individual Instruction (1-2)
Prerequisite: jury recommendation. Individual study with approved instructor with emphasis on technique and repertoire. Music majors must register for a minimum of one unit per semester. Performance majors approved by jury recommendation should register for two units per semester. Jury examination required. May be repeated for credit.

172 Piano Class for Piano Majors (1)
Prerequisite: placement by coordinator. Group instruction in basic pianistic technique and repertoire. May be repeated for credit. (2 hours activity)

173 Voice Class for Voice Majors (1)
Prerequisite: placement by coordinator. Group instruction in basic vocal technique and repertoire. May be repeated for credit. (2 hours activity)

182A,B Piano Class for Music Majors (1,1)
Fundamentals of keyboard technique for students whose major performance instrument is not piano. (2 hours activity)

183 Voice Class for Non-majors (1)
Beginning and elementary techniques in singing for the non-music major. May be repeated for credit. (2 hours activity)

184A,B Piano Class for Non-Majors (1,1)
Prerequisite: Mu 101. Beginning and elementary instruction in basic piano techniques for the non-music major. (2 hours activity)

211 Chromatic Harmony (3)
Prerequisite: Mu 111B. Continuation of Mu 111A,B with emphasis on the chromatic practice of the 19th century. Includes secondary dominants; ninth, eleventh and thirteenth chords; sequence, and chromatically altered chords. Practical applications to include sightsinging, melodic and harmonic dictation, and keyboard practice. Required of all music majors. (2 hours lecture, 2 hours activity)

251 Survey of Musical Literature (3)
An introductory course required of majors in the study of the literature of music in Western civilization. Open to minors and qualified students by consent of instructor. Students should be able to read music as a part of the analysis of form, design and style. (3 hours lecture)

267 Observation in Applied Music (1)
Prerequisites: piano major, sophomore standing. Observation of specialists in private music teaching, teaching techniques, materials, development of student and preparation for beginners, adult beginners, intermediate and early advanced students under the specialist in these areas. Requires written reports of activity in these areas.

281a-g Orchestral Instruments (1)
Mu 281a,c,e, and g are required of all music credential candidates. Instrumental music candidates are required to take two additional units selected from Mu 281b, d, or f. (2 hours activity)

281a String Instruments (1)
Specialization on violin and viola. Violin and viola majors substitute Mu 281b for this course.

281b String Instruments (1)
Specialization on cello and string bass. Cello and bass majors are exempt.

281c Brass Instruments (1)
Specialization on trumpet and French horn. Trumpet and French horn majors substitute 281d for this course.

281d Brass Instruments (1)
Specialization on trombone, baritone and tuba. Trombone and tuba majors are exempt.

281e Woodwind Instruments (1)
Specialization on clarinet and flute. Secondary emphasis on saxophone. Clarinet and flute majors substitute 281f for this course.

281f Woodwind Instruments (1)
Specialization on oboe and bassoon. Oboe and bassoon majors are exempt.

281g Percussion Instruments (1)
Specialization on the snare drum and mallet-played instruments with related work on other standard percussion instruments. Special consideration given to typical problems encountered with percussion in the public schools. Percussion majors are exempt.

282A,B Piano Class for Music Majors (1,1)
Prerequisite: Mu 182B or placement by instructor. Designed to meet music major minimum piano proficiency requirements for degree. Fundamentals of keyboard technique for students whose major performance field is not piano. Not required for keyboard majors. (2 hours activity)

283 Voice Class (1)
Prerequisite: placement by coordinator. Recommended for credential candidates. Not required for voice majors. (2 hours activity)

299 Clinical Practice in Instrumental and Vocal Techniques (1)
Clinical practice and field applications of instrumental and vocal techniques classes, as in public and private schools. Co-enrollment in Mu 271 or Mu 281 recommended. (2 hours activity)

300 Music of Today (3)
Prerequisite: Mu 100 or 101, or consent of instructor. Concentration on the musical trends of the last two decades. The emphasis will be on western art music, but recent developments in jazz, rock and folk idioms will also be discussed.

316 16th-Century Counterpoint (2)
Prerequisite: Mu 211 or consent of instructor. Sixteenth-century counterpoint in two, three and four parts, covering motet, canon, double counterpoint.

318 18th-Century Counterpoint (2)
Prerequisite: Mu 316 or consent of instructor. Eighteenth-century counterpoint in two, three and four parts, covering invention, canon, double and triple counterpoint and fugue.

320A,B 20th-Century Techniques (2,2)
Prerequisite: Mu 211. A survey of the compositional practices of the 20th century with emphasis on written examples in the various styles. Practical applications to include

sightsinging, keyboard practice and dictation. **A**—Compositional techniques from 1890 to 1945. Required of all music majors. **B**—Compositional techniques since 1945, to include limited experience with the synthesis of sound. (1 hour lecture, 2 hours activity)

321A,B,C Form and Analysis (3,2,2)

Prerequisite: Mu 211 or consent of instructor. **A**—Analysis of structural elements of music such as motive, phrase and period; binary, tenary, rondo, sonato allegro and larger musical forms in representative musical works. Required of all music majors. **B**—Continuation of A, with emphasis on larger musical works. **C**—Continuation of A and B with emphasis on literature of the 20th century.

323A,B Orchestration (2,2)

Prerequisite: Mu 320, 321A or consent of instructor. Writing and analysis of orchestral music.

333 Music and Child Development (3)

Prerequisite: Mu 101 or equivalent or successful completion of proficiency test. Study of the relationship of music to child growth and development, with emphasis on the child from 5 to 12.

341 Survey of the Symphony (3)

Prerequisite: Mu 100 or consent of instructor. A study of the history and literature of symphonic music from the 18th through the 20th centuries, with special emphasis on the relationships between musical composition and the general artistic temper of historical periods. For non-music majors only.

350 Music in Our Society (3)

Prerequisite: Mu 100 or consent of instructor. Designed to increase interest and an understanding of music in its relation to our general culture. A sociological approach which includes musical criticism and journalism, concert life, audience psychology and the political/religious/business aspects of the American musical scene.

351A,B History and Literature of Music (3,3)

Prerequisite: Mu 211 and 251 or consent of instructor. **A**—A study of the history and literature of music from early Greek beginnings through the Renaissance. **B**—A study of the history and literature of music covering the baroque, classic, romantic period and the 20th century. Required of all music majors.

352A,B History and Literature of Music from 1600 to the Present (3,3)

Prerequisite: Mu 211 and 251, or consent of instructor. **A**—Historical and stylistic study in the baroque and classic periods. **B**—Historical and stylistic study in the romantic period and 20th century. May be used to replace 351B. If used to fulfill music history requirements, both A and B sections of Mu 352 must be completed. This course is recommended to all music majors who intend to continue music study at the graduate level.

353 Survey of Instrumental Music Materials (2)

Prerequisite: Mu 392A. Through examination and analysis of multiple examples of the repertory, this course is designed to develop skills in the practical use of instrumental literature for performance in secondary schools and community colleges.

354 Survey of Public School Choral Music Materials (2)

Prerequisite: Mu 391A. Thorough examination and analysis of multiple examples of choral repertoire suitable for junior and senior high choruses.

361a-g Major Performance Ensemble (1)

The study and performance of standard and contemporary music literature. Public concerts on campus and in the community are included in the scheduled activities each semester and participation is required. A concert tour may be included by some groups. (More than 3 hours major production.) May be repeated for credit.

361a Symphony Orchestra (1)

Open to all university students and qualified adults in the community by audition or consent of instructor.

361b University Choir (1)

Open to all university students with consent of instructor.

361c University Concert Band (1)

Open to all university students with consent of instructor.

361d Opera Theatre (1)

Study of roles and representative excerpts from standard and contemporary operas and the basic musical, dramatic and language techniques of the musical theatre. Performance of operatic excerpts and complete operas.

361e University Singers (1)
Membership restricted to advanced voice students or those accepted by audition.

361f University Wind Ensemble (1)
Membership restricted to advanced wind and percussion students or those accepted by audition.

361g University Chorale (1)
Open to upper division and graduate students with consent of instructor. Audition necessary.

361h Symphonic Band (1)
Open to all university students by audition or consent of instructor.

362A Wind Ensemble—Jazz Ensemble (1)
Open to qualified students by audition or consent of instructor. Public performances on campus and in the community are scheduled each semester.

362B Wind Ensemble—Varsity Band (1)
Open to all university students with consent of instructor. Varsity Band provides music for Titan football and basketball home games. Concurrent enrollment in Mu 361c is recommended.

362C Vocal Ensemble (1)
Study and performance of choral literature of the Renaissance and baroque periods. Open only to students by audition. Public performance required. (2 hours activity)

362D Percussion Ensemble (1)
Study and performance of music written for the Percussion Ensemble. Open to any qualified student with consent of instructor. (2 hours activity)

362E Brass Ensemble (1)
The study and performance of music written for large brass choir/ensemble. Open to any qualified student with consent of instructor. May be repeated for credit. (2 hours activity)

362F Conducting Laboratory Ensemble—Instrumental (1)
A non-performing ensemble composed of orchestral instruments (strings, woodwinds, brass and percussion) which functions as a laboratory ensemble for instrumental conducting students. Literature covered is of limited difficulty. Required of students enrolled in Mu 392A; open to all students. (2 hours activity)

362G String Ensemble (1)
Study and performance of string orchestra literature covering all periods of musical style. Open to students by audition or consent of instructor.

362H Chamber Orchestra (1)
Prerequisite: consent of instructor. Study and performance of representative chamber orchestra literature. Open to university students and qualified adults in the community.

362K Keyboard Workshop (1)
Weekly workshop performances by students, faculty and guests. Open to all students.

362V Vocal Workshop (1)
Application of vocal technique to performance practices through lecture—demonstrations, master classes and ancillary recitals.

363 Chamber Music Ensembles (1)
Open to all qualified wind, string or keyboard students. Various ensembles will be formed to study, read and perform representative chamber literature of all periods. (2 hours activity)

367 Pedagogy Internship (1)
Prerequisites: Mu 267 and 467A. Supervised internship in private piano teaching.

372 Harpsichord Class for Music Majors (1)
Prerequisite: 300-jury level in piano or organ or consent of instructor. The study of the harpsichord as an instrument, the application of baroque stylistic characteristics, and training in the rudiments as an instrument, the application of baroque stylistic characteristics, and training in the rudiments of continuo playing in ensemble with voices and instruments. (2 hours activity)

373 Organ Class for Music Majors (1)
Prerequisite: 300-jury level in piano. The study of the organ as an instrument, the playing techniques, and repertoire. Instruction will include the differences between piano and organ techniques. (2 hours activity)

374 Keyboard Improvisation (2)
Prerequisite: 200 level in keyboard applied music or consent of instructor. Emphasis on development of ability to modulate, transpose, read scores, and improvise at a moderately advanced level.

381B Survey of Recreational Instruments (1)
A general survey of recreational instrument practices for credential candidates. (2 hours activity)

385 Keyboard Sight-reading (2)
Prerequisite: 200-jury level in piano or organ or consent of instructor. Analysis of sight-reading skills and procedures. Emphasis on development of ability to read solo, ensemble and scores without hesitation at first sight. (4 hours activity)

386 Piano Accompanying (1)
Prerequisite: by audition only. The study and performance of piano accompaniments for instrumentalists, vocalists and ensembles. Participation in rehearsals, recitals and concerts required. (2 hours activity)

390A,B,C,D Diction for Singers (1,1,1,1)
Prerequisite: sophomore standing or consent of instructor. Study of proper singing diction; may not be considered a substitute for formal language study. Examples from standard vocal literature explained through the use of the International Phonetic Alphabet. **A**—Italian. **B**—German. **C**—French. **D**—English.

391A,B Choral Conducting (2,2)
Prerequisite: one semester of voice class or consent of instructor. **A**—Principles, techniques and methods of conducting choral groups. Required of all music education majors. (4 hours activity) **B**—Continuation of 391A including laboratory work with class and vocal ensembles, using standard choral repertoire. (4 hours activity)

392A,B Instrumental Conducting (1,2)
Prerequisite: two courses from 281a-g or consent of instructor. **A**—Principles, techniques and methods of conducting orchestral and band groups. Required of all music education majors. (2 hours activity) **B**—Continuation of 392A, including laboratory experience in conducting instrumental groups, using standard instrumental literature. (4 hours activity)

396 Internship: Professional Experience (1-3)
Fieldwork experience in music under supervision of resident faculty and professionals in the field. Requires minimum six hours fieldwork for each unit credit. May be repeated for credit to a maximum of six units. Open to all music students by consent of instructor.

397 Proseminar in Music (3)
Prerequisites: Mu 211 and 351A or 352A or B, or consent of instructor. Study of the aesthetic and intellectual nature of music and its relationship to other arts and society through both structured and independent investigations, leading to the selection of an area of special interest for further investigation in the senior project.

399 Clinical Practice in Conducting (1)
Clinical practice and field applications of concepts, materials and procedures as applied to field situations, as in public and private schools. Co-enrollment in Mu 391A or 392A recommended.

400 Concert Music (1)
Weekly performances by university students, faculty and performing organizations, with lectures and discussions relative to the performing arts. Attendance required at additional concerts during the semester. Open to all students. May be repeated for credit.

401 Criticism of the Arts (3)
Prerequisite: senior or graduate standing in the School of the Arts or consent of instructor. Development of criteria and vocabulary for criticism of the visual and performing arts through lectures, readings, discussions, and exhibit and performance attendance. Emphasis on descriptive and evaluative skills in music, art, theatre, dance and cinema criticism.

422A,B Composition (2,2)
Prerequisites: Mu 316, 320 and 321A or consent of instructor. **A**—Ear-training analysis of smaller forms, simple composition of two- and three-part song form styles. **B**—Analysis and writing of more complex musical forms.

453A,B Choral Literature and Interpretation (2,2)
Prerequisites: Mu 391A or equivalent and 351A,B. **A**—The study of choral literature from the

medieval, renaissance and baroque eras analyzed in historical perspective. Appropriate performance practices will be examined. **B**—Continuation of A with representative examples from the classic, romantic and contemporary eras.

454A,B Piano Literature and Interpretation (2,2)
Prerequisite: 351A,B and junior level piano standing or consent of instructor. Study and performance of representative styles and schools of piano literature, with particular reference to solo and ensemble repertoire. **A**—Concentration on contrapuntal forms, sonatas and variations. **B**—Concentration on concerti, character pieces, fantasies, suites and etudes.

455 Instrumental Chamber Literature and Interpretation (3)
Open to all music majors, or to non-majors by consent of instructor. Members of the class will be grouped into ensembles for demonstration purposes. Emphasis on the stylistic differences required in performing works of all periods.

456 Opera Literature and Interpretation (3)
Prerequisite: Mu 351A,B or consent of instructor. Study of all periods and nationalities, including stylistic and historical connotations.

457A Song Literature and Interpretation (2)
Prerequisite: Mu 390B or consent of instructor. Study and performance of German lieder with representative examples of periods and styles.

457B Song Literature and Interpretation (2)
Prerequisite: Mu 390A or consent of instructor. Study and performance of Italian, French, Russian, English and American art songs, with representative examples of periods and styles.

458 Collegium Musicum Practicum (2)
Prerequisite: Mu 351A,B or consent of instructor. The study and performance of rare and old music, both instrumental and vocal. Techniques of musical research will be applied. Students should be competent performers.

459 Guitar Literature, Interpretation and Pedagogy (3)
Prerequisite: 300-jury level in guitar or consent of instructor. A survey of the literature available to guitarists. Includes works for lute, vihuela and baroque guitar as well as the compositions and transcriptions for the modern guitar. An introduction to materials and methods essential for the guitar instructor.

460 Interpretation of Early Music (3)
Prerequisite: 300-jury level in principal performance area. A survey of the various stylistic interpretations of vocal and instrumental literature from the 16th, 17th and 18th centuries. Designed for the senior or graduate student majoring in performance. (2 hours lecture, 2 hours activity)

467A,B,C Piano Pedagogy (2,2,1)
Prerequisite: junior piano standing or consent of instructor. Fundamentals of piano pedagogy, with reference to individual and group instruction. **A**—Survey of materials and methods for beginning and elementary students. Supervised teaching. **B**—Survey of materials and methods for intermediate and early advanced students. Physiology and psychology for studio teachers. Supervised teaching. **C**—Prerequisite: 467A or consent of instructor. Observation and practice teaching while learning organizational procedures, teaching techniques and course literature for class piano.

468A,B Vocal Pedagogy (2,2)
Prerequisite: senior standing or consent of instructor. **A**—Fundamentals of vocal pedagogy with reference to studio and public school teaching, with consideration of physiology and acoustics as they apply to singing. **B**—Practical application of the fundamentals discussed in A. The student will participate in seminar discussions and be observed in an actual studio teaching situation. Emphasis will be on the diagnosis and cure of specific vocal problems.

497 Senior Project (1)
Prerequisite: Mu 397. Intensive independent investigation of an area of special interest in music, culminating in a public performance, lecture, lecture-recital or other suitable demonstration.

498 Senior Recital (1)
Prerequisites: 371-level (471-level for performance majors) and consent of instructor. Intensive preparation and presentation of representative works in the principal performance area.

499 Independent Study (1-3)
Study of a special topic in music selected in consultation with the instructor and carried out under his supervision. May be repeated for credit.

500 Introduction to Graduate Study in Music (2)
Required of all graduate music majors. Study of basic bibliography, literature, and research techniques and materials useful in graduate music study.

522 Contemporary Techniques of Composition (2)
Advanced techniques of composition, as applied to the student's area of graduate specialization.

523 Advanced Orchestration (2)
Prerequisite: Mu 323B. Analysis and practice of traditional and contemporary orchestration techniques. Scoring of music for large ensembles such as orchestra, band, chorus and orchestra, or chorus and band.

551 Seminar in Music of the Medieval Period (2)
Prerequisite: consent of instructor. A detailed study of the music forms, structures and styles from 500 to 1450. Detailed analysis of important representative works as well as the contributions of individual composers and theoretical writers.

552 Seminar in Music of the Renaissance (2)
Prerequisite: consent of instructor. A comprehensive study of the forms, styles, and developmental characteristics of music between 1450 and 1600. Detailed analysis of selected works by representative composers and theoretical writers.

553 Seminar in Music of the Baroque Period (2)
Prerequisite: Mu 351A,B or consent of instructor. Musical forms, styles, and performance practices of the baroque period. Detailed analysis of significant representative works.

554 Seminar in Music of the Classic Period (2)
Prerequisite: Mu 351A,B or consent of instructor. A study of the history and literature of music from approximately 1750 to 1825. Detailed analysis of important representative works.

555 Seminar in Music of the Romantic Period (2)
Prerequisite: consent of instructor. An intensive study of the structure and development of music in the 19th century. Detailed analysis of important representative works.

556 Seminar in 20th-Century Music (2)
Prerequisite: Mu 351A,B or consent of instructor. Developments in the music of western Europe and the western hemisphere since 1890. Intensive study of contemporary music and its structure.

557 Seminar in Musicology (2)
Prerequisites: at least two courses from Mu 551-556 and consent of instructor. Detailed investigation and systematic analysis of specific developments in musicology including exercises in transcriptions from old notations and historical investigations prepared by members of the seminar.

558 Collegium Musicum (2)
Prerequisite: consent of instructor. Advanced studies in the performance of rare and old music. (See Mu 458 for general description.) May be repeated for credit.

571 Individual Instruction (1-2)
Prerequisite: jury recommendation. Individual instruction with approved instructor with emphasis on performance techniques and repertory. Required of all graduate students whose terminal project is the graduate recital.

591 Seminar in Advanced Choral Conducting and Interpretation (2)
Prerequisite: Mu 391B, conducting experience or consent of instructor. Advanced problems in choral conducting techniques, with emphasis on laboratory work with student groups and in concert conducting.

592 Seminar in Advanced Instrumental Conducting and Interpretation (2)
Prerequisites: Mu 392B, keyboard facility for score reading and consent of instructor. Advanced study of conducting techniques through assignments with the university symphony. Interpretive problems of each period covered in lectures.

597 Project (1-3)
Systematic study and report of a significant undertaking in the area of musical composition, musical performance, or other related creative activity. A written critical evaluation of the work or activity will be required.

598 Thesis (3)
Individual investigations of specific problems in the area of concentration by candidates for the M.A. degree.

599 Independent Graduate Research (1-3)
Prerequisites: graduate standing in music and consent of instructor. Research and study projects in areas of specialization beyond regularly offered coursework. Oral and written reports required.

MUSIC EDUCATION COURSES

342A,B Practicum in School Materials and Techniques (2,2)
Designed for the music education major. Experience in the use of musical materials, conducting, organization and management. Observation and application of rehearsal and classroom techniques. Must be taken concurrently with Mu 399. **A**—Choral. Prerequisite: Mu 391A,B. **B**—Instrumental. Prerequisite: Mu 392A,B.

435 Music in the Modern Classroom (3)
Prerequisite: Mu 333 or consent of instructor. A survey of 20th-century materials and techniques of recordings for creative movement to music, and of choral materials and techniques appropriate for the elementary school choir. Adaptation of materials for use in classroom music.

441 Teaching General Music in Secondary Schools (2)
Prerequisite: admission to teacher education, senior standing or consent of instructor. Objectives, methods and materials for teaching general music or allied arts-humanities classes in secondary schools, including their relationship to specialized instrumental and choral programs. Practical problems and field work applications are included.

442 Principles and Methods of Teaching Music in the Public Schools (3)
Prerequisite: admission to teacher education. History, principles of public education, grades K-12, with special emphasis on music. Philosophy, methods, materials and procedures for organizing and teaching music in elementary and secondary schools.

444 Administration, Materials for the Marching Band (2)
Prerequisite: Mu 323A or consent of instructor. A study of techniques, materials, administration for marching band. Includes charting for the football field and parade activities, with particular emphasis on the needs of school bands. (2 hours lecture, 2 hours activity)

449A Student Teaching in Music in the Secondary School (10)
For candidates who have declared for the Ryan Act credential. See description and prerequites under Division of Teacher Education.

449B Student Teaching Seminar (2)
Must be taken concurrently with MuEd 449A. For candidates who have declared for the Ryan Act credential. See description and prerequisites under Division of Teacher Education.

530 Practicum of Research in Music Education (2)
Prerequisites: graduate standing in music and completion of Mu 500. Research techniques and procedures in music education. Students will be required to complete a creative project or research paper.

531 Foundations of Music Education (2)
Prerequisite: Mu 500. Study of philosophical and historical bases which have influenced music education. Identification of philosophic frames of leading educators. Contemporary trends which affect the teaching of music in the schools. Prerequisite for all graduate music education courses.

532 Seminar in Music Education (2)
Studies in the trends and application of educational theory in relation to the teaching of music in the public schools.

544 Curriculum Planning and Construction in Music (2)
Principles and practices of curriculum planning in music education, with special reference to the public elementary, junior and senior high school. Required of majors who intend to complete supervision credential.

545 Supervision and Administration of Music in the Public Schools (2)
Open to music education majors with teaching experience. Philosophy, principles and practices of supervision of music in the public elementary and secondary schools. Emphasis

on modern principles of leadership, types of services, organization, management and evaluation of programs of instruction. Required of candidates for supervisory credential.

749 Student Teaching in Music in the Secondary School and Seminar (6)

For candidates who have declared for the Fisher Act credential. See description and prerequisite under Division of Teacher Education.

DEPARTMENT OF THEATRE

FACULTY
Alvin Keller
Department Chair

Joseph Arnold, John Boyd, Ronald Dieb, Marjorie Farmer, Donald Henry,* Dean Hess, Michael McPherson, R. Kirk Mee, S. Todd Muffatti, Dwight Odle, Jerry Pickering, William Raoul, Robert Rence, Darrell Winn, James Young,* Allen Zeltzer*

The Department of Theatre program includes the several fields of playwriting, oral interpretation, acting-directing, technical theatre, theatre history and theory, radio-television-film and dance. Specifically, the coursework is arranged to provide opportunities for students (1) to develop an appreciation for the theatre; (2) to become aware, as audience or participants of the shaping force of the theatre in society; (3) to improve the understandings and skills necessary for work in the theatre as a profession; (4) to prepare for teaching theatre; and (5) to pursue graduate studies.

Theatre majors must maintain a 2.5 grade-point average in their major for graduation. In addition to course requirements, all students will enroll for one unit of Theatre 478 each semester.

BACHELOR OF ARTS IN THEATRE ARTS

Course programs have been planned to meet the individual needs and interests of students working for the Bachelor of Arts in Theatre Arts.

Plan I is for those who wish to study theatre as a cultural contribution or who wish to pursue graduate degrees in theatre with emphasis in theatre history and theory. It is strongly recommended that students electing this plan support the major with approved electives from art, music, foreign languages, literature, philosophy or speech.

Plan II is designed to develop the necessary competency for pursuing theatre as a profession, or for pursuing graduate degrees in theatre with an emphasis in an area of concentration other than history of the theatre. Areas of concentration are: playwriting; acting; directing; oral interpretation; radio-television-film; technical theatre and dance.

Plan III meets the requirements of the teaching credential with specialization in secondary teaching.

In addition to the requirements listed below for the major, students must meet the other university requirements for a bachelor of arts degree. Students following Plan III also must meet any specific requirements for the desired teaching credential (see section in catalog for School of Education). Those students who plan to work on the M.A. degree as well as the credential should see the chair of the Department of Theatre.

PLAN I: THEATRE HISTORY AND THEORY EMPHASIS *Units*

Lower Division: Theatre 100A,B, Introduction to the Theatre (6); Theatre 263A, Beginning Acting (3); Theatre 276A,B, Stagecraft (6); Theatre 277, Costume Fundamentals (3) or Theatre 285, Theatrical Makeup (2); Theatre 211, Introduction to Interpretation (3) 20-21

Upper Division: Theatre 370A, Fundamentals of Directing (3); Theatre 475A,B,C,D, World Theatre (12); Theatre 477A,B, Senior Seminar in Critical Techniques (6); Theatre 472, American Theatre (3); electives (3 units) 27

*University administrative officer

PLAN II: PROFESSIONAL EMPHASIS IN AN AREA OF CONCENTRATION *Units*

Lower Division: Same as in Plan I, with exception of acting, radio-television-film, dance, technical theatre and directing.

Upper Division: In one of the following areas of concentration:

Playwriting—Theatre 364, Seminar in Playwriting (6), or Theatre 364 (3) and Theatre 383, Television Writing (3); Theatre 370A,B, Fundamentals of Directing (6); Theatre 468, Experimental Theatre (3); Theatre 475A,B,C,D, World Theatre (12); Theatre 477A,B, Senior Seminar in Critical Techniques (6) 33

Oral Interpretation—Theatre 311, Advanced Interpretation (3); Theatre 411A,B,C, Interpretation of Prose, Poetry and Drama (9); Theatre 414, Readers Theatre (3); Theatre 475A,B,C,D, World Theatre (12); Theatre 477A, Senior Seminar in Critical Techniques (3) 30

The major in theatre with an emphasis in interpretation requires 25 units in supportive courses from related areas such as stage lighting, art, literature, composition, linguistics, speech, philosophy to be selected in consultation with the student's adviser.

Acting—*Lower Division:* Theatre 100A,B, Introduction to the Theatre (6); Theatre 241, Voice Production for the Performer (3); Theatre 251, Body Movement for the Actor (3); Theatre 263A,B, Beginning Acting (6); Theatre 276A,B, Stagecraft (6); Theatre 285, Theatrical Makeup (2) 26

Upper Division: Theatre 370A,B, Fundamentals of Directing (6); Theatre 363A,B, Intermediate Acting (6); Theatre 463A,B, Advanced Acting (6); Theatre 475A,B,C,D, World Theatre (12); Theatre 480, Television Production and Direction (3) or Theatre 382, Television Dramatic Techniques (3); dance electives (2) 35

Radio-Television-Film

Unit Group I: Theatre 100A,B, Introduction to Theatre (6); Theatre 276A,B, Stagecraft (6); Theatre 282, Video Basics (3); Theatre 290A,B, History of Motion Pictures (6); Theatre 380, Introduction to Radio and Television (3); Theatre 382, Television Dramatic Techniques (3); Theatre 386, Stage Lighting (3); Theatre 392A,B, Dramatic Film Production (6), 6 units of adviser-approved courses in Communications Department 42

Unit Group II: Theatre 211, Oral Interpretation (3); Theatre 241, Voice Production for the Performer (3); Theatre 263A,B, Beginning Acting (6); Theatre 277, Costume Fundamentals (3); Theatre 285, Theatrical Makeup (2); Theatre 370A,B, Fundamentals of Directing (6) 6

Unit Group III: Theatre 475A,B,C,D, World Theatre (12) 6

Unit Group IV: Theatre 282, Video Basics (3); Theatre 381, Radio and Television Announcing (3) and Theatre 480, Television Production and Direction (3) *or* Theatre 490A,B, Advanced Dramatic Film Production (6); Theatre 383, Television Writing (3); Theatre 486, Advanced Lighting (6); Theatre 492, Television/Film Aesthetics and Criticism (3) 9

Directing—*Lower Division:* Theatre 100A,B, Introduction to the Theatre (6); Theatre 263A, Beginning Acting (3); Theatre 276A,B, Stagecraft (6); Theatre 277, Costume Fundamentals (3); Theatre 285, Theatrical Makeup (2); Theatre 211 Introduction to Interpretation (3) 23

Upper Division: Theatre 350, Organization for Production (1); Theatre 370A,B, Fundamentals of Directing (6); Theatre 386, Stage Lighting (3); Theatre 470A,B, Advanced Directing (8); Theatre 475A,B,C,D, World Theatre (12); Theatre 480, Television Production and Direction (3) *or* Theatre 382, Television Dramatic Techniques (3); electives, 6 upper division units in technical theatre 39

Technical Production/Design Major—The technical theatre major does not divide into an upper division or lower division format. Majors will be expected to follow unit groupings for a total of 57 units.

Unit Group I: Basic technical class core to be taken by all majors—Theatre 100A,B, Introduction to the Theatre (6); Theatre 188, Historical Styles (3); Theatre 263A, Beginning Acting (3); Theatre 276A,B, Beginning Stagecraft (6); Theatre 277, Costume Fundamentals (3); Theatre 285, Theatrical Makeup (2); Theatre 288,

	Units
Design for the Theatre (3); Theatre 350, Organization for Production (1); Theatre 370A, Fundamentals of Directing (3); Theatre 386, Stage Lighting (3); Theatre 387, Audio Techniques (3); Theatre 450, Theatre Management (3) ...	39
Unit Group II: Theatre 475A,B,C,D, World Theatre(12)	6
Unit Group III: Theatre 370B, Fundamentals of Directing (3); Theatre 376A,B, Advanced Stagecraft (6); Theatre 377A,B, Stage Costuming (6); Theatre 385, Advanced Theatrical Makeup (3); Theatre 388, Intermediate Scene Design (3); Theatre 392A,B, Dramatic Film Production (6); Theatre 480, Television Production and Direction (3); Theatre 486, Advanced Stage Lighting (3); Theatre 488, Advanced Scene Design (3); or any adviser-approved three unit compatible course (3)	12
Dance—*Lower Division:* Theatre 100A,B (6); Dance 100 (3); Dance 102A,B (4); nine units selected from Dance 112, 122, 126A,B, 132, 142, 152, 162, 206A,B, 212, 222, 232, 242, 262; five to six units selected from: Theatre 276A, 277, 285	27-28
Upper Division: Dance 323A (3); Dance 375 (3); Dance 383A,B (6); Dance 422 (3); Dance 423 (3); Dance 475 (3); six units by advisement selected from Theatre 350, 386, 387, 450, 486; three units selected from Theatre 363A, 370A; three units selected from Theatre 475A,B,C,D; three units selected from Dance 316A,B, 462, 483, 496, 499.....	36

PLAN III: TEACHING EMPHASIS (Single Subject)

Lower Division: Theatre 100A,B, Introduction to Theatre (6); Theatre 211, Introduction to Interpreation (3); Theatre 263A, Beginning Acting (3); Theatre 276A,B, Beginning Stagecraft (6)	18
Upper Division: Theatre 342, Simplified Technical Production (3); Theatre 370A,B, Fundamentals of Directing (6); Theatre 386, Stage Lighting (3); Theatre 402, Dramatic Activities for Children (3); Theatre 403, Theatre for Children (3); Theatre 414, Readers Theatre (3); Theatre 450, Theatre Management (3); Theatre 470A, Advanced Directing (4); Theatre 475A,D,E, World Theatre (9).	37

MASTER OF ARTS IN THEATRE ARTS

The Master of Arts in Theatre Arts is designed to provide a program of coordinated graduate studies built on the framework of the undergraduate preparation; to provide added incentive for intellectual growth reflected in improvement in teaching and professional recognition; and to provide a sound basis for continued graduate study in the field of theatre. The student is expected to demonstrate a high degree of intellectual and creative competence and to demonstrate mastery of one of the areas of emphasis in theatre: (1) acting and directing, (2) dance, (3) dramatic literature and criticism, (4) oral interpretation, (5) playwriting, (6) radio and television, (7) theatre for chilren, (8) theatre history; (9) technical theatre.

Prerequisites

An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures).

A student who meets the requirements for conditionally classified graduate standing, as well as the following requirements, may be admitted as a classified graduate upon the development of an approved study plan: an appropriate undergraduate major in theatre, with a grade-point average of 3.0 in all upper division work in the major, or at least 24 units of appropriate upper division work in theatre, with a GPA of 3.0; Theatre 477A, Senior Seminar in Critical Techniques, or in the case of transfer students, its equivalent. Upon recommendation of the student's graduate committee, additional prerequisites may be required prior to classification and the approval of the area of emphasis. Students will complete an oral interview as early as possible before becoming classified.

Study Plan

The degree study plan in theatre will include at least 30 units of adviser-approved graduate studies, 15 units of which must be in 500-level courses. Each program will have 24 units in theatre, including a core of six units (Theatre 500, Introduction to Graduate Study—which

must be taken the first semester of graduate study; Theatre 597, Project; or Theatre 598, Thesis) and six units of adviser-approved supporting courses in related fields either in other departments or within the Theatre Department. Before the degree is granted each student will pass oral and written examinations. Students will be permitted to take the written examination twice.

For further information, consult the Department of Theatre. See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin*.

THEATRE COURSES

100A,B Introduction to the Theatre (3,3)
A—Considers theatre as an entertainment medium, as well as a force for social change, by way of slides, films, demonstrations, attendance at play productions, and lectures. **B**—A study of current plays, motion pictures and television with special emphasis on dramatic analysis and cultural significance.

101 Theatre Hour (1)
Various aspects of the theatrical arts through guest lectures and artists, as well as presentations from the different areas of emphasis within the department's curricula. Enrollment on a credit/no credit basis only.

188 Historical Styles for Theatrical Design (3)
Visual survey through lecture and slides of architecture, interior design and furniture from ancient to modern times. Provides a necessary foundation for scene design and technical courses.

211 Introduction to Interpretation (3)
An introduction to the basic techniques for the analysis and performance of literature by the interpreter.

241 Voice Production for the Performer (3)
Fundamental techniques, methods and training to give the actor maximum use of his voice in theatre. Correction of speech faults and regional accents. Introduction to problems of stage dialects. Study of basic interpretive material. May be repeated for credit. (1 hour lecture, 4 hours activity)

251 Body Movement for the Actor (3)
Fundamental work in developing the body as an expressive instrument; acquiring of strength, flexibility, relaxation, control. Establishment of an awareness of and coordination of relationship of the body to the creative project. May be repeated up to six units of credit. (6 hours activity)

263A,B Beginning Acting (3,3)
Prerequisite: 263A is prerequisite to B. Laboratory practice and discussions of the form and content of the art of acting. **A**—Improvisation, action and motivation and behavior. **B**—Continuation of A and problems in characterization. (6 hours activity)

272 Understanding Theatre (3)
A nontechnical survey course for the general student leading to an appreciation and understanding of the theatre as a medium of communication and as an art form. Field trips to certain significant productions. Recommended for non-majors.

276A,B Beginning Stagecraft (3,3)
Prerequisite: 276A is prerequisite to B. Study and practice in planning and construction of stage and television scenery including use of tools, stage equipment and reading of technical drawings. Students will crew productions. Required by second year. (More than 6 hours activity)

277 Costume Fundamentals (3)
Study of the principles and procedures of costuming theatrical and television productions. Practical experience in basic construction techniques, organizing and executing duties of the costume crew. Designed primarily for non-technical majors within the department and as an introductory course for technical majors. (More than 6 hours activity)

280 History of Radio and Television Programming (3)
Analysis of selected aural and visual programming presented by major networks. From 1926 to the present. (Same as Communications 280)

282 Video Basics (3)
Theory and practice in the fundamentals of production for television. (6 hours activity)

285 Theatrical Makeup (2)
Theory and practice in makeup for stage and television. Emphasis on development of individual skill in techniques of character analysis, application in pigment, plastic, hair makeup, and selection and use of makeup equipment. (4 hours activity)

288 Design for the Theatre (3)
Prerequisites: Theatre 188. Fundamental exposure to all aspects of scene design: aesthetics, practical considerations and technical skills, such as drawing and model building. (Same as Art 288) (6 hours activity)

290A,B History and Aesthetics of Motion Pictures (3,3)
History and development of the motion picture as an art form and social influence. **A**—The motion picture from its origins until 1945. **B**—The contemporary cinema, from 1945 to present. (Same as Communications 290A,B)

311 Advanced Interpretation (3)
The application of advanced techniques for the analysis and performance of literature. May be repeated for credit with consent of instructor.

342 Simplified Technical Production (3)
Open to theatre education majors only. Simplified inexpensive methods of producing in: design, costume, makeup, production organization and technical problem solving. Includes handling of limited resources, untrained personnel, improper facilities and equipment. Participation on production crews. Supplements the theatre education program in technical theatre. (More than 6 hours activity)

350 Organization for Production (1)
Prerequisite: Theatre 370A. Theory and training in backstage management, stressing interrelationships of production personnel. Students will serve as crew heads or stage managers. Sophisticated production abilities are mandatory.

363,A,B Intermediate Acting and Characterization (3,)
Prerequisites: Theatre 241, 251, 263A,B. 363A is prerequisite to B, or consent of instructor. Emphasis on extended and integrated speech and movement problems in characterization. Ensemble acting, extensive analysis and exploration and basic television techniques. (6 hours activity)

364 Seminar in Playwriting (3)
Prerequisite: evidence of student's previous interest in creative writing and consent of instructor. Study of superior models, development of style, and group criticism and evaluation of each student's independent work, as it relates to playwriting. May be repeated for credit. (Same as English 364)

370A,B Fundamentals of Directing (3,3)
Prerequisites: 370A is prerequisite to B; Theatre 263A, or consent of instructor. The study of prerehearsal problems and procedures, of the structural analysis of plays, and of composition, picturization, pantomimic dramatization, movement and rhythm on stage and in television. Practice in directing scenes. (6 hours activity)

376A,B Advanced Stagecraft (3,3)
Prerequisite: Theatre 276B or consent of instructor. Advanced problems in planning and executing scenery for stage and television. Students will also work in the scene shop for major productions. (More than 6 hours activity)

377A,B Stage Costuming (3,3)
A—A chronological study of fashions and textiles of major historical periods, methods of research; interpreting historical costume for theatrical statement. **B**—Techniques of designing and constructing costumes with emphasis on creative planning. Participation in major productions of the department. (More than 6 hours activity)

380 Introduction to Radio and Television (3)
The history and development of the broadcasting industry and its impact and influence on our society. A study of the basic broadcasting practices, audiences, production and programming. (Same as Communications 380)

381 Radio and Television Announcing (3)
Prerequisite: Theatre 211 or consent of instructor. Theory and practice of control room operation. Lectures and practice in microphone and camera techniques, commercial

announcements, interviewing, sportscasting, narration, foreign pronunciation, and continuity. (6 hours activity)

382 Television Dramatic Techniques (3)

Prerequisite: Theatre 282. Television techniques and production, designed primarily for theatre majors to train the director, actor and designer in the elements of televised drama. (6 hours activity)

383 Television Writing (3)

Study of the principles and practices and experience in the writing of scripts and other forms of continuity for television. May be repeated for credit.

385 Advanced Theatre Makeup (2)

Prerequisite: Theatre 285. Advanced problems in makeup including special techniques and material prosthetics, hairpieces, masks for television and film; practical application of study through design and supervision of makeup for departmental productions (4 hours activity)

386 Stage Lighting (3)

Prerequisites: Theatre 276A,B or equivalent. Theory and practice in stage lighting and television presentations. Emphasis is given to design and the technology for its illumination. (More than 6 hours activity)

387 Audio Techniques (3)

Prerequisites: Theatre 276A,B or equivalent. Theory, procedures and practice necessary to develop and to integrate live and recorded sound into performing arts productions. Emphasis given to recording, reproduction and studio techniques. (6 hours activity)

388 Intermediate Scene Design (3)

Prerequisites: Theatre 288. Designing stage sets on paper and in model form for a variety of productions and theatres. Work in preparing designs for practical execution as part of an actual production. (6 hours activity)

392A,B Dramatic Film Productions (3,3)

Theory and practice of silent dramatic film production techniques to include mechanical operation of super 8mm and 16mm equipment, preparation of shooting script, direction and production of several short films, criticism and analysis of finished products. (6 hours activity)

401 Criticism of the Arts (3)

Prerequisite: senior or graduate standing in the School of the Arts or consent of instructor. Development of criteria and vocabulary for criticism of the visual and performing arts through lectures, readings, discussions, and exhibit and performance attendance. Emphasis on descriptive and evaluative skills in music, art, theatre, dance and cinema criticism.

402 Dramatic Activities for Children (3)

Theory and practice in the use of creative dramatics, storytelling, puppetry, assembly programs, role-playing and other aspects of dramatics as tools for the teacher, group worker, recreation major and others who work with children. (6 hours activity)

403 Theatre for Children (3)

Theories and principles of production in the formal theatre arts for children. Demonstrations of appropriate theatrical forms with analysis and evaluation. (6 hours activity)

411A Interpretation of Prose Literature (3)

The study of the techniques of criticism and performance used in the interpretation of prose literature.

411B Interpretation of Poetry (3)

The study of the techniques of criticism and performance used in the interpretation of poetry.

411C Interpretation of Drama (3)

The study of the techniques of criticism and performance used in the interpretation of drama.

414 Readers Theatre (3)

The theory, principles and techniques of the interpretation of literature in the medium of readers theatre. May be repeated for credit with consent of instructor. (6 hours activity)

450 Theatre Management (3)

Discussion and practice of the basic elements of public relations as applied to theatre with a

detailed analysis of various advertising mediums and experimentation in their use. A study of the various financial aspects of academic, community and professional theatre operations including practical experience in front-of-the-house management and box office operation through the department's public presentations. (6 hours activity)

463A,B Advanced Acting (3,3)

Prerequisite: Theatre 363A,B. 463A is prerequisite to B, or consent of instructor. A study of historical theories and techniques of styles of acting as an art form. The first semester will include Greek through renaissance periods and the second semester will include the neoclassic periods to contemporary styles. (6 hours activity)

468 Experimental Theatre (3)

An activity course in which dramatic principles are applied through production of full length and one-act plays using various styles of acting and staging. May be repeated up to six units for credit. (More than 3 hours production per unit)

470A,B Advanced Directing (4,4)

Prerequisites: Theatre 350, 370A,B and 475B,D, or consent of instructor. Readings in theory, analysis of scripts and practice in directing plays for their oral and visual value as theatre. **A**—Each student directs public performances of a one-act play. **B**—Each student directs public performances of two one-act plays or equivalent. (8 hours activity)

472 American Theatre (3)

Prerequisite: junior standing. The development of the art of theatre in the United States from colonial times to the present day; its place and potentialities as a force in a democratic society.

475A,B,C,D,E World Theatre (3,3,3,3,3)

Examination of the historical and dramatic evolution of world theatre. **A**—Ancient Greece and Rome, Middle Ages; Italian renaissance; **B**—England from 1558-1790; 16th- and 17th-century Spain and France; **C**—18th- and 19th-century Europe and Russia; 19th-century England; **D**—18th- and 19th-century America; the Orient; the modern world. **E**—Historical background and contemporary view of the musical theatre. Students registering for Theatre 475 must have completed the requirements for upper division standing.

477A,B Senior Seminar in Critical Techniques (3,3)

Theatre 477A or consent of instructor prerequisite to B. First semester presents a historical survey of major critical theories as they apply to theatre. Second semester provides the opportunity to apply critical theories to local dramatic productions.

478A,B Rehearsal and Performance (1,1)

A—Acting in stage or television performances. **B**—Technical crew work on stage and television performances. One unit per semester required of all theatre majors. Enrollment on a credit/no credit basis only. (More than 3 hours production per unit)

480 Television Production and Direction (3)

Prerequisites: Theatre 282. Theory and practice in the production of television programs and announcements: the planning, organizing, directing, rehearsing, performing, recording and editing of television programs and announcements. (1 hour lecture, 4 hours activity)

486 Advanced Theatrical Lighting (3)

Prerequisites: Theatre 386 or consent of instructor. The design and technology of lighting. Student will be prepared to design for the stage, dance pageant, display, film and television. Student will do at least one major lighting project as part of the course. (6 hours activity)

488 Seminar in Advanced Scene Design (3)

Prerequisites: Theatre 288 and 388. In-depth study and practice in design styles for various types of theatres and for TV and film. Emphasis on building a portfolio. (Same as Art 488)

489 Television Production Activities (3)

(Same as Communications 489)

490A,B Advanced Dramatic Film Production (3,3)

Prerequisites: Theatre 392A,B. Theory and practice of 16mm sound film production with emphasis on the narrative film. Labs and lectures include the development of scripts, uses of sound film, editing and directing the sound film and production of several short films. (6 hours activity)

491 Senior Seminar: Greek Tragedy (3)
(Same as Comparative Literature 491)

492 Television/Film Aesthetics and Criticism (3)
Prerequisites: Theatre 290A,B, 480 or consent of instructor. An exploration of the nature of film and television through aesthetic and theoretical bases and the establishment of a critical basis for film and television evaluation and understanding.

499 Independent Study (1-3)
Undergraduate creative or research projects. Open to advanced students with the consent of instructor. Student must complete course application form by the end of the seventh week of the semester preceding the semester in which the work is to be done. May be repeated for credit.

500 Introduction to Graduate Study in Theatre (3)
Introduction to methodological problems in graduate research. Location of source materials, including library and original data; research and project design and execution; interpretation of researches. Must be taken the first semester after admission to graduate study.

501 Graduate Seminar: Advanced Theatre Theory (3)
Prerequisite: Theatre 500. Directed research with emphasis on the relationship between historical backgrounds and developments in the theatre and the student's area of concentration.

503 Seminar: Theatre for Children (3)
Prerequisite: Theatre 403. Critical study of the historical development, philosophies, theories, techniques and trends of the art of theatre for children. Research and investigation of problems related to the use of materials in educational, community and professional children's theatres.

511 Graduate Seminar in Interpretation (3)
The historical and philosophical backgrounds in the development of interpretation and its relationship to contemporary theory and practice.

571 Graduate Seminar: Major Writers (3)
As appropriate to the specialized research of instructor, this course will offer directed research and writing, group discussion, and lectures covering major figures. May be repeated with different content for additional credit. (Same as English 571)

572 Graduate Seminar, Literary Genres (3)
As appropriate to the specialized research and publications of instructor, this course will offer directed research and writing, group discussion and lectures covering such major literary types as: tragedy, comedy and historical drama. With consent of adviser, may be repeated with different content for additional credit. (Same as English 572)

576 Production Planning in Theatre Arts (3)
History and philosophy of production problems in theatre arts. Organization of the university theatre as it relates to the total university program. Planning of the production within the limitations of budgets and physical facilities.

597 Project (3)
Prerequisites: consent of instructor, student's graduate committee and department executive committee. Development and presentation of a creative project in the area of concentration beyond regularly offered coursework. May be repeated to a maximum of six units. Student must complete course application form by the end of the seventh week of the semester preceding the semester in which the work is to be done.

598 Thesis (3)
Prerequisites: consent of student's graduate committee. Development and presentation of a thesis in the area of concentration beyond regularly offered coursework. Student must complete course application form by the end of the seventh week of the semester preceding the semester in which the work is to be done.

599 Independent Graduate Research (1-3)
Open to graduate students in theatre with consent of instructor and student's graduate committee. May be repeated for credit. Student must complete course application form by the end of the seventh week of the semester preceding the semester in which the work is to be done.

THEATRE EDUCATION COURSES

442 Teaching Theatre in the Secondary School (3)
Prerequisite: admission to teacher education. Objectives, methods and materials, including audiovisual instruction for teaching in secondary schools. See description of secondary school teaching credential program under Division of Teacher Education.

449A Student Teaching in Theatre in the Secondary School (10)
See description under Division of Teacher Education.

449B Student Teaching Seminar (2)
See description under Division of Teacher Education.

484 Educational Television Production (3)
Theory and practice in the activities, methods of lesson preparation, and presentation of educational television productions.

749 Student Teaching in Theatre in the Secondary School and Seminar (6)
For candidates seeking the Fisher standard credential in secondary teaching. See description and prerequisite under Division of Teacher Education.

BUSINESS ADMINISTRATION AND ECONOMICS

SCHOOL OF BUSINESS ADMINISTRATION AND ECONOMICS

Dean: Jack W. Coleman
Associate Dean: Edward R. Zilbert

Department of Accounting: Henry Anderson, Chair
Dale Bandy, James Cork, Eugene Corman, Mary Fleming, Clyde Hardman, John Hinds, A. Jay Hirsch, Robert Lamden, Maria Melcher, Robert Miller, Robert Vanasse, Herbert Watkin, John Williams, Dorsey Wiseman, John Woo, Arnold Wright

Department of Economics: John Lafky, Chair
Maryanna Boynton, Kwang-wen Chu, James Dietz, Franz Dolp, Alan Fisher, Kenneth Goldin, Levern Graves, Lionel Kalish, Sidney Klein, Stewart Long, Robert Michaels, Gary Pickersgill, Joyce Pickersgill, Jack Pontney, Guy Schick, Norman Townshend-Zellner

Department of Finance: Dennis O'Connor, Chair
Dick Bednar, Albert Bueso, Peter Mlynaryk, John Nichols, Radha Sharma, Peter Sibbald, Frank Taylor, Marco Tonietti, B. E. Tsagris

Department of Management: Geoffrey King, Chair
Farouk Abdelwahed, Robert Allan, Thomas Apke, John Bayless, Mei Liang Bickner, Robert Chapman, Fred Colgan, James Conant, Richard Gilman, Leo Guolo, Granville Hough, Leland McCloud, Kent McKee, Tai Oh, Donald Shaul, John Trego, Edgar Wiley

Department of Marketing: Irene Lange, Chair
Robert Barath, William Bell, Paul Hugstad, Robert Olsen, Frank Roberts, James Taylor, Jack Wichert, Guthrie Worth

Department of Quantitative Methods:
Gora Bhaumik, Gary Bloom, Milton Chen, Wen Chow, Ronald Colman, Ben Edmondson, Basil Gala, William Heitzman, James Hightower, John Lawrence, Marshal McFie, Demetrios Michalopoulos, Fred Mueller, Herbert Rutemiller, Sohan Sihota, Ram Singhania, Eric Solberg, David Stoller, LaVerne Stanton

Academic Objectives of the School

The faculty of the school believes that it can best optimize its effectiveness in achieving the broad educational objective of the university by concentrating its energies on the exploration and teaching of relevant concepts, principles and practices, including interrelationships. Additionally, the faculty recognizes the need for integrating and relating the various disciplines into a balanced and thought-provoking educational experience for the student. While considerable emphasis must be placed on the need for breadth of knowledge and creativity in thought and actions, there must also be emphasis on exploration and analysis in some depth of those disciplines most relevant to the business profession. These disciplines are recognized to be interrelated and are to be integrated through the application of economics, behavioral and quantitative sciences, systems theories and concepts, decision theories, computer sciences, logic, and theoretical and applied research methodology. In addition, the faculty of the school has set forth specific objectives for its curriculum and related programs. A summary statement of these objectives is as follows:

1. *Educational and Professional*
   Through a study of the various theoretical and practical business and economic models, policies and procedures, each student is to be afforded and provided with technical expertise in a chosen discipline—accounting, economics, finance, management, marketing, quantitative methods and business education—to a depth acceptable to prospective employers for beginning professional employment.
2. *Human and Ethical*
   A major part of effective society and business leadership is related to organization and direction of human resources to achieve general and specific goals. Therefore, a knowledge of human values—the ethical, psychological and sociological foundation for human behavior—is essential. This includes an awareness and understanding of the

nature of human values, of individual goals and the forces which lead to their achievement; the function of leadership in relating individual and enterprise goals; the impact of group dynamics, informal organizations, and interpersonal relationships on the administrative process; and the need for a personal code of ethics.

3. *Socioeconomic, Political and Cultural Environment*
   Firms do not operate in a vacuum, and information about the external forces and constraints which bear on the enterprise comprises a necessary body of knowledge for competent business planners and administrators. In particular, development of economic literacy to support rational choice; recognition of economic implications resulting from economic policy decisions by various levels of government; and a conceptualization of the impact of the various institutions on the enterprise and the impact of business leadership decisions on the social system as a whole are stressed.

Student Organizations
Chapters of the following national honor societies have been established on campus with membership open to qualified students: Alpha Delta Sigma (advertising), Beta Alpha Psi (accounting), Beta Gamma Sigma (business), Financial Management Association Honor Society (Finance), Omicron Delta Epsilon (economics), Phi Kappa Phi (all campus), Pi Sigma Epsilon (Marketing). In addition there are the following departmentally affiliated clubs which students are encouraged to join: the Accounting Society, Computer Club, Data Processing Management Association, Economics Association, Finance Association, Marketing Club, Personnel and Industrial Relations Association, QM Club, Rho Epsilon (Real Estate-Finance) and Society for the Advancement of Management.

Internship and Cooperative Education Program
The School of Business Administration and Economics is offering a limited number of internship positions in business, industry and public agencies for qualified business students. Students interested in this program should be of junior standing academically qualified, and have received consent of the internship adviser. Opportunities exist in such areas as: accounting and auditing; cost/benefit analysis and econometrics; finance and real estate; insurance and banking; management and industrial relations; marketing, sales, and advertising; computer programming and business data systems; and other specialized areas fitting the need of the student and the business community. In return for the student's participation in the School of Business Administration and Economics internship program, the student intern will receive academic credit through Business Administration 495 (on a credit/no credit basis), plus first hand experience and financial remuneration from their employers.

For further information and/or applications on this program, please contact the Academic Programs Office, School of Business Administration and Economics.

Undergraduate Program in Business Administration and Economics
The School of Business Administration and Economics offers two undergraduate degree programs: the B.A. in Business Administration and the B.A. in Economics. Students majoring in the school are encouraged to elect courses in other divisions of the university, particularly in the area of behavioral, social, and political sciences, and foreign languages. It is assumed that the first half of their university work toward a bachelor's degree represents a required basic education in communication, mathematics, natural science, social sciences and the humanities. Since quantitative and written communication skills are increasingly emphasized in business and the social sciences, students who contemplate enrollment in either business administration or economics are encouraged to take college preparatory English and four years of high school mathematics. *College algebra, or three years of high school mathematics including a second course in algebra, will be a minimum mathematical prerequisite for entrance to the program.*

BACHELOR OF ARTS IN BUSINESS ADMINISTRATION

Degree Requirements
In addition to the required coursework in business administration, students must complete Math 130 or its equivalent and demonstrate proficiency in written communication (See No. 8 below). *If credits for elementary accounting, economics, calculus and the English requirements have not been met, it will be necessary to complete these requirements before or during the first semester of the junior year.*

In addition to the requirements listed below for the major, students must meet the other university requirements for a B.A. degree (see page 60). The degree requirements are as follows:

1. Completion of a minimum of 60 semester credit hours in the School of Business Administration and Economics, of which 42 semester credit hours must be upper division.
2. Completion of the required core courses in the School of Business Administration and Economics.
3. Completion of 18 semester credit hours of required courses in an area of concentration to be selected by the student. (Refer to specific departmental requirements.)
4. Completion of at least 50 percent of the required units in the concentration and 15 of the last 24 units are required in residence in the School of Business Administration and Economics.
5. Completion of at least 50 semester credit hours in areas other than business administration.
6. Attainment of at least a 2.0 grade point average (C average) in all university work attempted, in all courses taken in the School of Business Administration and Economics, and in the area of concentration.
7. Completion of Math 130, A Short Course in Calculus, or its equivalent.◊
8. Demonstration of proficiency in written communication skills. Students must either pass the College Board Achievement Test in English composition or the College Level Examination Program (CLEP) Subject Examination in English Composition or complete one of the following courses at Cal State Fullerton: English 100, Composition; English 103, Seminars in Writing; or Communications 103, Applied Writing. (Information on the dates offered and the costs of these tests may be obtained from the university Counseling and Testing Center.)

Academic Advisement for Business Administration Students

The School of Business Administration and Economics provides an advisement service for its students. New students are particularly encouraged to consult an adviser in the school's Academic Programs Office to review program and course requirements.

CORE: The business administration and economics courses listed below are required of all students majoring in business administration:

Lower Division	*Units*
Eco 100 The Economic Environment *and*	3
Eco 200 Principles of Economics, *or*	
Eco 210 Principles of Economics (5)	3
Acc 201A,B Elementary Accounting	6
Man 246 Business Law	3
QM 265 Computer Methods in Business and Economics	3
Upper Division:	
Eco 310 Intermediate Microeconomic Theory or Eco 320 Intermediate Macroeconomic Theory*	3
Fin 320 Business Finance	3
Man 340 Behavioral Science for Business	3
Man 341 Organization and Management Theory	3
Mar 351 Principles of Marketing	3
QM 361 Statistical Methods in Business and Economics	3
QM 362 Management Sciences Methods in Business and Economics *or*	3
QM 363 Management Sciences**	3
Man 449 Seminar in Business Policies***	3
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AREAS OF CONCENTRATION FOR MAJORS IN BUSINESS ADMINISTRATION

A student in business administration should select an area of concentration as soon as possible, but not later than the second semester of the junior year and take the required courses in the area.

◊ Students who concentrate in quantitative methods must take Math 150A in lieu of Math 130.

* Management and Quantitative Methods require Economics 310. All other departments require either Economics 310 or 320.

** Students taking quantitative methods as their area of concentration will take QM 363, Management Science.

*** Students taking business economics as their area of concentration will take Economics 410, Government and Business—in lieu of Management 449, Business Policies.

Accounting

301A,B Intermediate Accounting
302 Cost Accounting
308 Federal Income Tax
And at least two of the following courses:
401 Advanced Accounting
402 Auditing
406 Cost Control
407 Integrated Data Processing Systems
408 Problems in Taxation

Economics

310 Intermediate Microeconomic Theory
320 Intermediate Macroeconomic Theory
6 units economics electives, 3 units of which must be 400-level
Management 446, Managerial Economics

Finance

The department offers four primary areas of emphasis: financial management, real estate, securities-investments and insurance. Courses are also offered in personal finance. A finance concentration requires Finance 331, Financial Analysis, plus 15 additional credit hours offered by the Finance Department. The student may choose all courses from one area or may elect to sample several areas. Finance 310, Personal Financial Management, will not count toward the area of concentration.

Financial Management Emphasis: Designed for students interested in the financial organization and operation of financial and business enterprises. Students interested in this area of emphasis are encouraged to include the following courses in their plan of study:

332 Financial Administration
425 Commerical Bank and Institution Management
432 Financial Forecasting and Capital Budgeting
433 Problems in Business Finance
440 Capital and Money Markets

Real Estate Emphasis: Designed for students interested in a broad range of careers in real estate and urban development. Students interested in this option are advised to include the following courses in their plan of study:

350 Principles and Practices of Real Estate*
451 Legal Aspects of Real Estate*
452 Real Estate Finance*
453 Real Estate Valuation*
454 Real Estate and Urban Development*
459 Real Estate Research

Securities-Investments Emphasis: Designed for students interested in securities and investment analysis, money and capital markets, and portfolio management. Students interested in this area of emphasis are encouraged to include the following courses in their plan of study:

340 Security Investments
440 Capital and Money Markets
442 Security Analysis and Portfolio Management

Insurance Emphasis: Designed for students interested in careers in insurance or in applying correct insurance procedures to business and personal affairs. Students interested in this emphasis should include the following courses in their plan of study:

360 Principles of Insurance
460 Social Insurance
461 Risk Management

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* These courses satisfy the California State Real Estate Brokers License Examination requirements. Please contact the Finance Department for futher details.

Management

In consonance with university and school objectives, the major goals of the Management Department are to:

1. Provide students with foundational competence in the utilization of the factors of production.
2. Develop in each student an understanding of the theory and practices needed for successful performance in managerial and staff positions in business, government and the community.
3. Provide students with a knowledge of human values—the ethical, psychological and sociological foundation for human behavior, and the impact of group dynamics, informal organizations, and interpersonal relationships on the administrative process.

Students with an area of concentration in management must choose one of the three following emphases:

Administrative Management Emphasis: Designed for students interested in all aspects of business or in general supervision of organized activity.

342 Production Operations
343 Personnel Management
444 Management of Systems
446 Managerial Economics *or*
447 Management Decision Games
Two other concentration courses to be arranged

Operations Management Emphasis: Designed for students who have interest in and aptitude for managing new projects and production operations in both manufacturing and non-manufacturing.

342 Production Operations
343 Personnel Management
445 Advanced Production Operations
446 Managerial Economics *or*
Management Decision Games
Two other concentration courses to be arranged.

Human Resources Management Emphasis: Designed for students interested in interpersonal relations and group leadership opportunities in all organizations but specifically found in manpower management, small business, industrial relations, hospital and welfare administration, and organizations carrying out social change.

343 Personnel Management
441 Labor-Management Relations
443 Individual, Interpersonal, and Group Dynamics for Management
444 Management of Systems
Two other concentration courses to be arranged.

Marketing

Students with an area of concentration in marketing choose a career path from the following areas: marketing management, marketing research, advertising, sales management, retailing, international marketing or physical distribution.

Brochures and advising on career path selection are available in the department office. In addition to Marketing 351, all students will take 18 hours in marketing.

Advertising Management

354 Principles of Advertising
379 Marketing Research Methods
454 Advertising Management
459 Marketing Problems
470 Consumer Behavior
One elective

Marketing Management

354 Principles of Advertising *or*
356 Creative Motivation in Marketing *or*
470 Consumer Behavior
357 Industrial Marketing *or*

457 Quantitative Techniques in Marketing
459 Marketing Problems
Two electives

Marketing Research
379 Marketing Research Methods
470 Consumer Behavior
479 Research Problems in Marketing
459 Marketing Problems
Two electives

Physical Distribution
354 Principles of Advertising *or*
356 Creative Motivation in Marketing *or*
470 Consumer Behavior
358 Physical Distribution
451 Management of Physical Distribution Operations
457 Quantitative Techniques in Marketing
459 Marketing Problems
One elective

Retailing
352 Principles of Retailing
354 Principles of Advertising
379 Marketing Research Methods
456 Marketing Problems in Retail Sector
459 Marketing Problems
470 Consumer Behavior
No electives

Sales Management
356 Creative Motivation in Marketing
379 Marketing Research Methods
455 Management of the Sales Force
459 Marketing Problems
470 Consumer Behavior
One elective

International Marketing
354 Principles of Advertising *or*
356 Creative Motivation in Marketing *or*
470 Consumer Behavior
379 Marketing Research Methods
458 International Marketing
459 Marketing Problems
Two electives

Quantitative Methods
The objective of the Quantitative Methods Department is to prepare the student to utilize quantitative information and methods effectively in evaluating alternatives and making decisions. Emphasis is placed on the theory and practice of quantitative methods, especially those topics contributed by the disciplines of computer science, operations research and statistics.
Students with a quantitative methods concentration are required to take Math 150A, Calculus,* QM 170, Introduction to Quantitative Methods, in lieu of Math 150B, QM 461, Advanced Statistics, and at least 15 units in a study plan approved by the student's adviser. These courses may include any of the following, as well as approved courses in other disciplines.

Computer Science
364 Computer Logic and Programming
382 Information Structures and Machine Language Programming
446 Computer Programming Theory

*Quantitative methods concentration students shall substitute QM 363 for QM 360 in their business core. Math 150A may be taken with the credit/no credit option.

464 Information Retrieval and Natural Language Processing
480 Information Theory and Cybernetics
482 Introduction to Discrete Structures
484 Computer Assisted Instruction
485 Programming Systems and Programming Language Processing
486 Automata Theory
487 Artificial Intelligence
488 Introduction to Pattern Recognition

Operations Research
448 Digital Simulation in Business and Economics
465 Linear Programming
466 Nonlinear Programming
470 Conflict, Bargaining and Cooperation
490 Stochastic Process Models in Business and Industry

Statistics
367 Statistics and Society
420 Applied Statistical Forecasting
422 Surveys and Sampling Design and Applications
467 Statistical Quality Control
469 Reliability Statistics
475 Multivariate Analysis

A student majoring in quantitative methods may also elect to minor in computer science. For details concerning the Bachelor of Science in Computer Science and the minor in computer science, see "Cross-disciplinary University Programs" elsewhere in this catalog.

BUSINESS EDUCATION

Students who wish to major in business administration in preparation for a career as a secondary school teacher in business subjects must meet the requirements of the School of Business Administration and Economics and the secondary school teacher education program including the requirements for the proper credential as outlined in this catalog.

The requirements for a major in this area are as follows:

1. The core requirements as set forth for all business administration majors.
2. Completion of 18 hours of required coursework in one of the six areas of concentration:
   a. Accounting
   b. Economics
   c. Finance
   d. Management
   e. Marketing
   f. Quantitative methods
3. Meet the school's minimum requirement of 60 credit hours in business administration and economic courses.
4. A maximum of 12 credit hours in the secretarial field, including those applied as electives, may count toward the degree in business administration and economics.**
5. Completion of at least 50 credit hours in areas outside business administration and economics.

Education courses required for a credential will be detailed by the School of Education.

The requirements for a minor in this area are as follows:

	Units
Eco 100 The Economic Environment *and* Eco 200 Principles of Economics *or*	
Eco 210 Principles of Economics	5-6
Acc 201A,B Elementary Accounting	6
QM 264 Computer Programming	2
One of the following:	
Man 246 Business Law	3

**The university does not offer work in secretarial training, typewriting, or business machines, but will accept some transfer work in these areas taken at other institutions.

QM 265 Computer Methods in Business and Economics	3
Fin 320 Business Finance	3
Mar 351 Principles of Marketing	3
Educ 442 Teaching Business in Secondary School	3
◊Electives	6
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MASTER OF BUSINESS ADMINISTRATION

Applicants, as well as continuing students, should read carefully "The Program of Master's Degrees" in this catalog and consult the *Graduate Bulletin,* particularly the "Steps in the Master's Degree Program."

Programs of Study

The School of Business Administration and Economics offers two plans for the M.B.A. degree.

Plan I is a broad, integrated program designed primarily for students with an undergraduate degree in a field other than business administration.

Plan II is an integrated program allowing some concentration in an area of specialization. Under this plan the student is required to complete 12 units in an area of concentration. It is designed primarily for students with baccalaureate degrees in business administration.

The procedural steps for admission to, and completion of, the Master of Business Administration degree follow:

Admission

A. Regular admission into the M.B.A. program (i.e., classified standing) of the School of Business Administration and Economics, requires development of an approved study plan and the following:
   1. A bachelor's degree from a fully accredited college or university.
   2. A combination of grade-point average (GPA) and test score on the Admission Test for Graduate Study in Business (ATGSB) according to the following rules:
      a. An overall undergraduate GPA of at least 2.5 plus a minimum ATGSB score of 450 *or* a combination of GPA and ATGSB scores according to the formula: 200 times overall undergraduate GPA plus ATGSB score equals 1000 or over *or*
      b. At least a 2.75 GPA on the last 50 percent of coursework taken for the bachelor's degree plus a minimum ATGSB score of 450 *or* a combination of GPA and ATGSB score according to the formula: 200 times GPA on the last 50 percent of coursework taken* plus ATGSB score equals 1025 or over, *or*
      c. At least a 3.0 GPA on the last 60 sequential semester units of coursework plus a minimum ATGSB score of 450** *or* a combination of GPA and ATGSB scores according to the formula: 200 times GPA on the last 60 sequential semester units of coursework** plus ATGSB score equals 1050 or over.

B. Admission into the M.B.A. program (conditionally classified standing) of the School of Business Administration and Economics:
   An applicant who does not meet the entrance requirements for Classified standing, and/or who has deficiencies in a prerequisite preparation which in the opinion of the appropriate school authority can be met by additional preparation, including qualifying examinations, may be considered for admission into the M.B.A. degree program with conditionally classified graduate standing. Such students, at a minimum, must meet the general university admission requirements for graduate standing. Interested students should contact the associate dean, academic programs, School of Business Administration and Economics, for additional information.

C. *For Plan II,* the equivalent to an undergraduate degree in business from Cal State Fullerton is required in addition to other requirements listed in A and B above.

◊A maximum of six units of secretarial courses, including those applied as electives, may count toward the minor in business education.

* All work within any given quarter or semester must be included even though that will result in more than 50 percent.

** All work within any given quarter or semester must be included even though that will result in more than 60 semester units. The units to be included in the last 60 semester units may come only from the following: (1) Work taken in post-baccalaureate status during the last seven years towards fulfilling M.B.A. coursework requirements; (2) units taken under a prescribed remedial program agreed to by the associate dean, academic programs, School of Business Administration and Economics; (3) units earned prior to the bachelor's degree.

The courses in the major are to be no more than seven years old and are to have at least a 3.0 grade-point average. Courses with grades less than C must be repeated. In addition the Plan II student will be required to successfully complete the Business Foundation Examination which covers the core requirements in the school's undergraduate degree in business.

PLAN I

CURRICULUM

First-Year Program

Acc 510 Financial Accounting
Acc 511 Managerial Accounting
Eco 514 Principles and Problems of Economic Policy, A
Eco 515 Principles and Problems of Economic Policy, B
Fin 517 Managerial Finance
Man 516 Organizational Theory and Management of Operations
Man 518 Legal Environment of Business
Mar 519 Marketing Management
QM 512 Quantitative Business Decision Techniques, A
QM 513 Quantitative Business Decision Techniques, B

Note: Upon completion of the first year curriculum, Plan I students are required to successfully complete the Business Foundation Examination.

Second-Year Program

Acc 521 Seminar in Administrative Accounting
Eco 522 Comparative Economics Seminar
Fin 523 Seminar in Corporate Financial Management
Man 524 Seminar in Organizational Behavior and Administration
Mar 525 Seminar in Marketing Problems
QM 526 Quantitative Business Decision Analysis *or*
QM 560 Operations Research
BAE 596 M.B.A. Management Game
Two electives at the 400- or 500-level

PLAN II

CURRICULUM

(A minimum of 24 of the 30 units required for the degree must be at the 500 level.)

Required Courses

Acc 511 Managerial Accounting* *or*
Acc 521 Seminar in Administrative Accounting
Eco 515 Principles and Problems of Economic Policy, B *or*
Eco 522 Comparative Economics Seminar
Fin 523 Seminar in Corporate Financial Management
Man 524 Seminar in Organizational Behavior and Administration
Mar 525 Seminar in Marketing Problems
QM 526 Quantitative Business Decision Analysis *or*
QM 560 Operations Research

Concentration

Each student shall elect an area of concentration of at least 12 units to be approved by the department chair concerned, or his designee within the department, and the associate dean, academic programs. Concentrations offered in Plan II are: accounting, finance, international business, management, marketing and quantitative methods.

Terminal Evaluation

A terminal evaluation is required for the degree. Departmental requirements vary, however, and the student should check with his department chair. In many cases students take Business Administration 596, M.B.A. Management Game, to satisfy this requirement, thus increasing the number of units offered for the degree from 30 to 33. The terminal evaluation may be repeated once during a two-year period.

For further information, consult the School of Business, Administration and Economics Announcement and/or the associate dean, academic programs, in the School of Business Administration and Economics.

*Students who have credit in cost accounting may not receive credit for Accounting 511.

BACHELOR OF ARTS IN ECONOMICS

The economics major is designed to prepare students for positions in business, education and government, and for graduate work in economics and related disciplines.

Requirements

Required of all students for the degree:

1. Completion of 41 semester credit hours of courses in economics and business administration of which 27 semester credit hours must be in upper division courses. At least 15 semester hours must be completed in residence in the School of Business Administration and Economics.
2. Completion of the major course requirements for economics majors as listed below. Students in economics are required to take Quantitative Methods 265 or equivalent as prerequisite to Quantitative Methods 361.
3. Completion of at least 60 credit hours in areas other than economics and business administration. Of these 60 semester credit hours the department suggests that special attention be placed on related social sciences, particularly political science, sociology, history and geography, as well as philosophy and the fields of quantitative methods and mathematics. A list of suggested courses is available in the Economics Department office.
4. Students must attain at least a 2.0 grade-point average in all college or university work attempted, and in all courses in the School of Business Administration and Economics.

Business administration and economics courses required of all students majoring in economics are listed below:

Lower Division	*Units*
(Students who have done exceptionally well in high school economics may wish to consult the policy, appearing elsewhere in this catalog, on challenge examinations.)	
Eco 100 and 200 or 210 Principles of Economics	5-6
Math 130, A Short Course in Calculus *and* Acc 201A,B Elementary Accounting; *or* Math 150A,B Analytic Geometry and Calculus and Acc 201A	10-11
QM 265 Computer Methods in Business and Economics	3
Total	18-20
Upper Division	
Eco 310 Intermediate Microeconomic Theory	3
Eco 320 Intermediate Macroeconomic Theory	3
Eco 420 Money and Banking	3
QM 361 Statistical Methods in Business and Economics	3
Fifteen hours of upper division electives in economics approved by the student's adviser	15
Total	27

MINOR IN ECONOMICS

A minor in economics may be achieved by taking the following courses:

	Units
Eco 100 and 200 *or* 210 Principles of Economics	5-6
Eco 310 Intermediate Microeconomic Theory	3
Eco 320 Intermediate Macroeconomic Theory	3
Upper division economics electives	9
Total	20-21

MASTER OF ARTS IN ECONOMICS

The Master of Arts in Economics is a program designed both for candidates who will be studying full time and for those employed full time or part time while working for the M.A. degree. The program is separated into two parts, the core requirements and the electives. The purpose of the core is to provide rigorous training fundamental to the discipline of economics, yet eminently useful to the candidate, whatever his special area of interest. It represents a planned sequence of work, progressing from economic theory (Economics 502

and 503) through methodology (Economics 505) to the seminar (Economics 506) in which the student prepares a project applying what he has learned in theory and method to an area of his special interest. The purpose of the electives is to provide the student an opportunity to broadly cover his special area of interest in an interdisciplinary way.

The procedural steps for admission to, and completion of, the Master of Arts in Economics follow:

Admission Requirements (Classified Standing)

1. Apply for admission to the university and declare the objective to be a Master of Arts in Economics degree. This must be accomplished at the Office of Admissions before the dates established in the university calendar.
2. Contact the academic programs office of the School of Business Administration and Economics and the graduate coordinator of the Department of Economics to secure informal advisement. The informal advisement should occur at least three weeks prior to your first registration, but in any event during the first semester of work.
3. Possess a baccalaureate degree from an accredited institution with an overall grade-point average in all undergraduate work of not less than 2.5.
4. Satisfactory level of performance on the Graduate Record Examination (verbal and quantitative), aptitude only.
5. Preparation of a study plan in consultation with the graduate adviser and approval.
6. Completion of an application for classified standing form.
7. Satisfactory completion of program prerequisites listed below.

Prerequisites

Acceptance into the program requires completion of the following prerequisite courses, or equivalent:

1. *For students without an undergraduate major in economics* (a grade-point average of not less than 3.0 in the following prerequisites is required):

	Units
Principles of Economics	6
Calculus	4-5
Intermediate Microeconomic Analysis	3
Intermediate Macroeconomic Analysis	3
Statistics (analytical)	3
Money and Banking	3
Total	22-23

2. *For students with an undergraduate major in economics:* 24 semester units of work in economics or related courses (e.g., statistics), including one semester of calculus, with a minimum grade-point average of 3.0. The 24 units must include the following courses or their equivalent, with a minimum grade-point average of 3.0 in each course: Intermediate Microeconomic Analysis, Intermediate Macroeconomic Analysis, Statistics (analytical), Money and Banking.

Units in economics or related courses	24
Calculus	4-5
Total	28-29

Admission Requirements (Conditionally Classified Standing)

An applicant who does not meet the entrance requirements for classified standing, and/or who has deficiencies in a prerequisite preparation which in the opinion of the appropriate school authority can be met by additional preparation, including qualifying examinations, may be considered for admission into the Master of Arts in Economics program with conditionally classified graduate standing. Such students, at a minimum, must meet the general university admission requirements for graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted. Interested students should contact the graduate adviser, Department of Economics.

Program of Study

1. A core of 12 graduate units in economics is required:

		Units
Eco 502	Advanced Microeconomic Analysis	3
Eco 503	Advanced Macroeconomic Analysis	3
Eco 505	Methodology in Economic Research Seminar	3
Eco 506	Seminar in Micro- and Macroeconomic Applications (*project* required)	3
	Total	12

2. In addition to the core, 18 units of electives are required as follows:
   a. Eighteen units of electives at the 400 or 500 level, with a minimum of six and a maximum of 12 in a field outside of but related to economics.
   b. At least nine units of electives must be at the 500 level, six of which must be in economics. In this regard, Economics 596 is specifically designed to serve as an elective in this program. The topic of the course rotates every semester and it may be repeated for credit. The topics offered include international monetary systems, comparative economic systems, history of economic thought, economic history, and advanced topics in micro- and macrotheory.
   c. If nine or more units are taken in fields outside of economics, at least three units must be at the 500 level.

For further information, consult the School of Business Administration and Economics Announcement and/or the associate dean, academic programs, in the School of Business Administration and Economics. See also "The Program of Master's Degrees" elsewhere in this catalog, and the *Graduate Bulletin*.

ACCOUNTING COURSES

201A,B Elementary Accounting (3,3)
Prerequisite: Accounting 201A must be taken before 201B. Accounting concepts and techniques essential to the administration of a business enterprise; accounting as a process of measuring and communicating economic information; analyzing and recording financial transactions; preparation of financial statements; analysis and interpretation of financial statements; introduction to manufacturing accounts and reports; the interaction of accounting with the areas of finance, quantitative methods, interpersonal relations, motivation, and data-information systems.

301A,B Intermediate Accounting (3,3)
Prerequisites: Accounting 201B; 301A must be taken before 301B. The quantification, recording, and presentation of balance sheet and income statement items with particular emphasis on the corporate type of organization; statement of application of funds; cash flow statement; basic concepts of accounting theory; interpretation of financial statements.

302 Cost Accounting (3)
Prerequisite: Accounting 201B. The development of accounting information for management of manufacturing enterprises; cost records; cost behavior and allocation; standard costs; and an introduction to cost control.

303 Governmental Accounting (3)
Prerequisite: one course in accounting. A consideration of the accounts and reports of nonprofit institutions, municipalities, state and federal governments; organization, procedures, budgets.

304 Managerial Accounting (3)
Prerequisite: Accounting 201B. Intended for students whose area of concentration is not accounting. Analysis, interpretation, and application of accounting information for managerial decision making; budgets and budgetary control; special-purpose reports; differential cost analyses.

307 Distribution Costs (3)
Prerequisites: Accounting 201B and Marketing 351. The development of quantitative measures for marketing activity; costs of distributing through different channels of distribution, advertising vs. personal selling, and movement activities; development of sales budgets, standard costs, and the analysis of actual performance in the light of budgets and standards.

308 Federal Income Tax (3)
Prerequisite: Accounting 201B. Basic consideration of the history, theory, and accounting aspects of federal income taxation.

401 Advanced Accounting (3)
Prerequisite: Accounting 301B. A study of partnerships, statements for special purposes, receiverships, consolidated financial statements, branch accounting and foreign exchange.

402 Auditing (3)
Prerequisites: Accounting 301B and 302. Nature of an audit, auditing standards and procedures, audit reports; professional ethics and responsibilities of the independent public accountant; introduction to internal auditing.

406 Cost Control (3)
Prerequisite: Accounting 302. A study of current and persistent problems in cost accounting; theories of cost allocation and absorption; flexible budgeting; responsibility accounting; and distribution cost control.

407 Integrated Data Processing Systems (3)
Prerequisites: Accounting 201B and QM 264 or 265. Integrated systems for the collection, processing, and transmission of information; aspects of the information service function; feasibility studies; case studies of operating systems.

408 Problems in Taxation (3)
Prerequisite: Accounting 308. Research in problems of taxation with emphasis on income taxes as they relate to corporations, partnerships and fiduciaries.

409 C.P.A. Problems and Theory (3)
Prerequisite: Accounting 401, or consent of instructor. Selected problems and questions as found in the uniform C.P.A. examination; preparation, analysis and revision of financial statements; assets, liabilities and ownership equities; income determination; cost accounting; governmental and institutional accounting; accounting theory.

497 Business and Economic Research (3)
(Same as Business Administration 497)

499 Independent Study (1-3)
Prerequisites: senior standing and approval by department chair. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

502 Seminar in Accounting Theory (3)
Prerequisites: Accounting 301B, classified M.B.A. status and consent of instructor. The concepts and theory of accounting; the effects of professional, governmental, business, and social forces on the evolution of accounting theory.

503 Seminar in Contemporary Financial Accounting Problems (3)
Prerequisites: Accounting 502 and classified M.B.A. status. A critical examination of the current problems and areas of controversy in financial accounting.

504 Seminar in Contemporary Managerial Accounting Problems (3)
Prerequisites: Accounting 511 or 302, classified M.B.A. status and consent of instructor. A critical examination of the current problems and areas of controversy in managerial accounting.

505 Seminar in Auditing (3)
Prerequisites: Accounting 402 and classified M.B.A. status. Auditing theory and practices; professional ethics; auditing standards; SEC and stock exchange regulations; auditor's legal liability; statement trends and techniques.

507 Seminar in Accounting Information Systems (3)
Prerequisites: Accounting 407 or equivalent, and classified M.B.A. status. Case studies of large scale accounting systems used by organizations such as universities, banks, and industrial corporations. Applications of conceptual knowledge of system components and controls learned previously to actual operating systems.

508 Seminar in Tax Planning (3)
Prerequisites: Accounting 308 or consent of instructor and classified M.B.A. status. A review of substantive provisions of federal tax law with an emphasis on tax planning from a corporate viewpoint; case studies of the effect of federal tax law on business decisions.

510 Financial Accounting (3)
Prerequisite: classified M.B.A. status. The basic fundamentals of accounting as they apply to the accumulation, organization, and interpretation of financial and quantitative data

relevant to the activities of the corporate business enterprise. The interaction of accounting wiiiith the areas of finance, interpersonal relations, motivation, and data-information systems.

511 Seminar in Managerial Accounting (3)

Prerequisites: Accounting 201B or 510, consent of instructor and classified M.B.A. status. Accounting information for management decision; elements of manufacturing, distribution and service costs; cost systems; standard costs; cost reports; cost analysis.

518 Seminar in International Accounting (3)

Prerequisites: Accounting 201A, B or equivalent and classified M.B.A. status. Comparative analysis of accounting principles and practices, current problems of international financial reporting, accounting planning and control for international operations with emphasis upon multinational companies.

521 Seminar in Administrative Accounting (3)

Prerequisites: Accounting 302, or 304, or 511; classified M.B.A. status; and consent of instructor. Integrative aspects of accounting, financial, and quantitative data for managerial decision-making; long-term, short-term profit planning; budgetary control; cost analysis; financial analysis and planning; taxation; and transfer pricing.

597 Project (3)

Prerequisite: classified M.B.A. status. Directed independent inquiry.

598 Thesis (3—6)

Prerequisite: classified M.B.A. status. Directed independent inquiry. Student will select and have approved a thesis topic, show evidence of original research, and must present himself for a defense of the thesis before a faculty committee.

599 Independent Graduate Research (1—3)

Prerequisites: classified M.B.A. status, consent of instructor, and approval by department chair. May be repeated for credit.

BUSINESS ADMINISTRATION COURSES

495 Internship Experience (1-3)

Prerequisites: junior standing, academic qualification and consent by the internship adviser. Provides planned and supervised work experience in business, industry and public agencies, extending the student's learning experience beyond the classroom. Number of units granted is determined by number of hours worked per week. Credit/no credit up to a maximum of six units.

497 Business and Economic Research (3)

Prerequisites: business administration core, senior standing and consent of instructor. Application of research methods: selection and identification of a problem, determining a method of approach, collection and analysis of relevant data, eliciting conclusions and solutions.

596 M.B.A. Management Game (3)

Prerequisite: classified M.B.A. status and within six units of completion of the M.B.A. study plan. This course serves as the required terminal evaluation for M.B.A. candidates. An integrated approach to policy decisions using the principles and practices of the several disciplines in the M.B.A. program.

ECONOMICS COURSES

100 The Economic Environment (3)

An introduction to economics with application to problems such as unemployment, poverty, discrimination, inflation, gold and foreign exchange, pollution, urban decay, defense, war, and industrialization.

111 Economics of Utopia (3)

An economic analysis of utopian thought and attempts to create ideal economic systems. Emphasis is placed on the importance of economic structure and environment to the performance of utopian experiments.

200 Principles of Economics (3)

Prerequisite: Economics 100. A survey of basic economic theory. Includes the central problem of allocating resources, the distribution of income, unemployment, inflation, and the role of markets and public policies solving these problems.

210 Principles of Economics (5)
Prerequisite: open only to junior transfers. (Duplicates 100 and 200). An introduction to the principles of economic analysis and policy including the central problem of scarcity, basic economic institutions of the United States, resource allocation and income distribution, economic stability and growth, and the role of public policy.

301 Economic Principles (3)
Prerequisites: Math 150A,B and QM 265 or equivalents. An introduction to economic principles for students who have a strong quantitative background, and who have a special interest in the technical areas of engineering and computer science. Not open to students majoring in business administration or economics.

310 Intermediate Microeconomic Analysis (3)
Prerequisite: Economics 100 and 200 or 210. An analysis and evaluation of (1) rational decision-making behavior of consumers and firms and (2) price and output determination in markets; with special emphasis placed on the use of cases and problems to illustrate the application of the analysis to the contemporary scene.

320 Intermediate Macroeconomic Analysis (3)
Prerequisites: Economics 100 and 200 or 210. The explanation and evaluation of the determinants of the level and fluctuations of such economic aggregates as national income and employment, with stress placed on the use of problems involving the application of analytical tools to modern macroeconomic issues.

330 Comparative Economic Systems (3)
Prerequisite: Economics 200 or 210 or 100 plus consent of instructor. A study of alternative economic systems with regard to their theoretical foundations, actual economic institutions, and achievements and failures. The contrast between socialist and capitalist systems will be emphasized.

331 The Soviet Economy (3)
Prerequisite: Economics 200 or 210. An analytical evaluation of Soviet economic development including the structure and performance of the Soviet economy and problems of planning and control.

332 Economic Problems of Asia (3)
Prerequisite: Economics 100 or 210. Analysis of the natural resources, population, agricultural, industrial, transportation, communications, monetary, banking, etc. problems of Asia i.e. China, Japan, etc. and the Asian subcontinent. The relations of non-economic problems to the economic are considered in detail.

333 Economic Development: Analysis and Case Studies (3)
Prerequisite: Economics 100 or 210. An examination of the processes of economic growth with special references to developing areas. Considers capital formation, resource allocation, relation to the world economy, economic planning and institutional factors, with appropriate case studies.

334 Economics of Poverty, Race and Discrimination (3)
Prerequisite: Economics 100 or 210. An economic analysis of the problems and policies dealing with poverty, race and discrimination. A field investigation or project is required of each student.

350 American Economic History (3)
Prerequisite: Economics 100 or 210. The development of American economic institutions with special emphasis on economic problems, economic growth, and economic welfare.

351 European Economic History (3)
Prerequisite: Economics 100 or 210. The evolution of European economic institutions and their relation to the development of industry, commerce, transportation, and finance in the principal European countries.

361 Urban Economics (3)
Prerequisite: Economics 100 or 210. Theory and analysis of the urban economy, urban economic problems and policy.

365 Public Finance (3)
Prerequisite: Economics 200 or 210. A study of government finance at the federal, state, and local levels with particular reference to the impact of taxation and spending on resource allocation, income distribution, stabilization and growth.

370 Economics of Research, Development and Technological Change (3)
Prerequisite: Economics 100 or 210. Examination of the importance of R&D and technological change in the economy; concepts, issues, and major figures in the study of economics of technology; analytical techniques for the assessment of technological change; and evaluation of the impacts of technological change.

391 The Modernization of Russian Society, 1880-1939 (3)
Prerequisites: Economics 100 or 210. An interdisciplinary seminar on the historical, political, cultural and economic forces promoting and impeding modernization under both the Tsarist and Communist regimes. Course is team taught by an instructor from the Economics Department and the History Department.

410 Government and Business (3)
Prerequisite: Economics 310. An economic study of business organization, conduct and performance followed by an analysis of the rationale and impact of public policy on various segments of business and business activities, including the regulated industries, sick industries and antitrust policy.

411 International Trade (3)
Prerequisite: Economics 310. An examination of the theory of international trade and the means and significance of balance of payments adjustments, with an analysis of past and present developments in international, commercial and monetary policy.

412 Labor Economics (3)
Prerequisite: Economics 310. An analysis of the basic economic and institutional influences operating in labor markets. Considers relevant aspects of wage differentials, unemployment, and problems of disadvantaged labor market groups.

420 Money and Banking (3)
Prerequisite: Economics 320. A study of the money supply process and the impact of monetary policy on economic activity.

421 Monetary and Fiscal Policy (3)
Prerequisite: Economics 320. A study of the techniques of monetary and fiscal policy and an appraisal of their relative roles in promoting economic stability and growth.

440 Introduction to Econometrics (3)
Prerequisites: Economics 200 or 210 or 301 *and* QM 361 or equivalent. Development of advanced statistical methods and their application in economic research. Advanced concepts in model building; development of different types of economic models. The use and effect of economic models in public policy.

441 Introduction to Mathematical Economics (3)
Prerequisites: Economics 200 or 210 or 301 *and* Math 130 or equivalent. Selected topics in economic theory, drawn from microeconomics and macroeconomics. Content varying from year to year but with emphasis on constrained optimization problems and rational decision-making.

450 History of Economic Thought (3)
Prerequisites: Economics 310 or 320. A study of the development of economic thought as reflected in the evolution of major schools of thought and of leading individual economists as they influenced economic thought and policy.

497 Business and Economic Research (3)
(Same as Business Administration 497)

499 Independent Study (1-3)
Prerequisites: Economics major or concentration, senior standing and approval by the department chair. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

502 Advanced Microeconomic Analysis (3)
Prerequisites: Economics 100 and 200 or 210, and 310; classified status in the M.A. in Economics program or consent of instructor. An advanced theoretical formulation of the principles of the determination of prices and outputs of goods and productive services in a market system. Topics include: consumer choice, demand, production, cost, the equilibrium of the firm and the market and distribution.

503 Advanced Macroeconomic Analysis (3)
Prerequisites: Economics 100 and 200 or 210, and 320; classified status in the M.A. in Economics program or consent of instructor. Advanced theory of the determination of employment, fluctuations of real and money income and the forces underlying economic growth.

505 Methodology in Economic Research Seminar (3)
Prerequisites: Classified status in the M.A. in Economics program or consent of instructor. Applications of statistical and econometric techniques in economic analysis. Emphasis is on practical problems in empirical research. Topics include statistical analyses of demand functions, consumption functions, cost and production functions, and models of national income determination. Practical problems involved in using multiple regression analysis are examined.

506 Seminar in Micro- and Macroeconomic Applications (3)
Prerequisites: Economics 502, 503 and 505; classified status in the M.A. in Economics program or consent of instructor. Complements the study of methodology in economic research. Students select approved topics and via independent investigation, seminar presentation and critique develop their analytical and research abilities, culminating with an acceptable paper.

511 Economic Problems and Public Policy (3)
Prerequisites: Economics 514, 515 and classified M.B.A. status. Seminar devoted to an examination of the nature and implication of the major economic problems facing the economy and an evaluation of current and alternative policies for their solution. Problems considered will include price level stabilization, balance of payments equilibrium, economic growth, and cyclical and technological unemployment. (Not open to Economics M.A. candidates.)

514 Principles and Problems of Economic Policy—Part A (3)
Prerequisite: Classified M.B.A. status. An intensive study of micro- and macroeconomic theory and policy within the framework of a market system. (Not open to Economics M.A. candidates.)

515 Principles and Problems of Economic Policy—Part B (3)
Prerequisites: Economics 514 and classified M.B.A. status. An integration of modern microeconomic theory, optimization techniques, and microeconomic policy. Topics include: mathematical programming, consumer choice, production theory, firm and market equilibrium, and government regulation. (Not open to Economics M.A. candidates.)

522 Comparative Economics Seminar (3)
Prerequistes: Economics 514 and 515 and classified M.B.A. status. A comparative study of various analytical and prescriptive approaches to economic problems of scarcity, development, fiscal and monetary policy, planning and poverty. (Not open to Economics M.A. candidates.)

528 Seminar in International Economics (3)
Prerequisites: Economics 514 or equivalent, consent of instructor or classified M.B.A. status. A systematic survey of international monetary and international trade theories and policies. Includes analyses of international monetary reform, barriers to trade, economic integration, economic development and international capital flows.

595 Modern Capitalism (3)
(Same as Business Administration 595)

596 Selected Topics in Economic Analysis and Policy (3)
Prerequisites: Economics 200 or 210, 310 and 320; classified status in the M.A. in Economics program or consent of instructor. Seminar: Selected topics in economic analysis and policy will be covered in depth, with special emphasis on contemporary research and materials. Topics may include international monetary systems, comparative economic systems, history of economic thought, economic history, and advanced topics in micro- and macrotheory. May be repeated for credit.

597 Projects (3)
Open to qualified graduate students. Directed independent inquiry.

598 Thesis (3-6)
Open to qualified graduate students. Directed independent inquiry. Student will select and have approved a thesis topic, show evidence of original research, and must present himself for a defense of the thesis before a faculty committee.

599 Independent Graduate Research (1-3)
Prerequisites: graduate standing, consent of instructor and approval by department chair. Open to qualified graduate students desiring to pursue independent inquiry. May be repeated for credit.

FINANCE COURSES

310 Personal Financial Management (3) (Formerly Finance 333)
Financial problems of the household in allocating resources and planning expenditures. Consideration of housing, insurance, installment buying, medical care, savings and investments. (May not be used to fulfill the area of concentration requirement in finance.)

320 Business Finance (3) (Formerly Finance 330)
Prerequisite: Accounting 201B. Financing business enterprises; financial planning and control; analysis of alternative sources and uses of combinations of short-, intermediate- and long-term debt and equity. Cost of capital. Study of capital investment decisions; capital budget analysis and valuation; working capital and capital structure management.

331 Financial Analysis (3)
Prerequisite: Finance 320. Development of techniques for internal financial control and their application to business situations. Capital costs and optimal capital investment decisions. Budgets and forecasts for projection of long-term profitable operations. Analysis of current financial models. Group problems and case studies.

332 Financial Administration (3)
Prerequisite: Finance 320. Cost of cash, accounts receivable and inventories of each asset. Sources of short term funds and interchange of alternative short term liabilities as a means of controlling costs. Cash flow analysis, funds flow analysis.

340 Security Investments (3) (Formerly Finance 335)
Prerequisites: Finance 320 and QM 265 or consent of instructor. Principles underlying the analysis, selection and management of securities; characteristics of securities, valuation, trading methods, role of mutual funds and other institutions; computerized statement analysis and portfolio selection methods; a computer securities game is played by members of the class.

350 Principles and Practices of Real Estate (3) (Formerly Finance 336)
Survey of urban real estate principles and practices; structure and growth of cities; economic implication to real estate markets. Trends and factors affecting real property values, real estate financing and real estate law. Integrative cases and projects. Study of current urban models used in urban development. Group problems and case studies.

360 Principles of Insurance (3) (Formerly Finance 334)
Principles of life, casualty and liability insurance, individual and group insurance programs; methods of establishing risks and rates.

425 Commercial Bank and Financial Institution Management (3)
Prerequisite: Finance 331. Application of analytical techniques to the solution of financial institution problems. Major financial intermediaries and the broad range of decision-making problems they face. Regulation and its effect on management operations. Group problems and case studies.

432 Financial Forecasting and Capital Budgeting (3)
Prerequisite: Finance 320. Role of forecasting in financial management; construction and interpretation of economic forecasts for the economy, industry, and the firm; construction and interpretation of financial plans; evaluation of capital acquisition decisions under certainty and uncertainty conditions.

433 Problems in Business Finance (3)
Prerequisite: Finance 331. Comprehensive case studies including group problems of estimating funds requirements, long-term financial planning, controlling and evaluating cash flows, and financing acquisitions and mergers. Group problems and case studies.

440 Capital and Money Markets (3) (Formerly Finance 431)
Prerequisite: Finance 320. Role of capital and money markets in the American economy; markets for new corporate and government issues; secondary markets; interrelation of financial institutions; factors influencing yields and security prices.

442 Security Analysis and Portfolio Management (3) (Formerly Finance 435)
Prerequisite: Finance 340 or consent of instructor. Advanced securities analysis course utilizing computer applications for statement analysis, valuation models, and portfolio selection and management models. The data base utilizes Standard and Poor's "compustat tapes." A simulated portfolio management game is played at the end of the course.

451 Legal Aspects of Real Estate (3) (Formerly Fianance 436)
Prerequisites: Management 246 or equivalent area, Finance 350. Law of real property; types of ownership; titles and estates; transfers of interests; encumbrances; casements; fixtures; land sale contracts; recording; zoning; leases; responsibilities of real estate brokers.

452 Real Estate Finance (3) (Formerly. Finance 437)
Prerequisite: Finance 350 or consent of instructor. Sources and uses of capital in financing real estate transactions. Financial institutions and their effect on credit. Money and capital market conditions and their effect on credit availability and cost. Instruments of real estate finance. Real estate as an investment medium. Group problems and case studies.

453 Real Estate Valuation (3) (Formerly Finance 438)
Prerequisite: Finance 350 or consent of instructor. Theory of real property value, historical development; methods used in urban and rural property appraisals; special purpose appraisals. Group problems, laboratory work as determined by computer terminal availability.

454 Real Estate and Urban Development (3)
Prerequisite: Finance 350. Real estate and urban development deals with factors and influences of urban growth and development. Economic factors as they relate to real estate supply and demand. Location theory and urban growth patterns. Real estate markets.

459 Real Estate Research (3) (Formerly Finance 401)
Prerequisites: Finance 350 and 452 or 453. Group problems, laboratory work as determined by computer terminal availability.

460 Social Insurance (3) (Formerly Finance 439)
Prerequisite: Finance 320. Financial problems and policies in old age pensions, health insurance, unemployment insurance, workman's compensation, and private pension plans.

461 Risk Management (3)
Prerequisite: Finance 360 or consent of instructor. Techniques and structures of risk management; risk planning, control and financing in the business enterprise.

497 Business and Economic Research (3)
(Same as Business Administration 497)

499 Independent Study (1—3)
Prerequisites: senior standing and approval by department chair. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

517 Managerial Finance (3)
Prerequisites: Accounting 510 and classified M.B.A. status. The methodology of financial management including the primary tools for financial analysis, long-term investment decisions, valuation and working capital management.

523 Seminar in Corporate Financial Management (3)
Prerequisites: Finance 517 and classified M.B.A. status. Emphasis in this course is on the analysis of the financial decision-making process through case studies and seminar presentations. Current financial theory and models are utilized.

533 Seminar in Financial Administration (3)
Prerequisites: Finance 523 and classified M.B.A. status. Optimal financing and asset administration; advanced techniques of capital budgeting; application of analytical methods to the administration of the finance function of the business firm.

540 Seminar in Financial Markets (3) (Formerly 534)
Prerequisites: Finance 440 or consent of instructor and classified M.B.A. status. Structure and operation of major financial institutions; portfolio composition, pricecost problems, and market behavior; analysis of financial intermediation and interrelation of financial institutions and markets.

541 Seminar in Investment Management (3) (Formerly 535)
Prerequisites: Finance 442 or consent of instructor and classified M.B.A. status. Problems of investment and portfolio management; concepts of risk evaluation and investment criteria; analysis of interest rate movements; investment valuation and timing; regulation and administrative problems of the industry.

551 Seminar in Real Estate Investment (3) (Formerly 537)
Prerequisites: Finance 320, 350 or equivalent and classified M.B.A. status. Problems of real estate investment; concepts of evaluation and investment criteria; analysis of real property values; real estate development and financing.

570 Seminar in International Financial Management (3) (Formerly 538)
Prerequisites: Finance 517 or consent of instructor and classified M.B.A. status. Focus on the financial problems of the multinational firm. Included are international financing instruments, capital investment decisions, and constraints on the profitability of multinational businesses.

597 Project (3)
Prerequisite: classified M.B.A. status. Directed independent inquiry.

598 Thesis (3—6)
Prerequisite: classified M.B.A. status. Directed independent inquiry. Student will select and have approved a thesis topic, show evidence of original research, and must present himself for a defense of the thesis before a faculty committee.

599 Independent Graduate Research (1—3)
Prerequisites: classified M.B.A. status, consent of the instructor and approval by the department chair. May be repeated for credit.

MANAGEMENT COURSES

246 Business Law (3)
Philosophy, institutions and role of law in business and society, with emphasis on functions of courts and attorneys, case studies in areas of contracts, and on the law relating to sale of goods.

340 Behavioral Science for Business (3)
Prerequisites: general education for social sciences. Study of social and cultural environments of business. Communication, leadership, motivation, perception, personality development, group dynamics and group growth. Covers fundamental aspects of human behavior with implications for organizational design and management practice.

341 Organization and Management Theory (3)
Prerequisites: Economics 200 or 210, or consent of instructor. Administrative processes, organization theories, applications in utility-creating business operations. Planning, control and information systems, measuring and improving effectiveness. Leadership in creating utility. Open to non-business majors.

342 Production Operations (3)
Prerequisites: Management 341 and QM 265. Fundamentals of production systems which combine materials, labor, and capital resources to produce goods or services. Analysis of systems, models and methods for management of production operations. Product and process development. Case studies stress utilization of computer decision models.

343 Personnel Management (3)
Prerequisite: Management 341 or consent of instructor. A study of the personnel function, its activities, and its opportunities. Emphasis upon management's responsibilities for selection, development and effective utilization of personnel. Open to non-business majors.

347 Business Law (3)
Prerequisite: Management 246 or equivalent. Philosophy, institutions and role of law in business relationships, with emphasis on case studies in areas of agency, partnerships, corporations, bankruptcy, unfair competition and trade regulation.

348 Business Law (3)
Prerequisite: Management 246 or equivalent. The philosophy, institutions and role of law in commercial and personal transactions, with emphasis upon case studies in the areas of personal property, bailments, commercial paper, secured transactions, real property, mortgages, trusts, community property, wills, estate administration and insurance.

441 Labor-Management Relations (3)
Prerequisite: Management 341. Impact of labor-management relations upon labor, management, and the public. Proper grievance procedure, collective bargaining and settlement of disputes are among subjects examined.

442 Collective Bargaining and Labor Legislation (3)
Prerequisite: Management 441. Study of effects of federal and state legislation on union and nonunion environments in both private and public sectors. Practicum in collective bargaining procedures. Case studies of recent successful and unsuccessful labor negotiations.

443 Individual, Interpersonal and Group Dynamics for Management (3)
Prerequisites: Management 340, 341 or consent of instructor. Case studies and current literature on human problems of work situations. Focuses on developing self-knowledge; manager motivation; communicator strengths; improving interaction skills; and improving interaction processes in groups. Laboratory work offers practical approach. (2 hours lecture, 3 hours laboratory)

444 Management of Systems (3)
Prerequisites: QM core and other 300 level courses in student's program. Technology for managing business and other enterprises as cybernetic systems. Investigates the design and control of systems appropriate for product, project and program levels of analysis. (2 hours lecture, 2 hours laboratory)

445 Advanced Production Operations (3)
Prerequisites: Management 342 and QM core. Planning and control methodologies for production operations. Quantitative approaches which integrate cost, schedule and technical performance criteria. Collection, evaluation and use of real-time information. Individual and group projects synthesize control systems for actual cases.

446 Managerial Economics (3)
Prerequisites: QM core, Economics 310 and Management 341. A study of relationships of management tools to applied economics and statistics in decision-making process; use of cases and group problems to study the true economic meaning of cost, demand, supply, price, product and competition.

447 Management Decision Games (3)
Prerequisites: business administration core less Management 449, or consent of instructor. A simulation of an oligopolistic industry to provide the student with an opportunity, through group problems, to use statistics and other analytical tools to make managerial decisions in the functional areas of management. (2 hours lecture; 2 hours activity)

449 Seminar in Business Policies (3)
Prerequisites: all other School of Business Administration and Economics core courses and departmental approval. Through analyzing integrative cases from top management viewpoint, students use business and liberal arts training, especially knowledge of business operations, administrative processes, organization theory, and policy formulation. Individual and team efforts.

497 Business and Economic Research (3)
(Same as Business Administration 497)

499 Independent Study (1-3)
Prerequisites: management concentration, senior standing, and approval by faculty sponsor and department chair of proposed statement of work. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

516 Organizational Theory and Management of Operations (3)
Prerequisites: classified M.B.A. status, Accounting 510, Economics 514 and Quantitative Methods 512. Modern organization theory and application in utility creating operations. Planning, control, organizing, directing, communication and information systems, and measures of effectiveness are explored. Business ethics and relationships to society and politics are examined. Graduate discussion and research reports.

518 Legal Environment of Business (3)
Prerequisites: classified M.B.A status and Accounting 510. Philosophy, institutions and role of law in business, with emphasis upon legal implications inherent in business decisions and upon case studies in areas of contracts, sale of goods, agency, partnerships and corporations.

524 Seminar in Organizational Behavior and Administration (3) (Formerly 544)
Prerequisites: classified M.B.A. status, Management 516 and 518 or equivalent. Analysis of human behavior in organization, studies in organizational theories, and administrative action.

541 Seminar in Project Operations Problem Solving (3)
Prerequisites: classified M.B.A. status, Management 516 and 518, or equivalent. A seminar designed to focus attention on application of system analysis and other dynamic techniques to current operations problems. Special projects are used to demonstrate application of concepts.

542 Seminar in Labor Relations (3)
Prerequisites: classified M.B.A. status, Management 516 and 518, or equivalent. Theories and philosophies of union-management relations in modern industrial society with attention to trends in nonindustrial organizations. Issues in collective bargaining, contract administration, labor law, and government regulation. Discussion and analysis of literature.

543 Seminar in Personnel Administration (3)
Prerequisites: classified M.B.A. status, Management 516 and 518, or equivalent. Provides graduate students with opportunities to study cases, problems, and significant personnel administration literature in order to develop a comprehensive understanding of personnel administration and human relations.

548 Seminar in International Management (3)
Prerequisites: classified M.B.A. status, Management 516 and 518, or equivalent. Problems in managerial qualifications and training, political structure within and without the operations, foreign receptivity to United States business, organization and controlling the international firm. Management in selected countries is examined.

549 Seminar in Policy Planning and Administration (3)
Prerequisites: classified M.B.A. status, Management 516 and 518, or equivalent. Planning, implementing and controlling policy strategies to achieve objectives are considered. Executive's role in overall enterprise operations and the firm's resource use are examined and supported by cases, literature and training techniques.

597 Project (3)
Prerequisite: classified M.B.A. status. Directed independent project. Student will select and have approved a project proposal, conduct the project, and prepare a formal analysis and report.

598 Thesis (3-6)
Prerequisite: classified M.B.A. status. Directed independent inquiry. Student will select and have approved a thesis topic, show evidence of original research, and must present himself for a defense of the thesis before a faculty committee.

599 Independent Graduate Research (1-3)
Prerequisites: classified M.B.A. status, consent of instructor and consent of department chair. May be repeated for credit.

MARKETING COURSES

351 Principles of Marketing (3)
Prerequisite: Economics 200. Analysis of how management markets output of the enterprise — and obtains revenue. Covers product management, pricing, promotion, distribution channels. Marketing's role in socioeconomic system is examined from viewpoints of consumer, management and government.

352 Principles of Retailing (3)
Prerequisite: Marketing 351. Covers problems retailers face such as store location, store design and layout, what goods should be purchased, how to: obtain sales volume, plan operations, control the enterprise, and react to competitors. Current problems in retailing will be examined.

353 Marketing Administration (3)
Prerequisite: Marketing 351. Major problems facing the marketing executive, including marketing organization, planning and forecasting, market analysis, budgeting, product policy, pricing, advertising and sales promotion, administration of the sales force.

354 Principles of Advertising (3)
Prerequisite: Marketing 351. The management of the advertising function, including the role of advertising in marketing strategy, budgetary considerations, allocation among media, measurement of effectiveness, administration and control, and its economic and social implications.

355 Credit and Credit Administration (3)
Prerequisite: Marketing 351. The general nature and functions of credit, credit instruments; the management of the credit department; sources of credit information; acceptance of credit risk; establishment of credit limits; and the problem of collections.

356 Creative Motivation in Marketing (3)
Prerequisite: Marketing 351. Salesmanship, in the very broad context, is persuading people to do what you want them to do. A fundamental managerial skill. Relevant principles of behavior are applied to the persuasion process.

357 Industrial Purchasing (3)
Prerequisite: Marketing 351. The principles and practices of purchasing for industrial organizations. Major buying policies, sources of materials, quantity and quality considerations, and the relation to production cost.

358 Physical Distribution (3)
Prerequisites: Marketing 351, QM 265. Introduction to the physical distribution system and its element — packaging, transporation, warehousing and inventory management. Analysis of physical distribution practices and problems leading to improved system design and effectiveness.

379 Marketing Research Methods (3) (Formerly 452)
Prerequisities: Marketing 351 and QM 361. Introduction to marketing research process: problem formulation, identifying data sources, selecting data collection and analysis techniques, preparing research reports. Emphasis placed upon selecting marketing problems for research. Lecture-discussion, cases. (3 hours lecture, 1 hour activity).

451 Management of Physical Distribution Operations (3)
Prerequisites: Marketing 358, Finance 330, QM 361 and 362 (or consent of instructor). Builds on the material and techniques introduced in Marketing 358. Addresses the problems involved in physical distribution operations management. Uses a "case" or "situation" approach to simulate a "real world" problem context.

453 Marketing to the Government (3)
Prerequisite: Marketing 351. The marketing of defense and nondefense products to the government. The nature and administration of contractual agreements with government agencies.

454 Advertising Management (3)
Prerequisite: Marketing 354. Examines the interrelationships of product planning, advertising management, sales management, financial management and corporate strategy in a competitive environment.

455 Management of the Sales Force (3)
Prerequisite: Marketing 351. Examines the job of the sales manager in such areas as organization; recruiting and selecting salesmen; sales training; formulating compensation and expense plans; supervising and stimulating sales activities; morale; sales planning, evaluating salesmen; and distribution cost analysis.

456 Marketing Problems in Retail Sector (3)
Prerequisite: Marketing 352. Structure and scope of the retail sector; entrepreneurial function; franchising; consumer segment and store image; assimilating the employee into the organization; pricing: measurement and elasticities; monopolistic competitive markets and nonprice competition; merchandising control; emerging trends in retailing—a macroeconomic view.

457 Quantitative Marketing Analysis (3)
Prerequisites: Marketing 351, QM core, Finance 320 and Management 341 (or consent of instructor). Develops the use of analytical tools and techniques as support for such marketing-management functions as planning, scheduling, evaluating, control. Emphasizes the analysis of marketing processes and systems and the development of appropriate action recommendations.

458 International Marketing (3)
Prerequisites: Marketing 351 and senior standing. Presents analytical framework for studying development of domestic marketing systems. Marketing problems arising across national boundaries and within national markets will be analyzed. Emphasis is given U.S. firms involved in international marketing operations.

459 Marketing Problems (3)
Prerequisites: senior standing, two advanced marketing courses. Analysis and evaluation of marketing problems of both the firm and society. Emphasis placed upon integrative interactions between marketing activities and the interfaces of marketing with finance and production. Case method and current readings.

470 Consumer Behavior (3) (Formerly 350)
Prerequisite: Marketing 351. An investigation of consumer buying patterns, motivation and search behavior. Emphasis on the consumer decision-making process. Interdisciplinary study of consumer based on concepts from economics, sociology, psychology, cultural anthropology and mass communications.

479 Research Problems in Marketing (3)
Prerequisite: Marketing 379. Marketing research practicum. Emphasis on matching research methodologies to problems of market analysis, product planning, advertising, sales forecasting and other marketing activities. Alternative data collection and analysis techniques explored. Seminars, research projects. (3 hours lecture, 1 hour activity)

497 Business and Economic Research (3)
(Same as Business Administration 497)

499 Independent Study (1-3)
Prerequisites: marketing concentration, senior standing, and approval by the department chair. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

519 Marketing Management (3)
Prerequisites: Accounting 510, Economics 514, QM 512, 513, Management 516, 518 (may be taken concurrently) and classified M.B.A. status. A graduate introductory course in marketing management. A contemporary analysis of concepts, principles and techniques used in the administration of the marketing variables. The role of marketing within the context of society and the business firm is explored.

525 Seminar in Marketing Problems (3) (Formerly Marketing 551)
Prerequisites: Marketing 519 and classified M.B.A. status. A managerial approach to major marketing problems facing industry: definition of and organization for marketing task; demand analysis; decisions concerning product, price, promotion, and trade channels. Use of case method and readings on current topics.

552 Seminar in Price Policy (3)
Prerequisites: Marketing 525 and classified M.B.A. status. Critical analysis of pricing problems. Pricing function examined from standpoints of economic theory, management science, business practices, legal constraints, ethical considerations. Relationship of pricing objectives, policies, strategies, methods market behavior, goals of firm.

553 Seminar in Product Planning (3)
Prerequisites: Marketing 525 and classified M.B.A. status. Designed to assist marketing management in the formulation and execution of marketing plans for new and existing products. Examination of the management decision areas and procedures search, preliminary evaluation, development, testing, commercialization products.

554 Seminar in Promotion (3)
Prerequisites: Marketing 379, 525, and classified M.B.A. status. Critical analysis of the promotion mix as employed by businesses to optimize profitable operations. Particular emphasis given to determination of promotional goals, planning, budgeting, controlling promotional programs; and measuring promotional effectiveness.

555 Seminar in Marketing Research (3)
Prerequisites: Marketing 379, 525, consent of instructor and classified M.B.A. status. The application of scientific method to marketing decisions; research methodology and models; decision-making applications.

556 Seminar in Consumer Behavior (3)
Prerequisites: Marketing 525 and classified M.B.A. status. Design and evaluation of marketing communications programs in consumer and industrial settings based on the critical analysis of buyer decision-making and communications models. Discussion, cases, and projects.

558 Seminar in International Marketing (3)
Prerequisites: Marketing 519 or equivalent and classified M.B.A. status. Includes: comparative international marketing systems; managerial techniques and strategies as they apply to multinational and domestic firms engaged in export; and the impact of political, legal, social, economic and cultural forces upon the decision-making process.

559 Seminar in Marketing Thought and Concepts (3)
Prerequisites: Marketing 525 and classified M.B.A. status. Application of theoretical concepts in the behavioral sciences, managerial sciences and quantitative methods to the development of theories and models in marketing. The emphasis is on the interdisciplinary exchange of ideas relating to marketing. Evolving concepts and theories in marketing are appraised. May be repeated for credit.

595 Modern Capitalism (3)
(Same as Business Administration 595)

597 Project (3)
Prerequisite: classified M.B.A. status. Directed independent inquiry.

598 Thesis (3-6)
Prerequisite: classified M.B.A. status. Directed independent inquiry. Student will select and have approved a thesis topic, show evidence of original research, and must present himself for a defense of the thesis before a faculty committee.

599 Independent Graduate Research (1-3)
Prerequisites: classified M.B.A. status, consent of instructor and approval by department chair. May be repeated for credit.

QUANTITATIVE METHODS COURSES

170 Introduction to Quantitative Methods (3)
Prerequisite: Math 150A or equivalent. For those business majors concentrating in quantitative methods. Emphasizes application of the mathematical tools which the student learns in a first course in calculus and analytic geometry.

264 Computer Programming (2)
Introduction to problem-oriented languages of computers. The solving of problems using computer programming. May be repeated for credit.

265 Computer Methods in Business and Economics (3)
Prerequisite: Math 130 or equivalent (may be taken concurrently). Elementary probability and digital computer methods and their business and economic applications. Solving business and economics problems on a digital computer with a compiler language.

266 Computer Methods and Probability (3)
Prerequisite: college algebra or three years of high school mathematics including two courses in algebra. For computer science majors. Includes computer system configurations, terminology, algebraic compiler level programming, flow charts, probability, set theory, frequency distributions, expectation and binomial distribution.

280 Computer Language Survey (3)
Prerequisite: QM 264, 265, or equivalent. A study of selected computer languages. Introduction to formal language theory, numerical data processing, string and list processing, formal structure manipulating, recursive routines.

289 Computer Methods in Social Science (3)
An introduction to the history and application of digital computers to problems in the social sciences. Student written programs in a problem-oriented computer language. Discussion of computers, law and society; artificial intelligence; and other topics of current interest.

361 Statistical Methods in Business and Economics (3)
Prerequisites: QM 265 or equivalent and Math 130. Collection, analysis, and presentation of statistical data. Random sampling, estimation, and hypothesis testing. Introduction to regression and correlation.

362 Management Science Methods in Business and Economics (3) (Formerly 360)
Prerequisites: QM 265 or equivalent and Math 130. Concepts of mathematical methods and their application to business and economic problems. Elementary mathematical optimization models. Students with a quantitative methods concentration must take QM 363 in lieu of this course.

363 Management Science (3)
Prerequisites: Math 150B or QM 170. Introduction to the basic concepts of management science and its relationship to economics and decision theory. Topics surveyed include optimization in continuous models, linear programming, queueing and inventory models, dynamic programming and decision-making in the business environment.

364 Computer Logic and Programming (3)
Prerequisites: QM 264, 265, or equivalent, and QM 280 (may be taken concurrently). An introductory survey of assembler language, hardware organization, design, logic, and system software of modern digital computers.

367 Statistics and Society (3)
A descriptive, non-mathematical survey of the impact of statistical concepts and techniques on social, political, biological, and environmental life of mankind.

382 Information Structures and Machine Language Programming (3)
Prerequisite: QM 364. A formal discussion of information structures, the types of processes for which they are appropriate, and their relative computational efficiencies. Assignments implemented in a variety of machine languages.

420 Applied Statistical Forecasting (3)
Prerequisites: QM 361 or Math 230 and Economics 310 or 320. Statistical methods applied to problems in business and industry; fundamentals of index-number constructions; practical multiple regression models with computer solutions; basic techniques in time-series analysis of trend, cyclical and seasonal components; correlation of time-series and forecasting with the computer.

422 Surveys and Sampling Design and Applications (3)
Prerequisite: QM 361 or Math 230. Principles for designing business and economic surveys. Applications in accounting, marketing research, economic statistics and the social sciences. Basic methods of sampling: simple random, stratified and multistage design; construction of sampling frames; detecting and controlling non-sampling errors.

430 Nonparametric Statistics (3)
Prerequisite: QM 361 or Math 230. The application of nonparametric statistical methods to problems in business and economics. Topics covered include sign tests, rank correlation, contingency tables, order statistics, runs.

446 Computer Programming Theory (3)
Prerequisite: QM 382. A study of techniques for establishing the correctness of algorithms, estimating time and storage requirements of algorithms, and selecting the operational environment and linguistic media appropriate for algorithms.

448 Digital Simulation in Business and Economics (3)
Prerequisites: QM 280, and Math 435 or QM 461. A study of techniques of generating stochastic variates and their use in solving numerical problems and studying operational problems in queueing, communication, economic, inventory, scheduling and other business models.

461 Advanced Statistics (3)
Prerequisites: QM 170 or Math 150B and QM 361 or Math 335 or Engineering 423. An advanced treatment of the theory and application of the topics covered in QM 361, using the methods of the calculus. Moments, generating functions, point and interval estimation, Neyman-Pearson and Likelihood Ratio Hypothesis Tests.

464 Information Retrieval and Natural Language Processing (3)
Prerequisite: QM 364 or consent of instructor. An examination of modern computer hardware, the techniques of programming it, and the languages in which such programs are written. Includes discussion of memory protection, interrupt systems, recursive programming, list-structured-languages and user-oriented languages.

465 Linear Programming (3)
Prerequisite: Consent of instructor. Theory and applications of linear programming. Topics include: problem formulation and solution, simplex method, duality, post-optimality and parametric analyses, techniques for specially structured problems such as upper bounded, transportation, and assignment problems.

466 Integer and Nonlinear Programming (3)
Prerequisites: calculus and consent of instructor. Theory and applications of nonlinear and integer programming. Topics in nonlinear programming include Kuhn-Tucker theorem, computational algorithms, quadratic programming. Topics in integer programming include cutting plane algorithms, branch and bound techniques, special techniques for specially structured problems.

467 Statistical Quality Control (3)
Prerequisite: QM 361 or Math 230. Shewhart Control Charts for variables, percent defective, and defects. Tolerances, process capacity; special control charts, acceptance sampling, and batch processing problems. Bayesian aspects of process control.

469 Reliability Statistics (3)
Prerequisite: QM 461 or equivalent. Statistical principles of reliability; hazard functions; point and interval estimation of reliability; reliability demonstration; growth models.

470 Conflict, Bargaining and Cooperation (3)
Prerequisite: QM 265, Math 120, or consent of instructor. Analysis of the structure of two-, three- and many-sided conflict, bargaining, and cooperation by means of the theory of games of strategy. The structure of strategy and utility, domination, negotiability and non-negotiability, cooperation and equilibrium.

471 Dynamic Programming and Network Flows (3)
Prerequisites: calculus and QM 465. Theory and applications for dynamic programming and network flows and their interrelationships. Topics include formulation of sequential decision processes such as cargo-loading, equipment replacement, resource allocation, and scheduling problems; shortest route problem; max. flow/min. cut theorem, generalized network problems.

472 Quantitative Methods in Production & Inventory Control (3)
Prerequisites: Calculus, QM 362 or 363 and 361. (s,S) inventory policies, static and dynamic models, deterministic and probabilistic models; aggregate production planning models, scheduling models, assembly line balancing.

475 Multivariate Analysis (3)
Prerequisite: QM 461 or equivalent. The least squares principle; estimation and hypothesis testing in linear regression; multiple and curvilinear regression models; discriminant analysis; principal components analysis; application of multivariate analysis in business and industry.

480 Information Theory and Cybernetics (3)
Prerequisites: QM 265, 361 or Math 230, and Math 250. Study of complex systems in their static aspects; information contents and communications and their dynamic aspects; change, control and stability.

482 Introduction to Discrete Structures (3)
Prerequisites: Math 150A,B and either QM 382 or consent of instructor. Combinatorial and graph theory techniques applied to study of known and unknown structures, to counting, approximate counting and enumeration of structural configurations, and to resolution of discrete optimization problems.

484 Computer Assisted Instruction (3)
Prerequisites: QM 264 and consent of instructor, knowledge of computer organization, terminology, and experience in programming. A survey of computer-assisted and computer-based instruction consisting of a review of present research activities and including: methodology of educational approaches, implementations, and present achievements.

485 Programming Systems and Programming Language Processing (3)
Prerequisite: QM 382. A study of monitor, assembler, and compiler systems and the hardware, firmware, and software characteristics required in a real-time, interactive environment.

486 Automata Theory (3)
Prerequisites: QM 382 and Math 250, or consent of instructor. A formal introduction to the theory of computation and its relation to modern computing techniques. Includes development of Turing machines, recursive functions, equivalence theorems, and the algebraic theory of recognizers.

487 Artificial Intelligence (3)
Prerequisite: QM 382. Selected topics of current interest from heuristic programming, pattern recognition, learning systems, problem solving systems, and formal symbol manipulating systems.

488 Introduction to Pattern Recognition (3)
Prerequisites: QM 382 and 461, or consent of instructor. Classification techniques, discriminant functions, training algorithms, potential function theory, supervised and unsupervised learning, feature selection, clustering techniques, multidimensional rotations and rank ordering relations.

490 Queueing and Stochastic Process Models in Business and Economics (3)
Prerequisite: Calculus, QM 362 or 363 and 361. Single and multichannel queueing systems of Markovian and general arrival and departure streams; birth-death processes, cost models and optimization of queues; Markov analyses; introduction to renewal theory; reliability.

495 Symposium in Applied Mathematics (1)
Prerequisites: a major in engineering, mathematics, or business administration (quantitative methods) and at least junior standing. A series of weekly lectures to be given on varied topics in applied mathematics by invited experts in areas of current research and applications.

497 Business and Economic Research (3)
(Same as Business Administration 497)

499 Independent Study (1-3)
Prerequisites: quantitative methods concentration, senior standing, and approval by the department chair. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

512, 513 Quantitative Business Decision Techniques (3,3)
Prerequisites: QM 512 must be taken before QM 513 as must Accounting 510 and Economics 514; classified M.B.A. status. The development and application of mathematical and statistical methods, including mathematical models, computer programming and simulation, used in business decision-making.

526 Quantitative Business Decision Analysis (3)
Prerequisites: QM 513 and classified M.B.A. status. Techniques from probability, statistical decision theory, and computer simulation applied to problems of management.

560 Operations Research (3)
Prerequisites: Math 150A, QM 513 and classified M.B.A. status. Techniques of operations research, with emphasis on model construction. Topics include optimization in continuous models, linear programming, queueing and scheduling models, inventory models, dynamic programming. (Not open to students with QM 363)

561 Seminar in Operations Research (3)
Prerequisites: QM 560 or consent of instructor and classified M.B.A. status. A particular topic in operations research, such as simulation, inventory theory, waiting line theory, or synthesis of large scale systems will be covered in depth with special emphasis on research methods.

565 File Management and Information Systems (3)
Prerequisites: QM 464 or consent of instructor. An examination of innovative real-time computer based information systems in industry and government.

566 Design of Experiments (3)
Prerequisites: QM 513 and classified M.B.A. status. A survey of the fundamentals of experimental design, including analysis of variance, factorial experiments, nested designs, confounding, and fractional replication.

571 Seminar in Quantitative Methods of Policy Analysis (3)
Prerequisites: QM 363 or 560 and classified M.B.A. status. The synthesis, analysis and evaluation of policy alternatives through the use of quantitative methods. The analyst's role in evaluating operations of an enterprise is demonstrated by individual and team efforts in the design, development, performance and communication of results of operations research projects.

576 Business Modeling and Simulation (3)
Prerequisites: graduate status and consent of instructor. Theory of modeling and simulation of business activities. Selected topics include planning models, flow graphs, queueing phenomena, industrial dynamics, human factors and large scale systems.

584 Operating Systems (3)
Prerequisite: QM 485. A study of design and evaluation techniques for controlling automatic resource allocation, providing efficient programming environments and appropriate user access to the system, and sharing the problem solving facilities.

585 Programming Language Processing (3)
Prerequisite: QM 584. A study of practical techniques for the design of compilers and their relation to formal automata models.

586 Mathematical Automata Theory (3)
Prerequisites: QM 382, Math 250, QM 486. A mathematically theoretic approach to computation, recursive function, syntactic compiler theory, ambiguity, soluability automata, probabilistic machines and decomposition theory.

587 Formal Languages and Automata (3)
Prerequisite: QM 485. A study of finite and infinite languages; generators, recognizers and acceptors, types of formal grammars; decidability and partial decidability.

588 Mathematical Pattern Recognition (3)
Prerequisites: QM 382, 461, 488. A mathematical approach to classification techniques, discriminant functions, training algorithms, potential function theory, supervised and unsupervised learning, feature selection, clustering techniques, multidimensional rotations and rank ordering relations.

597 Project (3)
Prerequisite: classified M.B.A. status. Directed independent inquiry.

598 Thesis (3-6)
Prerequisite: classified M.B.A. status. Student will select and have approved a thesis topic, show evidence of original research and must present himself for a defense of the thesis before a faculty committee.

599 Independent Graduate Research (1-3)
Prerequisites: classified M.B.A. status and consent of department chair. May be repeated for credit.

CROSS-DISCIPLINARY UNIVERSITY PROGRAMS

CROSS-DISCIPLINARY UNIVERSITY PROGRAMS

COMPUTER SCIENCE PROGRAM

FACULTY

Ronald Colman
Program Coordinator

Gary Bloom (Quantitative Methods), Susan Bourgoin (Engineering), Joseph Bucuzzo (Mathematics), Wen Chow (Quantitative Methods), Michael Clapp (Mathematics), George Cohn (Engineering), Robert Curry (Mathematics), Ben Edmondson (Quantitative Methods), James Friel (Mathematics), Basil Gala (Quantitative Methods), Richard Gilbert (Mathematics), Walter Hudetz (Engineering), John Mathews (Mathematics), Marshall McFie (Quantitative Methods), Demetrios Michalopoulos (Quantitative Methods), Ronald Miller (Mathematics), Chennareddy Reddy (Engineering), Herbert Rutemiller (Quantitative Methods), Rollin Sandberg (Mathematics), Ram Singhania (Quantitative Methods), Edward Sowell (Engineering), Jesus Tuazon (Engineering), Mahedeva Venkatesan (Engineering)

COMPUTER SCIENCE COUNCIL MEMBERS

Susan Bourgoin, Ronald Colman, Robert Curry, Ben Edmondson, Demetrios Michalopoulos, Ronald Miller, Rollin Sandberg, Fred Silski,* Edward Sowell, Jesus Tuazon

Bachelor of science and master of science degree programs in computer science are administered by the Computer Science Council, an interdisciplinary group representing the Department of Mathematics, the Department of Quantitative Methods and the Division of Engineering.

The Association for Computing Machinery has given the following discipline description of computer science:

> "Computer science is not simply concerned with the design of computing devices—nor is it the design of computing devices—nor is it just the art of numerical calculation, as important as these topics are. Computer science is concerned with *information* in much the same sense that physics is concerned with energy; computer science is devoted to the representation, storage, manipulation and presentation of information in an environment permitting automatic information systems. ...All forms of information—numeric, alphabetic, pictorial, verbal, tactile, olfactory, etc.—are of interest to computer science."

The computer scientist is interested in effective ways to present information, algorithms to transform information, languages in which to express algorithms, effective means to monitor the process and display transformed information, and effective ways to accomplish these goals at reasonable cost.

B.S. IN COMPUTER SCIENCE

The degree requires completion of 54 units of basic courses which include courses in mathematics and statistics as well as in computer languages, information structures and computer logic design. Fifteen additional units are required beyond the basic courses. Considerable flexibility is provided to the student in that he may elect a 15-unit concentration in mathematics, engineering or quantitative methods. The student's grade-point average must be at least 2.0 for the 69 units required for the major, and none of these may be taken on a credit-no credit basis.

Required courses are as follows:

	Units
Lower Division	21
Mathematics 150A,B Analytic Geometry and Calculus (4,4)	
Mathematics 250 Intermediate Calculus (4)	
Mathematics 281 Linear Algebra with Differential Equations (3)	

* Student

Quantitative Methods 266 Computer Methods and Probability (3) *or*
Engineering 205 Digital Computation (3)
Quantitative Methods 280 Computer Language Survey (3)

Upper Division 33

Quantitative Methods 364 Computer Logic and Programming (3)
Quantitative Methods 382 Information Structures and Machine Language Programming (3)
Quantitative Methods 485 Programming Systems and Programming Language Processing (3)
Engineering 402 Digital Logic Design (3)
Engineering 405 Digital Computer Design and Organization (3)
Mathematics 340 Numerical Analysis (3)
Mathematics 335 Mathematical Probability (3) *or*
Engineering 423 Engineering Probability and Statistics (3)
Mathematics 435 Mathematical Statistics (3) *or* Quantitative Methods 461 Advanced Statistics (3)
Quantitative Methods 448 Digital Simulation in Business and Economics (3)
Quantitative Methods 363 Management Science (3)
Economics 301 Economic Principles (3)

Units

Upper Division Electives..... 15

A minimum of 15 units of upper division electives, selected from the list below to comprise a concentration in one of the three areas: Engineering, quantitative methods or mathcmatics. The 15 units may include courses in other areas besides the concentration, but all electives must be approved by the student's adviser.

Total..... 69

Upper Division Elective Courses:

Accounting:
407 Integrated Data Processing Systems (3)

Computer Science:
489 Mechanical Theorem Proving and Applications (3)
495 Internship in Computer Science (3)

Economics:
310 Intermediate Microeconomic Analysis (3)
440 Introduction to Econometrics (3)

Engineering:
300 Electric Circuits (3)
300L Electric Circuits Laboratory (1)
303 Electronics (3)
303L Electronic Laboratory (1)
308* Engineering Analysis (3)
317 Introduction to Computer Science (3)
402L Digital Logic Laboratory (2)
405L Digital Computer Design Laboratory (2)
424 Computer Simulation of Continuous Systems (3)
445 Pulse and Digital Circuits (3)
445L Pulse and Digital Circuits Laboratory (2)
483 Computer Methods in Engineering (3)
497 Senior Projects (1-3)
499 Independent Study (1-3)

Mathematics:
302 Modern Algebra (3)
304* Mathematical Logic (3)
306 Vector and Tensor Analysis (3)
308* Introduction to Applied Mathematics (3)
310 Ordinary Differential Equations (3)
330 Number Theory (3)
350A,B Advanced Calculus (3,3)

*Not *both* Mathematics 435 and Quantitative Methods 461 nor *both* Mathematics 340 and Engineering 403 may be used to fulfill minor requirements. Not *both* Mathematics 308 and Engineering 308 . . . nor *both* Mathematics 304 and Philosophy 369 may be used to fulfill upper division elective requirements.

370 Mathematical Model Building (3)
412 Complex Analysis (3)
430 Partial Differential Equations (3)
431 Methods of Applied Mathematics (3)
440 Advanced Numerical Analysis (3)
499 Independent Study (1)

Philosophy:

369* Second Course in Symbolic Logic (3)

Quantitative Methods:

446 Computer Programming Theory (3)
464 Information Retrieval and Natural Language Processing (3)
465 Linear Programming (3)
466 Nonlinear Programming (3)
467 Statistical Quality Control (3)
475 Multivariate Analysis (3)
480 Information Theory and Cybernetics (3)
482 Introduction to Discrete Structures (3)
486 Automata Theory (3)
487 Artificial Intelligence (3)
488 Introduction to Pattern Recognition (3)
490 Stochastic Process Models in Business and Industry (3)
495 Symposium in Applied Mathematics (1)
499 Independent Study (1-3)

Note: up to six units of upper division electives not on the above approved list may be adviser-approved; more than six units of upper division electives not on the above list requires approval of the B.S. Curriculum Committee of the Computer Science Council. Only three units of Computer Science 495 may be included among upper division elective units. Independent Study 499 and Senior Projects 497 coursework must be related to computer science.

Most courses within the computer science program originate in departments within the university. Students should refer to the department originating the course for description.

MINOR IN COMPUTER SCIENCE

Students majoring in other fields, including those without an extensive mathematics background, may earn a minor in computer science. A minimum of 21 units of computer science are required for a minor. These shall include Quantitative Methods 265, Quantitative Methods 289 or Engineering 205 in addition to Quantitative Methods 280 and either Quantitative Methods 364 or Engineering 402, and a minimum of four courses (at most two from the same area) selected from the following upper division courses in the indicated areas:

Engineering: 317, 402, 403*, 405, 424, 445, 458
Mathematics: 335, 340*, 435*, 440
Quantitative Methods: 364, 382, 446, 448, 461*, 464, 480, 482, 485, 487, 488, 495

Students must have a 2.0 grade-point average or better in the minor. These courses may not be taken on a credit/no credit basis.

Student Advisement

Undergraduate students majoring in computer science may select a faculty adviser from a list of advisers from the faculties of engineering, mathematics and quantitative methods; otherwise an adviser will be arbitrarily assigned. Students are strongly urged to consult with their advisers each semester, or as frequently as needed.

Group advisement sessions are sponsored each semester by the Computer Science Council in conjunction with the Computer Club. Entering students are especially urged to attend these sessions. Contact the coordinator of computer science for details.

MASTER OF SCIENCE IN COMPUTER SCIENCE

The Division of Engineering, the Department of Mathematics and the Department of Quantitative Methods jointly sponsor the master of science degree program in computer science which is administered by the Computer Science Council. Applicants, as well as continuing students, should read carefully the university requirements for masters' degree programs.

* Not *both* Mathematics 435 and Quantitative Methods 461 nor *both* Mathematics 340 and Engineering 403 may be used to fulfill minor requirements. Not *both* Mathematics 308 and Engineering 308 . . . nor *both* Mathematics 304 and Philosophy 369 may be used to fulfill upper division elective requirements.

Program objectives are to: (1) prepare students for the increasingly sophisticated application of computers to the needs of industry and society; (2) prepare students for research, teaching and further graduate programs in computer science; and (3) provide graduate level coursework in computer science which supplements the curriculum in other disciplines.

Admission to Conditionally Classified Graduate Standing
A bachelor's degree from an accredited institution with a grade-point average of at least 2.5 is required. Students with grade deficiencies may be considered; any deficiencies must be made up and will require six or more units of adviser-approved coursework with at least a 3.0 average in addition to those required for the degree.

Admission to Classified Graduate Standing
Achievement of this status requires the following:
1. Approval of a formal study plan (see description below) by the Computer Science Graduate Committee and the Dean of Graduate Studies.
2. Satisfactory completion of no more than nine units on the study plan.
3. Satisfactory completion of Engineering 405, Mathematics 340 and 350A, Quantitative Methods 382 and 485, or their equivalents. No more than six units of these courses may be included in the study plan.

Note: In view of the fact that talented professional computer scientists have traditionally come from a diversity of undergraduate preparations, the background preparation required above is just that preparation which is both sufficient and necessary. The listed courses, prerequisites for required graduate courses in the program, have been carefully selected to provide an adequate basis for graduate work while not unfairly closing the door on persons without a bachelor's degree in computer science. *It should be noted, however, that each of these courses has prerequisites and the student without preparation in a closely related degree may have considerable work to complete beyond the courses listed here.* Reference should be made to the catalog descriptions for prerequisites of each course deficiency.

Study Plan
Prior to admission to classified graduate status in computer science, the student with the aid of his adviser shall prepare and submit for approval by the Computer Science Graduate Committee a formal study plan consisting of a minimum of 30 units of upper division or graduate coursework including Engineering 506, Quantitative Methods 584, and *either* Mathematics 540 *or* Quantitative Methods 565, and at least four more courses, including the other starred (✭) courses selected from one of the four areas of concentration listed below.

Additional elective courses, selected normally from among the courses listed below, or up to six units of coursework to be completed to remove deficiencies in required background preparation, shall be included in the study plan to satisfy the 30-unit minimum requirement. Up to three units of adviser-approved elective coursework related to the student's concentration may be chosen from other disciplines.

All coursework in the study plan must be completed with a GPA of at least 3.0.

Areas of Concentration

Information Processes and Structures

Quantitative Methods:

584 ✭ Operating Systems (3)
585 ✭ Programming Language Processing (3)
586 Mathematical Automata Theory (3)
587 ✭ Formal Languages and Automata (3)
588 Mathematical Pattern Recognition (3)
446 Computer Programming Theory (3)
487 Artificial Intelligence (3)
597/598 ✭ Project or Thesis (3)

Information Processing Systems
Engineering:

506 ✭ Advanced Digital Computer Systems (3)
527 ✭ Fault Diagnosis and Finite Automata (3)

554 ☆ Hybrid Computation (3)
424 Computer Simulation of Continuous Systems (3)
445 Pulse and Digital Circuits (3)
483 Computer Methods in Engineering (3)
597/598 ☆ Project or Thesis (3)

Applications, Mathematical Methods
Mathematics:
530 Topics in Applied Mathematics (3)
535 Applied Probability and Statistics (3)
540 ☆ Topics in Numerical Analysis (3)
545 ☆ Approximation Theory (3)
599 Independent Graduate Research (1-3)
430 Partial Differential Equations (3)
431 Methods of Applied Mathematics (3)
440 ☆ Advanced Numerical Analysis (3)
597 ☆ Project (3)

Applications, Administrative Information Systems
Quantitative Methods:
507 ☆ Organizational Systems and their Information Requirements (3)
560 Operations Research (3)
565 ☆ File Management and Information Systems (3)
581 Advanced Statistical Analysis for Business Decisions (3)
448 Digital Simulation (3)
464 ☆ Information Storage and Retrieval (3)
597/598 ☆ Project or Thesis (3)

Graduate Student Advisement
Each of the four faculty members of the Computer Science Graduate Committee is the adviser for those graduate students in his area of concentration; consult the coordinator of computer science for reference to the appropriate committee member.

For further information, consult the coordinator of computer science. See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin*.

COMPUTER SCIENCE COURSES

489 Mechanical Theorem Proving and Applications (3)
Prerequisites: Quantitative Methods 487 or Mathematics 304 or Philosophy 368. A formal discussion of mechanical theorem proving with applications in information retrieval, program analysis, program synthesis and other advanced areas in computer science.

495 Internship in Computer Science (3)
Prerequisite: Computer science or related major and consent of instructor. Practical experience in the field in government or private agencies. May be repeated once for credit.

ENVIRONMENTAL STUDIES PROGRAM

FACULTY
Joel Weintraub
Program Coordinator
COUNCIL OF ENVIRONMENTAL STUDIES
Tom Corneto (student), Richard Brock (Engineering), Arthur Earick (Urban Studies), Lyle Kalish (Economics), Prem Saint (Earth Science), Barry Thomas (Environmental Education), James Woodward (Technological Studies)

Environmental studies is an interdisciplinary program of courses dealing with man and his interactions with his environments—cultural as well as natural. The courses, both pre-existing in various departments and specially developed, attempt to integrate knowledge and

methods from several disciplines, all of which independently study special aspects of this area. The program will deal with man and his social and cultural aspect, as he exploits, modifies and attempts to achieve balance with his environment. The student will have the opportunity to cope with problems involving ecological changes, pollution, technological solutions, economics, balanced land use, and politics.

The program is intended to provide the widest possible variety of students with an opportunity to become acquainted with and acquire a common vocabulary in this vital area. A basic element will be an introductory seminar in environmental studies, which will bring together students and staff from various disciplines to delineate environmental problems and explore fundamental methods. This seminar may be taken either on the undergraduate or graduate level and will be prerequisite to all further work in the projected graduate program. Additional graduate-level interdisciplinary courses serve as foundations for graduate curricula in the program options.

No degree objective in environmental studies is planned for undergraduates; however, participation by such students in the program is encouraged. Individuals interested in environmental problems, irrespective of their majors, and those planning to enter job-related areas should consider supplementing their regular course schedules with elements of this program.

A Master of Science in Environmental Studies is offered. The student may elect emphases in human ecology, urban studies, environmental education or in technological studies.

MASTER OF SCIENCE IN ENVIRONMENTAL STUDIES

Admission to Graduate Standing: Conditionally Classified

An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted. In addition, three letters of recommendation are required.

Admission to Graduate Standing: Classified

A student who meets the requirements for conditionally classified graduate standing, as well as the following requirements, may be admitted as a classified graduate upon the development of an approved study plan:

1. An overall GPA of at least 3.0 for the last 60 units. If the student has a grade deficiency, he will be eligible for classification if he achieves a GPA of 3.0 in nine units of adviser-approved coursework.

2. Completion of Environmental Studies 440.

3. Completion of no more than nine semester units of adviser-approved coursework.

Study Plan

The M.S. in Environmental Studies requires a minimum of 36 units of adviser-approved coursework with a GPA of 3.0 or better.

I. Interdisciplinary Core, Environmental Studies
   - 440 Introduction to Environmental Studies (3)
   - 501 Environmental Analysis: Natural and Urban Environment (3)
   - 502 Environmental Evaluation and Protection (3)
   - 595 Environmental Problems: Seminar (3)

II. Project, Internship, Thesis
   Every student will either prepare a research project or participate in an internship at an institutional or private agency. A thesis is required on the results of these experiences. Projects will be interdisciplinary in nature. (6)

III. Individualized Coursework
   Graduate level courses in the field of the undergraduate major or appropriate discipline (6) and additional courses outside of the individual's major (12) will be chosen the student's background in mind.

See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin*.

ENVIRONMENTAL STUDIES COURSES

440 Introduction to Environmental Studies (3)
Prerequisite: advanced standing in an academic major. Principles, fundamentals and current problems involving man and his physical, biological and man-made environment. Human ecology, urban studies, environmental education and technological studies are introduced to the student. Seminars, field trips and simulations.

501 Environmental Analysis: Natural and Urban Environment (3)
Prerequisite: Environmental Studies 440 or consent of instructor. A look at the factors influencing our views and planning approaches in natural and urban situations. Environmental planning including use of environmental impact reports is included. Seminars, possible field trips and simulations.

502 Environmental Evaluation and Protection (3)
Prerequisite: Environmental Studies 440 or consent of instructor. A survey of selected environmental problems with emphasis on evaluation of quality standards and their impact on human health. Seminars and possible field trips.

595 Environmental Problems (3)
Prerequisite: classified status in environmental studies or consent of instructor. An interdisciplinary seminar discussing specific problems in environmental management.

596 Internship (3)
An opportunity for the student to gain field experience in governmental or private agencies. Only open to degree candidates in environmental studies.

597 Project (3)
Open to graduate students only by consent of instructor with whom the student wishes to pursue independent study in environmental studies.

598 Thesis (3)
Prerequisites: an officially appointed thesis committee and advancement to candidacy. Guidance in the preparation of a project or thesis for the master's degree.

HUMAN SERVICES PROGRAM

FACULTY
Michael Brown (Political Science)
Program Coordinator
ADVISORY BOARD
Gerald Corey (Interdisciplinary Center), Helaine Feingold (Sociology), Wacira Gethaiga (Afro-Ethnic Studies), Calvin Nelson (Special Education), Jack Russell (Counseling), George Watson (Psychology), Jack Harper (Student), Dae Leckie (Student)

The Bachelor of Science in Human Services is a carefully articulated program providing both an academic and experiential background for the student seeking a career working with people in the varied and expanding field of human services. The required core curriculum reflects a cross-cutting integration of psychology, sociology, education and counseling in addition to phased experiences in supervised field placements.

To attain intellectual depth and academic preparation in a particular area of concentration, the human services major will select 15-units of upper division courses in addition to the required core curriculum. Students with specific career interests and/or exceptional occupational backgrounds may construct an individual concentration core with the advice and approval of an adviser and the program coordinator.

	Units
A. Required core curriculum	30

Upper division:
First semester: Human services 300, Character and Conflict (3); Ed-TE 312, Human Growth and Development (3), *or* Psychology 361, Developmental Psychology (3); Afro-Ethnic 311, Intracultural Socialization Patterns (3).

Second semester: Sociology 466, Deviant Behavior (3); Psychology 341, Abnormal Psychology (3); Human Services 380 Theories and Techniques of Counseling (3).

Third semester: Human Services 470, Measurement: Individual and Aggregate Analysis (3); Human Services 480, Case Analysis and Intervention Techniques (3).

Fourth semester: Human Services 485, Program Analysis, Design and Evaluation (3); Human Services 499, Assessment Seminar (3).

B. Required field experience (to be taken in four consecutive semesters) 12
Human Services 395, Practicum (3); Human Services 396, Practicum (3); Human Services 495, Internship (3); Human Services 496, Internship (3).

C. Required core of concentration 15
Coursework selected from curricula designed by faculty in the area of concentration.

Total 57

Student Advisement

Graduates of the human services program are prepared to seek employment in a wide variety of service agencies including those which deal with exceptionality, child care, geriatrics, probation, correction and detention, mental health, education, community change and minority relations, rehabilitation, and career development. Many graduates of the program prefer to continue their training in a specialized area rather than seek a career immediately. Students who intend to enter an advanced degree program after completing the B.S. in Human Services are urged to declare that intent by the end of their junior year in order that their concentration package is congruent with the required preparation for graduate work in their chosen area.

Students interested in pursuing the "double degree" option, a B.S. degree in human services and a B.A. in a related discipline, should declare their intent early in order to minimize the additional time necessary to fulfill the requirements for both the B.S. and the B.A. degrees.

Students preparing for graduate work in psychology are advised to consider a double-degree option in human services and psychology.

If entry into a graduate program necessitates that certain substitutions be made for human services courses, equivalencies can be approved by the program coordinator. As a general rule, these substitutions are in statistics and research methods and certain courses demanded for graduate work in psychology and sociology. For example, Human Services 360 may be substituted by Psychology 331 plus Psychology 341; or Human Services 470 may be substituted by Psychology 161 and Psychology 202 or by Sociology 331A and 331B or 331X.

Transfer students: Students transferring from a two- or four-year institution are urged to complete all general education requirements prior to enrollment in the human services program. This will allow the student to embark upon the core curriculum with its fieldwork component, as well as his area of concentration, without diversion of time and energy in satisfying the general education requirements.

Cal State Fullerton students: Students doing their lower division work at this university are advised to complete all general education requirements before entering the human services program, although they may declare the human service major in either the freshman or sophomore year.

Change of Majors

Students making a change from their prior major into human services must complete a change of major form available from the Office of Admissions and Records and approved as stipulated on the form.

HUMAN SERVICES COURSES

300 Character and Conflict (3) (Formerly Interdisciplinary Center 318)

An exploration—via lectures, discussion and group encounter—into the problems and techniques of resolving the conflicts created by the individual's struggle to achieve and maintain personal autonomy while living successfully in an automated world. Topics include: autonomy, masculinity-feminity, love, sex, marriage, meaning and encountering others.

311 Intracultural Socialization Patterns (3)
(Same as Afro-Ethnic Studies 311)

380 Theories and Techniques of Counseling (3) (Formerly 390)
Basic techniques in a counseling situation; long-range and short-term approaches; limitations imposed by time, institutional function and counselor training; the art of referral; ethics of the counselor-client relationship.

395 Practicum (3) (Formerly 445A)
Survey of the field of human services; inventory of student aptitudes, abilities and goals; review of community agencies and their functions and requirements; observation and experience in basic helping situations. First semester practicum required of all majors.

396 Practicum (3) (Formerly 445B)
Field placement in a variety of on-campus and community service locations. Students may substitute Ed-SE 395 or Human Services 490 with consent of program coordinator. Second semester practicum required of all majors, with the exception of those opting for the substitutions.

470 Measurement: Individual and Aggregate Analysis (Formerly 388)
Review and analysis of pertinent measuring instruments applicable to human service screening procedures; use and limitations of available measurements; collection and analysis of aggregate data; uses of aggregate information from academic research and public agency reports; interpretation and application of basic statistics in both individual and aggregate data analysis.

480 Case Analysis and Intervention Techniques (3)
Utilizing simulated field situations through role-playing and video observations of actual counseling encounters to critique techniques and strategies in counseling; stressing experience in clear and cogent case writing and reporting.

485 Program Analysis and Design (3)
Programming in public and private agencies; design of new programs of intervention strategies; evaluation techniques applicable to new and continuing programs; program proposal writing; design of empirical research components for innovative programming and accountability; analysis and critiques of agency task force programming for immediate social problems; program-funding agencies and grant writing; program budget and effect on design.

490 Practicum in Group Leadership (3) (Formerly Interdisciplinary Center 418)
Prerequisites: Two semesters from Interdisciplinary Center 410, 411 or 412 and consent of instructor. Supervised experience as a group leader, with emphasis on various approaches and techniques of group leadership. May be repeated for credit. May be substituted for two on-campus practica.

495 Internship (3) (Formerly 445C)
Supervised work in a community or campus human service location. Third semester of practical experience required of all human services except for students opting for Ed-SE 495 or Human Services 490.

496 Internship (3) (Formerly 445D)
Supervised field work in community human service agency. Fourth semester of practical experience required of majors.

499 Assessment Seminar (3) (Formerly 489)
Analysis of student's academic performance, basic skills, aptitudes and satisfactory field performance; assessment of basic competencies in the general field of human services covered by the human services core curriculum; assessment of competencies in the special area of concentration by the Faculty Assessment Team. This assessment and evaluation seminar is to be taken in the last semester of course and field work by all majors.

INTERDISCIPLINARY CENTER

FACULTY
Paul Obler
Coordinator
Gerald Corey, Barbara D'Angelo

The Interdisciplinary Center was created out of the conviction that much of the real excitement happening in the intellectual world today (and probably other times as well) is at

the boundary lines where traditional disciplines converge. The reality of the human situation raises problems amenable to no facile descriptions or easy solutions—certainly none that any one discipline can yield. We are coming more and more to recognize the need for diverse perspectives—that whether we are confronting the immense complexity of the modern city or the subtle dimensions of love or anxiety, no single frame of reference or specialized knowledge can be sufficient.

Many of the courses now offered or planned by the center lie outside the province of any single department or academic discipline. They challenge students and professors alike to utilize their specialized knowledges and yet to go beyond them. A subject like love may be approached from historical, psychological, aesthetic or philosophical perspectives. Several courses utilize the complementary methodologies of the physical sciences, social sciences or humanities. It follows that interdisciplinary courses frequenly involve two or more professors and feature guests from outside the academic community.

INTERDISCIPLINARY CENTER COURSES

301 Psychological Approaches to Literature (3)
Analyses of literary works from Freudian, Jungian and other psychological perspectives; analysis of audience responses and projections.

303 Yoga (3)
A study of Yoga: its theories, literature and practices; some methods of meditation taught; its relevance for today's world.

315 Jazz: Past, Present and Future (3)
Jazz—its primitive and European roots; cross-cultural description of improvisation. Lectures, demonstrations, some concerts.

402 Art, Literature and the Development of Consciousness (3)
An application of theories of consciousness, particularly existential and Jungian, to poems, paintings and musical compositions. Intensive encounters between the individual and the art work; opportunities at checking one's own responses against those of others and exploring the significance of the differences. (Same as Comparative Literature 402)

403 The Quest for Self: East and West (3)
A comparative study of quest narratives which exemplify the Eastern and Western man's search for self-identity and fulfillment. Religious, psychological and literary texts will be used to help illuminate the comparison. (Same as Comparative Literature 403 and Anthropology 416)

404 The Nature of Love: Plato to Joyce (3)
An examination of the various dimensions of love as found in notable philosophical, psychological and literary works. (Same as Comparative Literature 404)

410 Self-Actualization Group: Experiences in Human Growth (3)
Prerequisite: Interdisciplinary Center 318 and consent of instructor. Intensive small group experiences will assist each individual in unleashing his own growth potential and accelerating his own developmental processes. Self-actualization and related existential and humanistic concepts will be explored in depth, using recently developed methods. Lectures, individual assignments supplement the class experience. Credit-no credit grading only.

411 Group Process and Leadership (3)
Prerequisite: consent of instructor. The impact of the individual on other persons in a group and what takes place in a group, the structure and process of a group; the influence of leadership. Theories and concepts of those forces operating in a group situation, as well as a first-hand experience in of one's own self in a group; feedback on how others see one in a group relation; and involvement in group dynamics. Credit-no credit grading only.

412 Special Group Experiences (3)
Prerequisite: consent of instructor. Intensive group experience familiarizing the student with a practical encounter approach and its theoretical basis. Sections may be repeated for credit including: transactional analysis group; Gestalt group; open couple; guided fantasies; residential marathon group; search for identity; therapeutic community; existential group; and other experimental group approaches. Credit-no credit grading only.

421 Great 19th- and 20th-Century Revolutionaries (3)
Consideration of one or more thinkers who have shaped our time; such figures as Darwin, Marx, Einstein or Freud will be the focus of study. May be repeated for credit.

451 Philosophical Backgrounds of Modern Literature (3)
The connection between representative writers and such thinkers and philosophers as Freud, Spengler, Schopenhauer, Nietzsche and Kierkegaard. (Same as English 451)

470 Seminar: Interdisciplinary Issues (3)
Concentrated study each year of a different key issue approached from an interdisciplinary view and frequently combined with two or three courses in other departments to form a nine-hour block.

499 Independent Study (1-3)
Supervised research projects to be taken with consent of instructor and program director. May be repeated for credit.

799 Independent Study (1-3)
Supervised research projects to be taken with consent of instructor and program director. May be repeated for credit.

LATIN AMERICAN STUDIES PROGRAM

FACULTY
Sheldon Maran
Program Coordinator
Oswaldo Arana (Foreign Languages), Nancy Baden (Foreign Languages), Warren Beck (History), James Dietz (Economics), David Feldman (Linguistics), Dagoberto Fuentes (Chicano Studies), Frank Hatch (Dance), Arturo Jasso (Foreign Languages), Leroy Joesink-Mandeville (Anthropology), Paul Kane (Education), William Ketteringham (Geography), Martin Klein (Communications), John Lafky (Economics), Neil Maloney (Earth Science), Lon McClanahan (Biological Science), John F. H. Purcell (Political Science), Marlene de Rios (Anthropology), Edgar Wiley (Management), Jon Yinger (Political Science)

BACHELOR OF ARTS IN LATIN AMERICAN STUDIES

The Latin American studies program is designed for students desiring a general education with specific focus on Latin America. Students planning careers which will involve residence in, or a knowledge of Latin America (such as teaching, business, government, scientific research, engineering, or journalism) will profit immensely from this program. Moreover, the program provides a sound base for students who will teach Spanish or the social sciences in the secondary schools. The program also prepares the student for graduate work in Latin American studies or in other disciplines involving a specialization in Latin America.

Teachers

The Latin American studies program has been approved for the single examination waiver in the social sciences and for the multiple subject waiver.

Foundation Courses

All students should develop a language proficiency level which is the equivalent of Spanish 204 and Portuguese 102.

Students with no language background should take:

Spanish 101 Fundamental Spanish (5)
Spanish 102 Fundamental Spanish (5)
Spanish 203 Intermediate Spanish (3)
Spanish 204 Intermediate Spanish (3)
Portuguese 101 Fundamental Portuguese (4)
Portuguese 102 Fundamental Portuguese (4)

However, a student with a knowledge of Spanish and/or Portuguese may be able to meet part or all of the foundation course requirements by taking a test administered by the Department of Foreign Languages and Literatures.

Required Core Courses

Language:
Spanish 317 Advanced Conversation and Composition (3) *or either*

Portuguese 317 *or* 318 Advanced Conversation and Composition (3)

Literature:
Spanish 441 Spanish American Literature from Modernismo to Present (3) *or*
Portuguese 441 Brazilian Literature (3)

History and Culture:
Spanish 316 Introduction to Spanish American Civilization (3) *or*
Portuguese 325 Introduction to Luzo Brazilian Culture and Civilization (3)
History 350A Colonial Latin America (3)
History 350B Republican Latin America (3)

Recommended Selected Concentrations
Fifteen units selected from three or more of the following groupings:

Culture:
Portuguese 315 Introduction to Luzo Brazilian Culture and Civilization (3)
Portuguese 317 or 318 Advanced Conversation and Composition (3) *or*
Spanish 317 Advanced Conversation and Composition (3)
Portuguese 325 Contemporary Brazilian (3) *or*
Spanish 316 Introduction to Spanish American Civilization (3)
Anthropology 322 Peoples of Mesoamerica (3)
Anthropology 324 Ancient Mesoamerica (3)
Anthropology 325 Peoples of South America (3)
Anthropology 326 Prehistory of South America (3)

Fine Arts and Literature:
Art 462 Art of Mesoamerica (3)
Art 471 Art of Central and South America (3)
Portuguese 441 Brazilian Literature (3) *or*
Spanish 441 Spanish American Literature from Modernismo to the Present (3)
Spanish 440 Spanish American Literature from the Conquest to 1888 (3)
Spanish 466 Introduction to Spanish Linguistics (3)
Spanish 485 Senior Seminar: Hispanic Topics (3) (with consent of program director)

History and Politics:
History 450 Change in Contemporary Latin America (3)
History 453A Mexico to 1910 (3)
History 453B Mexico since 1910 (3)
History 451 The Andean Nations (3)
History 452A Brazil to 1889 (3)
History 452B 20th-Century Brazil (3)
Political Science 431 Government and Politics of Latin America (3)
Political Science 452 Latin American Foreign Policies (3)

Geography and Economics
Geography 333 Geography of Latin America (3)
Geography 433 Man and Geographic Relationships in Latin America (3)
Economics 330 Comparative Economic Systems (3);
Economics 333 Economic Development: Analyses and Case Studies (3)

* *Senior Seminar:*
Latin American Studies 401 Contemporary Latin America (3)

LIBERAL STUDIES PROGRAM

FACULTY
Jara Krivanek
Program Coordinator
Ronald Clapper (English), Daniel Crary (Speech Communication), Robert Emry (Speech

* Prerequisite: consent of instructor. An interdisciplinary team taught senior seminar on topics relevant to contemporary Latin America. The exact content of the course will vary depending upon the faculty and present condition within Latin America. May be repeated for credit.

Communication), Paul Kane (Education), Fraser Powlison (Education), Alexander Stupple (English), Michael Tang (Liberal Studies), Norman Zimmerman (Liberal Studies)

BOARD MEMBERS

Jara Krivanek, Chair, Daniel Estrada, John Ferrar, Gerald Gannon, Karen Lystra, June Pollak, Fraser Powlison, Gloria Rock, Jerry Rosen, Otto Sadovszky, Eric Streitberger, Curtis Swanson, James Woodward

Policy for the liberal studies program is determined by an interdisciplinary board of liberal studies.

Liberal studies is an interdisciplinary program designed to explore and evolve ideas and ideals appropriate to educated persons in contemporary society. The program affirms that specialized higher education is not appropriate for every student or for every purpose, and that liberal or generalist programs of study have great value for both individuals and society. At the same time, the liberal studies program is more than a simple absence of specialization—it has its own purposefully structured form and content. Three major phases are involved:

1. The Liberal Studies Core Curriculum: 12 units

Liberal Studies in Communication Processes (3)
Liberal Studies in Humanities & Fine Arts (3)
Liberal Studies in Science (3)
Liberal Studies in Social Sciences (3)

Completion of appropriate areas of the general education requirements is prerequisite to enrollment in these courses.

2. The Individualized Coordinated Program: 30 units

Each student focuses on a broad, complex problem or theme of his/her own choosing and explores it through an individualized study plan developed in consultation with faculty advisers. The plan may center on some career objective, or it may simply reflect a personal interest, and the thesis sequence should emerge directly from it. The individualized coordinated program (ICP) consists of 30 units chosen from the university's current offerings. The following restrictions apply:

a. 27 of the 30 units must be upper division.

b. The upper division ICP units must be distributed among the three major areas of humanities and arts, sciences and social sciences. The student shall designate one of these as an "area of emphasis," and the two others will become "supporting areas." The distribution of ICP courses shall then be as follows:

	Units
Four courses in area of emphasis (e.g., social sciences)	12
Two courses in supporting area I (sciences)	6
Two courses in supporting area II (humanities and arts)	6
Two additional courses, either in one of the above areas, or of the student's choice. One course may be lower division	6
	30

3. The Thesis Sequence: 6 units

Liberal Studies 480 Practicum in Liberal Studies (3)
Liberal Studies 490 Seminar in Liberal Studies (3)

LIBERAL STUDIES COURSES

For information concerning prerequisites and course descriptions, call or write to the liberal studies office or the academic advisement office.

RUSSIAN AREA STUDIES PROGRAM

FACULTY

Charles Frazee
Program Coordinator

Dorothea de France (Comparative Literature), Marina Degtjarewsky (Foreign Languages), Robert Feldman (History), Ronald Helin (Geography), Karl Kahrs (Political Science), Harvey Mayer (Foreign Languages), Joyce Pickersgill (Economics), Otto Sadovszky (Anthropology), John Shippee (Political Science), Ted Smythe (Communications), Elena Tumas (Comparative Literatue), Bruce Wright (Political Science), Michael Yessis (Physical Education)

BACHELOR OF ARTS IN RUSSIAN AREA STUDIES

The Russian area studies major is an interdisciplinary program designed for students interested in historical Russia and the Soviet Union. In addition to fulfilling the various cultural objectives common to any liberal arts program, the Russian area studies major provides a foundation for teaching the Russian language and social studies on the elementary and secondary levels. This major also serves the needs of students intending to pursue careers in communications, government service and international business.

To qualify for this major, a student must complete (1) 16 units of Russian language or their equivalent, (2) 24 units of upper division Russian area courses from at least four of the following fields: anthropology, comparative literature, economics, geography, political science, history, foreign language, (3) 15 units of upper division coursework in a related discipline to be determined in consultation with a Russian area counselor. Students are encouraged to have these units apply toward a second major in a traditional discipline.

The basic lower division courses also may be used to meet general education requirements.

RUSSIAN AREA STUDIES COURSES

All courses within the Russian area studies program originate in other departments within the university. Students should refer to the department originating the course for description.

Anthropology
- **351 Peoples of Eastern Europe (3)**
- **408 The Uralic Languages (3)**

Communications
- **431 Mass Communications in Communist Systems (3)**

Comparative Literature
- **318 Baltic and Slavic Mythology (3)**
- **373 Masters of Russian Literature (3)**
- **374 Contemporary Russian Literature (3)**

Economics
- **330 Comparative Economic Systems (3)**
- **331 The Soviet Economy (3)**
- **391 Modernization of Russian Society (3)***

Foreign Language: Russian
- **303 Readings in Scientific Russian (3)**
- **315 Introduction to Russian Civilization (3)**
- **317 Advanced Conversation and Composition (3)**
- **375 Introduction to Literary Form (3)**
- **400 Russian for Advanced Students and Teachers (3)**
- **441 Tolstoy and Dostoevsky (3)**
- **451 The Golden Age of Russian Literature (3)**
- **461 Russian Literature from 1917 (3)**

Geography
- **338 Geography of the Soviet Union (3)**

History
- **419 The Byzantine Empire (3)**
- **434A Russia to 1890 (3)**
- **434B Russian Revolution and the Soviet Regime (3)**

436 The Balkans (3)
437 East Europe Since 1815 (3)
490 Seminar in Polish History (3)
490 Modernization of Russian Society (3)*
490 Seminar in Russian Revolution, 1917 (3)

Political Science
430 Government and Politics of East Europe (3)
430 Government and Politics of the U.S.S.R. (3)
443 Theory and Philosophy of Marxism (3)
452 Foreign Policy of the U.S.S.R. (3)

PROGRAM IN SOCIAL SCIENCES

FACULTY
Lawrence de Graaf (History)
Graduate Program Coordinator
Wayne Hobson
ADVISORY BOARD
Aileen Baron (Anthropology), W. Garrett Capune (Criminal Justice), Isaac Cardenas (Chicano Studies), Carol Lindquist (Psychology), Boaz Namasaka (Afro-Ethnic Studies), Gary Pickersgill (Economics), Gerald Rosen (Sociology), James Weaver (American Studies), Barbara Weightman (Geography), Jon Yinger (Political Science). Giles Brown (Graduate Studies) *ex officio*, Wayne Hobson (Social Sciences) *ex officio*

MASTER OF ARTS IN SOCIAL SCIENCES

This degree encompasses a series of coordinated programs of graduate studies, which emphasize the examination of human behavior and its relation to social institutions. These programs have the common purpose of exposing students to diverse methodologies, establishing the relationship between disciplines, and providing the student with the opportunity to explore a selected area from a variety of intellectual perspectives.

The social sciences include the following related fields: Afro-ethnic studies, American studies, Anthropology, Chicano studies, criminal justice, economics, geography, history, political science, psychology and sociology.

This degree is designed to provide interdisciplinary insights and tools for those students who are interested in pursuing careers in government and business; in elementary or secondary teaching in the area of social studies; a graduate program to complement their undergraduate degree in social science, liberal studies, area studies or other similar interdisciplinary programs; or a custom-tailored program of advanced study in the liberal arts.

Prerequisites

A student may be admitted to the program in conditionally classified graduate standing with a baccalaureate degree from an accredited institution and a minimum grade-point average of 2.5 in the last 60 semester units attempted. Classified standing requires that a student have an undergraduate major or its equivalent in one of the social sciences, a GPA of 3.0 in upper division social sciences courses, and substantial work in the social science fields selected for study.** The graduate adviser will determine qualifications in these areas and may require 3-12 units of coursework beyond the study plan to compensate for deficiencies. A study plan must be developed and approved for admission to classified graduate standing.

Study Plan

The multidisciplinary core and Social Sciences 597 and 598 shall both have flexible values, 18 to 21 units for the multidisciplinary core and three to six units for thesis/project. The study plan would be either:

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*Students may sign up for this course for history credit under History 490 or economics credit under Economics 391.

**The prerequisite for "substantial work" will vary among departments and according to the specific courses within some departments. Lack of substantial work in one or more fields will not ordinarily bar a student from admission but will result in one or more additional courses being required before the student may be classified.

	PLAN A	PLAN B
Social Sciences core	6	6
Multidisciplinary core	18	21
Thesis/Project	6	3
Total units	30	30

Units

1. Social Sciences core 6
   500 The Social Sciences in the Modern World: Theories (3) *or*
   502 Role of the Social Science Professional (3)
   501 The Social Sciences in the Modern World: Methods (3)

2. Multidisciplinary core 18-21
   Minimum 500-level units (9)
   Maximum upper division units (9-12)
   The 21 units must be taken in at least two and generally three social science fields. At least two fields should be represented in the graduate units.

3. Project or Thesis 3-6
   597 Project (3-6)
   598 Thesis (3-6)

   Every student will prepare a project or thesis on a topic approved by the director and the student's committee. See descriptions below for details. Both the project and the thesis must reflect the student's interdisciplinary effort.

Total 30

For further information, consult the graduate program adviser.

See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin.*

SOCIAL SCIENCES COURSES

385 Philosophy of the Social Sciences (3)
(Same as Philosophy 385)

500 The Social Sciences in the Modern World: Theories (3)
A seminar providing a philosophical and theoretical basis for graduate work in the area of social science. It will focus on the interrelationships which exist among the various social sciences as they relate to man in his social, physical and political environment.

501 The Social Sciences in the Modern World: Methods (3)
Analytical comparison of the historical, humanistic and scientific methodologies in the social sciences. This seminar will also deal with the contemporary trends in the social sciences methods.

502 Role of the Social Science Professional (3)
Examination of the role of the social science professional in public and private organizations. Focus on questions of role identity, power and decision-making in organizations, relationships with clients, and relationships to broader questions of social policy.

550 The Issues of Social Science: A Seminar for Teachers (3)
Examination of problems encountered in the utilization of social science literature by teachers. Emphasis on identification and clarification of major issues as presented in works in history and the social sciences written from an interdisciplinary perspective.

597 Project (3-6)
Individual direction by committee of faculty in research and preparation of either: a prototype of a nonacademic professional paper; or an innovative work in a media other than the written essay. Recommended for students planning to enter government agency or business.

598 Thesis (3-6)
Prerequisite: consent of instructor. Individual direction by committee of faculty in research and preparation of a written research essay which will reflect an interdisciplinary program of study. Recommended for students planning careers in higher education and research.

599 Independent Graduate Research (3)
Open to graduate students in social science with the consent of program adviser or coordinator. May be repeated for credit.

SPECIAL MAJOR PROGRAM

From the total curriculum of the university, students may wish to plan a specially designed program of study that does not duplicate significantly any existing major or concentration at Cal State Fullerton. The special major (B.A. or M.A.) provides opportunities for selected students to pursue individualized programs of study leading to a degree when legitimate academic and professional goals can be satisfied by a judicious selection of courses from two or more fields; and these aims cannot be satisfied by the authorized standard degree majors that are available on the campus. This major, designed for exceptional cases of individual students only, provides an opportunity to develop concentrations or specializations outside the framework of existing majors. *(It is not intended as a means of bypassing normal graduation requirements or as a means by which students may graduate who fail to complete the degree major in which they are enrolled.)*

GUIDELINES FOR THE B.A. IN THE SPECIAL MAJOR PROGRAM

1. Initial counseling, record-keeping and faculty referrals for the program will be the responsibility of the Office of Academic Advisement.

2. Students desiring to work for a bachelor's degree in a special major will prepare a proposal in writing. Forms for the proposal are available in the Office of Academic Advisement. Students are advised to initiate the proposal well in advance. Normally the proposal should be approved during the semester prior to the student commencing work on his/her special major.

3. A faculty member, the special major adviser, will work with the student to develop a suitable plan of coursework for approval.

4. A special major faculty advisory committee, appointed by the Curriculum Committee, will review the requests for admission and make recommendations regarding each proposed program to the Office of the Vice President, Academic Affairs. The formal request for admission to the special major program should include: the academic and professional reasons for wanting the program; a list of specific courses, which may include alternatives and electives, that has been developed with and approved by the faculty adviser (the relevance of each course to the special major should be explained); and justification that the program of courses being proposed does not significantly duplicate any existing degree programs.
   Programs which give indication of a jurisdictional conflict, whether by virtue of their title or course content, shall require consultation of concerned departments. Evidence of such approval shall be attached to the proposal. In case of disagreement, the dispute will be resolved in accordance with University Policy Statement (UPS) 411.102.

5. Final approval for a student to be admitted to the special major will rest with the Office of the Vice President, Academic Affairs.

6. Following approval of the special major plan, the faculty adviser will be responsible for subsequent counseling and graduation certification.

7. Entrance to the special majors is normally at the beginning of the junior year (60 units remaining for graduation). Under no conditions may a student enter the special major with less than 30 units remaining for graduation.

8. The minimum requirements for a special major degree should be a program of at least 24 semester units of upper division work recommended by the student's faculty adviser.

9. Neither lower division nor upper division courses applied to general education-breadth requirements will be applicable toward the minimum, special major degree requirements.

GUIDELINES FOR THE M.A. IN THE SPECIAL MAJOR PROGRAM

1. A graduate student desiring to work for a master's degree with a special major will prepare a proposal in writing including justification for the request. Special major application forms are available in the University Graduate Office.

2. This proposal, accompanied by statements from three professors who agree to serve on the student's graduate advisement committee, will be submitted for approval to the Special Major Advisory Committee, to the appropriate academic officers in the areas where coursework will be taken and to the dean of graduate studies (representing the vice president, academic affairs).
   Programs which give indication of a jurisdictional conflict, whether by virtue of their title or course content, shall require consultation of concerned departments. Evidence of such approval shall be attached to the proposal. In case of disagreement, the dispute will be resolved in accordance with UPS 411.102.

3. Upon approval of the general plan, the student and the committee will develop a formal and detailed program of study, which may include prerequisites. The study plan must conform to all university regulations governing graduate work.

4. The dean of graduate studies then will approve the program of study and grant classified standing in accordance with existing policies.

5. After admission (classified standing), the student will follow all university policies and procedures for graduate work as outlined in the *Graduate Bulletin* and this catalog.

6. Upon completion of requirements for the master's degree (including a thesis, project or comprehensive examination), the master's degree with a special major may be awarded in conformity with university policy.

TECHNOLOGICAL STUDIES PROGRAM

FACULTY
James F. Woodward
Program Coordinator
Al Baker (Library Science), John Cronquist (Philosophy), Roger Dittman (Physics), Jack Elenbaas (History), Barbara Finlayson (Chemistry), Barry Gerber (Political Science), Len Hitchcock (Anthropology), Chris Hulse (Anthropology), Judith Kandel (Biology), Merrill Ring (Philosophy), Ted Smythe (Communications), Ed Sowell (Engineering), Michael Tang (Liberal Studies).

The general focus of the technological studies program is on the interdisciplinary examination of the impact of science and technology on society. The program provides an area for special study within recognized major fields of studies. Students may take separate courses or develop an individualized program of studies based on courses, directed readings and research participation. Wherever possible courses are conducted as seminars and bring together lecturers from relevant disciplines included in the sciences and humanities. Through independent studies students are encouraged to pursue topics or problems of special interest beyond the scope of regular courses under the supervision of a faculty adviser. The technological studies program is directly coordinated with the activities of departments and other programs of the university.

The Man and Technology Program

Man and Technology, a program developed jointly between the technological studies program and the Division of Engineering, directed to the study of man in the man-made world, the relationship between technology and the human condition. The program (1) enables engineering students to meet social science and general education requirements of the Division of Engineering by engaging in studies closely akin to their major studies; (2)

provides a general course of study for students of other technologically oriented disciplines of the university; (3) makes available to nonengineering students a set of general education courses in the analysis and solution of engineering problems; and (4) provides a meeting ground for faculty and students concentrating in different fields of study through participation in interdisciplinary studies of technology.

TECHNOLOGICAL STUDIES COURSES

100 Introduction to Technological Studies (3)
An examination, in survey form, of questions about the development of human technologies. Examination of the various theories and methodologies which can be applied to the study of the role of technology in the process of cultural and social development.

250 People and Machines (3)
(Same as Philosophy 250)

499 Independent Study (1-3)
Students can pursue topics of special interest beyond the scope of regular courses under the supervision of a faculty adviser. The work is of a research or creative nature, and normally culminates in a paper, project, comprehensive examination or performance. May be repeated; however, consent of supervising instructor is required.

(Recommended by the Technological Studies Program)

Anthropology
460 Culture Change (3)
Communications
101 Communications Writing (3)
102 Communications Writing (3)
403 Technical Writing (3)
428 Communications and Social Change (3)
Economics
370 Economics of Research and Development and Technological Change (3)
Engineering
102 Graphical Communications (3)
103 The Computer Revolution (3)
205 Digital Computation (3)
207 Pollution and Politics (3)
208 Current Technological Problems in Southern California (3)
220 New Energy Sources (3)
334 Design Graphics (3)
380 Human Factors in Design (3)

History
430A History of Science: Ancient to Renaissance (3)
430B History of Science: Copernicus to the Present (3)
474 America in the Age of the Industrial Revolution (1876-19) (3)
479 The Emergence of Urban America (3)
Management
545 Research and Development Project Management (3)
Philosophy
210 Logic (3)
384 Philosophy of the Natural Sciences (3)
435 Philosophy of Science (3)

EDUCATION

SCHOOL OF EDUCATION

Dean: Robert T. Stout

RESEARCH PROGRAMS IN EDUCATION

510 Research Design and Analysis (3)

Prerequisites: bachelor's degree, Teacher Education 509 or equivalent. Elements of design, instrumentation, treatment of data, hypothesis testing and inference and analysis of educational data. Develop a research proposal. Practice in analyzing and evaluating research reports.

DIVISION OF SPECIAL PROGRAMS

Chair: William L. Callison

PROGRAMS IN COUNSELING/PSYCHOMETRY/SCHOOL PSYCHOLOGY

FACULTY

Marilyn Bates
Program Coordinator
Clarence Johnson, David Keirsey, Michael Parker

PART-TIME

DeWitt Bogue, Raul Cardoza, Edwin Carrigan, Raymond Choiniere, LeRoy Cordrey, Lang Dana, Keith Golay, Ski Harrison, Eleanor Hicks, David Mitchell, Donald Ridge, Richard Rogal, John Seeland

PROGRAMS IN READING

FACULTY

Hazel Croy
Program Coordinator; Director, Institute for Reading
Natalie Babcock, Norma Bartin, Adelina Gutweiler, Deborah Osen Hancock, Ruth May, George Schick, Juan Vazquez

PART-TIME

Ann Coil, Clayton Credell

PROGRAMS IN SCHOOL ADMINISTRATION

FACULTY

Walter Beckman
Program Coordinator
Gerhard Ehmann, Tracy Gaffey, Robert Jenkins, Kenneth Preble, Stanley Rothstein

PART-TIME

Edward Beaubier, Spencer Covert, Barbara Dolph, Charles Kenney

PROGRAMS IN SPECIAL EDUCATION

FACULTY

Robert Lemmon
Program Coordinator
Lester March, Calvin Nelson, Leo Schmidt, Shirl Stark

PART-TIME

Dennis Fenton, Marian Jobe, Thalia Larson, Glenn Smith

OBJECTIVES OF THE DIVISION

The courses, programs and services of the Division of Special Programs are directed toward the following objectives of students:

1. Master of Science in Education with a concentration in reading, school administration or special education.
2. Master of Science in Counseling.
3. Preservice education leading to the standard designated services credentials with specializations in pupil personnel services.
4. Preservice teacher education leading to the specialist instruction credentials in reading and special education (physically handicapped, learning handicapped, severely handicapped and gifted).
5. Professional training for staff serving in counseling, reading, school administration and special education positions.
6. In-service programs for special services personnel.

PUBLICATIONS AVAILABLE FROM THE DIVISION

1. Graduate Programs in Counseling/Psychometry/School Psychology
2. Graduate Programs in Special Education
3. Master of Science in Education, Reading
4. Master of Science in Education, School Administration

PROGRAMS IN COUNSELING/PSYCHOMETRY/SCHOOL PSYCHOLOGY

The counseling/psychometry/school psychology program is focused on the competencies which students acquire. Students who exit from the program as graduates will be certified by the faculty as having demonstrated to a specified degree, a specified set of competencies. Curricula are offered leading to (1) the degree of Master of Science in Counseling and (2) credentials in counseling, psychometry and school psychology.

MASTER OF SCIENCE IN COUNSELING

Prerequisites

An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures). In addition, an applicant should have professional experience or other approved experience. Applications are screened by a Faculty Review Committee and applicants are notified of their acceptance or nonacceptance. As soon as a student is admitted to the university for work toward this degree, he should schedule an appointment with a faculty adviser to work out a program of studies and a schedule of classes. Applicants may wish to schedule a conference for preliminary program advisement before submitting a formal application.

A student who meets the requirements for conditionally classified graduate standing, as well as the following requirements, may be admitted as a classified student upon the development of an approved study plan:

(1) An approved major;
(2) A grade-point average of 2.5 overall;
(3) Satisfactory interview, references and autobiography;
(4) Coun 452 and 550 satisfactorily completed or in progress, and approved for further work in the program by the Faculty Review Committee. The student should submit an application for admission to the Program of Counseling/Psychometry/School Psychology and complete a formal study plan for the M.S. in Counseling degree in the Division of Special Programs, and file a request for classified standing in the university Graduate Office. Admission to classified standing is through formal and informal screening processes, is by faculty decision, and is approved by the dean of graduate studies.

Study Plan

The following information is provided to assist students in planning programs and in seeking

admission to classified graduate status. Students should consult the *Graduate Bulletin* for information concerning standards for graduate study, steps in the master's degree program, and graduate policies and procedures. Thirty semester units of graduate work, specified on a formal study plan approved by the graduate adviser, must be completed within five years. The units are to be distributed as follows:

	Units
Master's degree studies, supporting courses	9
Ed-RP 510 Research Design and Analysis (3) *or*	
Coun 557 Research and Development in Counseling and Psychology (3)	
Adviser-approved courses (6)	
Courses for the concentration in counseling	21
Coun 551 Career Education Data Systems: Research and Development (3)	
Coun 552 Group Leadership (3)	
Coun 553 Program Management and Operation (3)	
Coun 555 Psychological Disorders I (3)	
Coun 559A Fieldwork in Counseling (3)*	
Coun 559B Fieldwork in Counseling (3)*	
Coun 598 Thesis, or Coun 597 Project, or Coun 595 Advanced Studies (includes comprehensive examination) (3)	
Total	30

For advisement and further information, consult the program graduate adviser.
See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin*.

INTERNSHIP IN SCHOOL COUNSELING

The program offers an internship program for bilingual/bicultural counselors in cooperation with sponsoring school districts.

ADVANCED CREDENTIAL PROGRAMS

The program offers work toward the basic pupil personnel credentials with authorization for counseling, psychometry and psychology. Students are asked to check with an adviser to plan a program of study.

COUNSELING/PSYCHOMETRY/SCHOOL PSYCHOLOGY COURSES

452 Explorations in Self Concepts: Professional/Personal (3)

A didactic and experiential exploration of work in the helping professions with emphasis on personal and professional self-concepts. This screening course is designed to give members opportunity to "sample" the helping professions before making further career commitment.

500 Survey of Collegiate Student Personnel Services (3)

History, philosophy, objectives, organization and administration of collegiate student personnel services. (2 hours lecture, 2 hours activity)

540 Seminar in Counseling in Normal and Deviant Human Sexuality (3)

Learning and assessment opportunities leading to competencies in treating problems of a sexual nature using interaction methods of empathy, confrontation, sanction and didactic methods of assignment, explanation; competencies in diagnosing type, trait, defense, communication symptoms of a sexual nature.

543 Individual Mental Tests Proseminar: Metric Methods (3)

Prerequisites: Coun 555, 545 and consent of instructor. Student will have opportunity to learn and demonstrate competencies in administration, scoring and explaining of samples of cognitive behavior using the Stanford-Binet Scale, Wechsler Scales, Illinois Test of Psycholinguistic Ability and the Leiter International Scale.

544 Individual Mental Tests Proseminar: Projective Methods (3)

Prerequisites: Coun 546 and consent of instructor. Students will have opportunities to learn and demonstrate competencies in administration, scoring and explanation of samples

*Admission to fieldwork should be requested on appropriate form at least one semester before a student expects to enroll (in both A,B,C and D). Students must have completed a minimum of six program units at Cal State Fullerton and obtain adviser's approval, which involves a competency progress report.

of projective behavior using the Thematic Apperception Test, Family Drawings Tests, Draw a Man Test, House-Tree-Person Test, Bender Gestalt Test and a Sentence Completion Test.

545 Diagnostic Observation I (3)

Prerequisite: Coun 555, 550 and consent of instructor. In this seminar students will have opportunity to learn and demonstrate competencies in eliciting, describing and explaining symptomatic behaviors in the framework of alternative theories of psychological disorders using a variety of interview, inventory, and test techniques.

546 Psychological Disorders II (3)

Prerequisites: Coun 555, 545 and consent of instructor. In this proseminar the student will have opportunity to learn and demonstrate competencies in the definition and explanation of the spectrum of abnormal behaviors and experience of clients of varying age, sex, culture and ethnicity.

547 Psychological Disorders III (3)

Prerequisites: Coun 546 and consent of instructor. Advanced proseminar. Students will have opportunity to learn and demonstrate additional competencies in the definition and explanation of abnormal behaviors and experiences with clients of varying age, sex, culture and ethnicity.

548 Individual and Group Counseling Assessment Seminar (3)

Prerequisites: Coun 550, 552 and consent of instructor. Coaching, and assessment opportunities in individual treatment and group treatment technologies.

549 Conjoint Counseling (3)

Prerequisites: Coun 556 and consent of instructor. Student will have the opportunity to learn and demonstrate competencies in applying the basic counseling repertoire in the setting of a related group comprising the identified patient and his significant others.

550 Counseling Procedures I (3)

Prerequisite: Coun 452 and consent of instructors. Team-taught seminar in the dynamics of 16 counselor-client relationships, addressing competencies in both theory and practice of counseling, therapy and consulting. Large and small group instructional formats include lectures, demonstrations, coaching, discussions, experiential, multimedia and autoinstructional modules.

551 Career Education Data Systems: Research and Development (3)

Prerequisites: Coun 452 and consent of instructor. Team-taught seminar; students will be able to operate educational, occupational, leisure data systems; to describe location, coverage, and usefulness of literature in the field; to determine parameters of single and multiple distributions of characteristics of clients of varying age, sex, culture and ethnicity.

552 Group Leadership (3)

Prerequisite: Coun 550 and consent of instructors. Team-taught seminar in intensive study of groups emphasizing clinical group leadership training. Lecture, demonstration, coaching and experiential learning opportunities are offered toward competencies in interactive and didactic group processes originating from a variety of theoretical orientations appropriate to child and family counseling.

553 Program Management and Operation (3)

Prerequisites: Coun 550, 551, 552, 555 and consent of instructor. Seminar in the management of human and information systems. Competencies in research, program development and management of public and private counseling services. Includes laws relating to family and child welfare.

555 Psychological Disorders I (3)

Prerequisites: Coun 452 and consent of instructor. An opportunity to learn and demonstrate competencies in definition and explanation of the spectrum of abnormal behaviors and experiences of clients of varying age, sex, culture and ethnicity.

556 Therapeutic Paradox (3)

Prerequisites: Coun 550, 552, 548, 559B and consent of instructor. An opportunity to examine each of the main treatment models in the framework of therapeutic paradox theory.

557 Research and Development in Counseling and Psychology (3)

Prerequisites: Coun 559C and consent of instructor. A proseminar in the techniques in the development of programs, projects, models and sampling devices including design and construction methodology.

558A Diagnostic Observation II (3)
Prerequisite: consent of instructor. Seminar in personality assessment. Advanced experience in the clinical case study, application of the structures and dynamics of individuals and groups to symptomatic behavior.

558B Personality Study: Projectives (3)
Prerequisite: consent of instructor. Seminar in problems of learning and metalearning. Advanced work in diagnostic testing, clinical interview and interpretation of data, diagnosis and remediation of learning, effort, interpersonal and personal problems, advanced work in dysfunctional communication.

559A,B Fieldwork in Counseling (3,3)
Prerequisites: Coun 551, 552, 555 and consent of instructor. Student will work in a local school and/or other institutional setting under supervision of a local coordinator and university staff. Assignments are on an individual basis. Students will also meet in weekly seminar. May be repeated for credit up to a maximum of 12 units.

559C Fieldwork in Psychometry (3)
Prerequisites: Coun 559A,B and consent of instructor. Students will participate in psychometry activities in their local setting under the supervision of a local coordinator and university staff. Work assignments are made on an individual basis. May be repeated for credit.

559D Fieldwork in School Psychology (3-6)
Prerequisites: Coun 559A,B,C and consent of instructor. Fieldwork in psychological services in the school and/or other institutional settings under the supervision of a local coordinator and university staff. Assignments are made on an individual basis.

595 Advanced Studies (1-3)
Graduate seminars designed to develop professional competencies in such areas as behavior, teaching strategies, educational technology, program development, communication theory and interpersonal relations. May be repeated for credit.

596 Graduate Educational Practicum (1-3)
Prerequisite: consent of instructor. Conduct at a graduate level an educational practicum experience with an individual under the direction of a faculty member. May be repeated for a maximum of six units.

597 Project (1-3)
Prerequisite: consent of instructor. Individual research on an empirical project, with conferences with the instructor, culminating in a project.

598 Thesis (1-3)
Prerequisite: consent of instructor. Individual research with conferences with the instructor, culminating in a thesis.

599 Independent Graduate Research (1-3)
Prerequisite: consent of instructor. Open to qualified graduate students desiring to pursue independent inquiry.

PROGRAMS IN READING

MASTER OF SCIENCE IN EDUCATION

Reading
A program of graduate studies leading to the degree of Master of Science in Education Reading, is authorized by The California State University and Colleges Board of Trustees. The program is designed to help qualified individuals gain the technical knowledge and scholarship requisite to becoming reading specialists. This professional program is based on and combined with sound preparation in the liberal arts and sciences. The curriculum proposes an interdisciplinary approach to the preparation of the professional specialist in the area of reading.

Prerequisites
An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures). In addition, an applicant

must have an approved major and complete an application to the reading program in the Division of Special Programs. He will confer with the graduate program adviser to discuss the prerequisites for attaining classified standing.

A student who meets the requirements for conditionally classified graduate standing, as well as the following requirements, may be admitted as a classified graduate upon the development of an approved study plan: successful teaching experience or other approved experience; a grade-point average of 2.5 or better in academic and related work; sufficient background in reading; a satisfactory interview; and four references from school administrators, school supervisors or professors.

Study Plan

The final adviser-approved program of coursework for the degree must include:

	Units
Master's degree studies	3
Ed-RP 510 Research Design and Analysis (3)	
Courses for the concentration in reading (no grade below B)	27
Ed-R 507 Current Trends in Secondary and College Reading Programs (3), *or* Ed-R 508 Teaching Reading in Today's Elementary School (3)	
Ed-R 516 Etiology of Reading Difficulties (3)	
Ed-R 517 Educational Testing and Reading Instruction (3)	
Ed-R 581 Analysis of Reading Difficulties (4)	
Ed-R 583A Remedial Reading Casework (3)	
Ed-R 583B Remedial Reading Casework (3)	
Ed-R 584 Linguistics and Reading (4)	
Elective(s) Adviser-approved course(s) in reading (3)	
Ed-R 595 Advanced Studies (includes comprehensive examination) (1) *or* Ed-R 597 Project (1) *or* Educ 598 Thesis (1)	
Total	30

For advisement and further information, consult the program graduate adviser.

See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin.*

Lower division courses in reading (Ed-R 101, 201 and 202) and an upper division course (Ed-R 320) are designed to assist students in developing the critical and creative reading skills required for efficient university learning. Ed-R 480 presents an overview of reading education (K-adult) and prepares teachers to assess reading skills and build a curriculum based on the results of continuing assessment.

READING SPECIALIST CREDENTIAL

The Commission for Teacher Preparation and Licensing granted approval to the Institute for Reading to offer the Reading Specialist Credential, effective in September, 1974.

An examination of the course requirements will show overlapping between the Reading Specialist Credential and the Master of Science in Reading degree. With careful planning with a graduate adviser in reading, the student can virtually complete the requirements for both at the same time.

Program pre-entry requirements for the Reading Specialist Credential are as follows:

1. *Methods of teaching reading.* Prior to entering this approved program the students will present evidence (transcripts) demonstrating satisfactory completion of one of the following:
   A. Ryan Act reading methods courses, such as Ed-TE 433 or Ed-TE 440R, or
   B. Teaching of reading examination adopted by Teacher Preparation and Licensing Commission, or
   C. Ed-R 480, The Teaching of Reading (3 units).
   D. Entering students who received teacher training from out-of-state institutions since September 1973, may submit a transcript and catalog course description and petition to have an undergraduate course accepted in lieu of the above.

2. *Teaching experience.* Prior to entering this approved program, both in-state and out-of-state students will present evidence in the form of letters of verification from the district office demonstrating satisfactory completion of one of the following:

A. Two or more years of successful experience teaching reading for at least one instructional period per day in public and/or private elementary and/or secondary schools, this experience to include at least a two grade spread, *or*

B. Two or more years of successful classroom teaching experience, this experience to include at least a two-grade spread, *or*

C. Two hundred fifty or more days of successful and extensive substitute teaching experience, this experience to include at least a two-grade spread, *or*

D. Successful student teaching experience, at least part of which involved the teaching of reading, as well as at least 45 hours of successful experience as a
   — teaching aide in reading
   — reading tutor, this experience to include at least a two grade spread

E. Students whose teaching experience on the above covers less than a two grade span may complete this requirement by tutoring students in Ed-R 581 and Ed-R 583A,B at a grade level at least two years different from previous experience.

Top priority for entering the credential program will be given to those students meeting criteria listed above. Other applicants will be admitted, as space permits, in descending order according to the remaining criteria.

3. *Assessment of experienced reading specialists.* Prior to entering this approved program, the applicant who has served as a school or district reading specialist will be assessed according to the following criteria and have his program planned around the needs revealed by this assessment:

A. Graduates of, or students enrolled in, the Master of Science in Education: Reading from California State University, Fullerton: evaluation of previous course work and experience in light of current requirements by a faculty adviser in an interview and in consideration of transcripts or letters of verification.

B. Graduates of other master's programs with an emphasis in reading, and applicants functioning as reading specialists who have not completed such a degree: evaluation of competencies required under this credential to be completed by a faculty member in conjunction with the applicant in Ed-R 582I, Analysis of Reading Practices: Assessment in Reading (1 unit). Assessment strategies include:

(1) Self assessment of progress toward attaining specified program objectives. Students will rate themselves on a scale of 1-7 on each of the major program objectives. Students who rate themselves
   (a) 1 or 2 on a given objective will be advised to take the appropriate course(s) to meet that objective;
   (b) 3, 4 or 5 on a given objective will be given the opportunity to take a department prepared exam or write a professional paper under the guidance of an instructor which demonstrates that the student has achieved this objective to minimally stated standards. The student may opt to take coursework instead of writing the exam or paper.
   (c) 6 or 7 on the given objective will verify their competency in an oral exam during an interview with a faculty member;
   (d) Students who avail themselves of the oral and/or written evaluation procedures and do not meet previously specified standards will be required to take the required coursework related to these objectives.

(2) Faculty assessment of progress toward attaining specified program objectives, this to include letters of evaluation from supervisory personnel, direct observation by faculty, and/or evaluation of oral or written evaluation.

At the conclusion of the assessment phase, the faculty member will develop a credential study plan which specifies the coursework the student must complete before obtaining the credential.

Program Description

Units

Ed-R 507, Current Trends in Secondary and College Reading Programs (3)
Ed-R 582R Analysis of Reading Practices: Elementary Reading Curriculum (1), *or*
Ed-R 508 Teaching Reading in Today's Elementary School (3) *and*
Ed-R 582S Analysis of Reading Practices: Secondary Reading Curriculum (1)
Ed-R 516 Etiology of Reading Difficulties (3)
Ed-R 517 Educational Testing and Reading Instruction (3)

Ed-R 581 Analysis of Reading Difficulties (4)
Ed-R 583A,B Reading Improvement Casework (6)
Ed-R 584 Linguistics and Reading (4)
Electives and/or support courses (7-8)
Total..... 31-32
Electives include:
Ed-R 582A Analysis of Reading Practices: The ITPA and Reading (1)
Ed-R 582B Analysis of Reading Practices: Cloze Technique—Its Uses in Teaching Reading (1)
Ed-R 582C Analysis of Reading Practices: Individualized Reading (1)
Ed-R 582D Analysis of Reading Practices: Instructional Technology and Reading (1)
Ed-R 582E Analysis of Reading Practices: Research in Reading (1)
Ed-R 582F Analysis of Reading Practices: Writing for Publication, Reading (1)
Ed-R 582G Analysis of Reading Practices: Establishing Reading Laboratories and Learning Centers (1)
Ed-R 582H Analysis of Reading Practices: Reading and the Gifted (1)
Ed-R 582I Analysis of Reading Practices: Assessment of Reading (1)
Ed-R 582J Analysis of Reading Practices: Teaching Reading to Adults (1)
Ed-R 582K Analysis of Reading Practices: Reading and the Ethnically Different Child (1)
Ed-R 582L Analysis of Reading Practices: Reading in Early Childhood (1)
Ed-R 582M Analysis of Reading Practices: The Exceptional Child in Reading (1)
Ed-R 582N Analysis of Reading Practices: Vision and Reading (1)
Ed-R 582O Analysis of Reading Practices: Comparative Reading (1)
Ed-R 582P Analysis of Reading Practices: Fieldwork in a Community Reading Clinic (3)
Ed-R 582Q Analysis of Reading Practices: Evaluation of Textbooks (1)
Ed-R 582R Analysis of Reading Practices: Elementary Reading Curriculum (1)
Ed-R 582S Analysis of Reading Practices: Secondary Reading Curriculum (1).

READING COURSES

101 Reading Development (1)
An elective course for students who wish to improve their reading efficiency. May be repeated for a maximum of three units of credit.

201 Critical Reading Skills (3)
Development of study-skills including textbook analysis, note-taking and study techniques, preparation for examinations and written reports. Close critical reading of selected writings for thorough understanding of general meaning.

202 Vocabulary Building (3)
Development of individual vocabulary through study of characteristics of the language usage, word formation exercises, dictionary practice. Selected reading.

320 Power Reading (3)
Intensive approach to reading improvement intended for the upper division student, with particular emphasis on improvement of rate and comprehension, study skills and critical analysis. Not intended for student who has taken Ed-R 201 or has more than one unit of credit for Ed-R 101.

480 The Teaching of Reading (3)
Curriculum and methods in the teaching of reading in the elementary and secondary schools. Examination and analysis of the approaches to reading in teachers' manuals and guides. Practical experience in preparing lessons in classroom teaching of reading.

507 Current Trends in Secondary and College Reading Programs (3)
Prerequisite: consent of graduate advisor in reading or instructor. Recent research findings on the learner, the teacher, approaches, materials and facilities in the teaching of reading at secondary and college levels.

508 Teaching Reading in Today's Elementary School (3)
Prerequisite: consent of graduate adviser in reading or instructor. Current trends in the teaching of elementary reading, focusing on the teacher as diagnostician and the reading process as continuous and developmental for all learners.

516 Etiology of Reading Difficulties . (3)
Prerequisite: consent of graduate adviser in reading or instructor. Studies of the factors underlying learning disabilities in reading in children, adolescents and young adults.

517 Educational Testing and Reading Instruction (3)
Prerequisite: consent of graduate adviser in reading or instructor. Survey of individual and group intelligence, achievement, interest, aptitude, vocational and personality tests. Theory and practical application of individual and group tests used with students having learning problems.

518 Behavioral Problems in Teaching Reading (3)
Prerequisite: consent of graduate adviser in reading or instructor. Practical application of psychological principles to the diagnosis and management of behavioral problems in elementary and secondary reading classrooms.

519 The Principal's Role in the Effective School Reading Program (3)
Prerequisite: consent of graduate adviser in reading or instructor. Includes techniques for developing the philosophy, goals and objectives of the school reading program consistent with the PPBS format procedures for assessing and developing students' reading ability and methods for providing faculty inservice experiences in reading.

581 Analysis of Reading Difficulties (4)
Prerequisite: consent of graduate adviser in reading or instructor. Analysis and diagnosis of reading difficulties. Techniques and methods of prevention and treatment. Individual remediation of student. Primary through secondary.

582A Analysis of Reading Practices: The ITPA and Reading (1)
Study and application of the Illinois Test of Psycholinguistic Ability to reading development. Course will include theoretical background, administration, interpretation and application of the instrument.

582B Analysis of Reading Practices: Cloze Technique—Its Uses in Teaching Reading (1)
Study of the classroom uses of the Cloze Technique in assessing readability difficulties of material and comprehension of specific material by the learner. Practical application of Cloze principles in teaching specific reading skills.

582C Analysis of Reading Practices: Individualized Reading (1)
Goals and objectives of the individualized program. Assessment, selection and organization of materials. Management of the teacher student conferences, skill development, and a variety of learning opportunities. Evaluation procedures.

582D Analysis of Reading Practices: Instructional Technology and Reading (1)
Overview of instructional technology used in reading such as tachistoscopes, reading pacers, mechanized programmed material. Demonstration and practice in using these materials. Application of instruction technology to planning individual and group reading instruction.

582E Analysis of Reading Practices: Research in Reading (1)
Participation in seminars, related to student and/or instructor-sponsored research. Involvement in action-research projects, including development and evaluation of research procedures.

582F Analysis of Reading Practices: Writing for Publication—Reading (1)
Consideration in depth of the selection, organization, and production of publishable materials concerning problems, strategies, techniques of the teaching of reading improvement.

582G Analysis of Reading Practices: Establishing Reading Laboratories and Learning Centers (1)
Consideration in depth of the necessities and optional features of a reading center deemed appropriate to a specific situation within a particular community.

582H Analysis of Reading Practices: Reading and the Gifted (1)
Techniques of teaching reading to the underachieving and achieving academically gifted child in grades 1-12. Methods of planning and implementing instruction to meet the unique learning abilities and needs of the gifted and to develop higher level thinking skills.

582I Analysis of Reading Practices: Assessment in Reading (1)
Assessment of competencies of the experienced Reading Specialist in preparation for the Reading Specialist credential.

582J Analysis of Reading Practices: Teaching Reading to Adults (1)
Analysis and evaluation of current methods of teaching reading to adults including diagnostic and corrective techniques. Analysis of current research and evaluaton of materials, with emphasis on understanding special needs of the adult learner.

582K Analysis of Reading Practices: Reading and the Ethnically Different Child (1)
Graduate seminar designed to survey the affective side of teaching reading to ethnically different children.

582L Analysis of Reading Practices: Reading in Early Childhood (1)
An overview of basic readiness needs and evaluation instruments with emphasis on techniques and materials for increasing concentration, positive socialization, creativity and learning skills of preschool children.

582M Analysis of Reading Practices: The Exceptional Child in Reading (1)
Survey of the methods and materials to be effectively used in reading instruction with the physically handicapped, emotionally disturbed, learning disabled and slow learner in the regular classroom.

582N Analysis of Reading Practices: Vision and Reading (1)
Study of the relationship between vision factors and reading. Course will include screening techniques, behavioral symptoms and classroom and instructional accommodations to meet vision needs.

582O Analysis of Reading Practices: Comparative Reading (1)
Study of general trends in reading improvement in the United States and in other countries. Emphasis on developmental reading programs.

582P Analysis of Reading Practices: Fieldwork in a Community Reading Clinic (3)
Fieldwork in a community reading clinic for children and adults, including both remedial and developmental instruction.

582Q Analysis of Reading Practices: Evaluation of Textbooks (1)
Formal evaluation of reading textbooks being considered for state adoption. Materials include basals, supplementary and recreational materials, levels K-8 for state textbook adoption.

582R Analysis of Reading Practices: Elementary Reading Curriculum (1)
Modern curriculum and techniques for teaching basic reading skills, K-6.

582S Analysis of Reading Practices: Secondary Reading Curriculum (1)
Modern curriculum and techniques for teaching reading, grades 7-12.

583A,B Remedial Reading Casework (3,3)
Prerequisite: consent of instructor. Fieldwork in diagnosis and remediation in reading through casework technique. Conferences with teachers, parents, consultants, and administrators.

584 Linguistics and Reading (4)
A study of linguistics and its influence on reading materials and instruction. An analysis of trends in reading and changes affected by the science of linguistics.

585 Word Perception Skills in Reading (3)
Study of word perception skills in the process of learning to read. A developmental hygiene of child vision. Visual anomalies and their applications to reading disorders.

595 Advanced Studies (1-3)
Graduate seminars designed to develop professional competencies in such areas as behavior, teaching strategies, educational technology, program development, communication theory and interpersonal relations. May be repeated for credit.

597 Project (1-3)
Prerequisite: consent of instructor. Individual research on an empirical project, with conferences with the instructor, culminating in a project.

598 Thesis (1-3)
Prerequisite: consent of instructor. Individual research with conferences with the instructor, culminating in a thesis.

599 Independent Graduate Research (1-3)
Prerequisite: consent of instructor. Open to qualified graduate students desiring to pursue independent inquiry.

PROGRAMS IN SCHOOL ADMINISTRATION

MASTER OF SCIENCE IN EDUCATION

School Administration

A program of graduate studies leading to the degree of Master of Science in Education with a concentration in school administration has been authorized by The California State University and Colleges Board of Trustees. The principal objective of the curriculum is to prepare carefully selected individuals for certain leadership positions in school administration.

The program is designed to help these individuals gain the technical knowledge and scholarship requisite to high achievement in these positions. This professional program is based on and combined with sound preparation in the liberal arts and sciences. The curriculum proposes an interdisciplinary approach to the preparation of the professional specialist in public education. Thus, those who qualify for the degree should have completed coursework in such fields as philosophy, public administration, psychology, political science, biology, English, sociology, economics, anthropology or history.

Prerequisites

An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures). In addition, an applicant should have a successful teaching experience in an elementary or secondary school, or community college. If such experience is not available, other experience in related fields is a recommended alternative, which must be approved by a graduate adviser before starting the program.

A student who meets the requirements for conditionally classified graduate standing, as well as the following requirement, may be admitted as a classified graduate upon the development of an approved study plan: at least 2.5 grade-point average in previous academic and related work.

Programs of Study

The degree study plan must include 30 units of committee-approved coursework, of which 25 must be at the 500 level. A minimum of 22 units must be in school administration; five units may be assigned on an interdisciplinary basis from courses related to the needs of individual students. Course requirements include field experience and a project.

No more than nine units of postgraduate work taken prior to classified status may be applied to a student's master's degree program.

Students concentrating in school administration will take Ed-SA 503, Foundations for Administrative Leadership, as soon as they identify their interest in this M.S. degree. To continue in the program beyond this course, the student must be granted a "letter of admission to the program" and possess an official Cal State Fullerton program evaluation. Students who desire only isolated courses from the program are normally denied admission to such courses. The advisor-approved 30 units (minimum) on the study plan will include:

	Units
Master's degree studies, supporting courses	8
Ed-RP 510 Research Design and Analysis (3)	
Adviser-approved courses (5)	
Courses for the concentration in school administration	22
All of the following (No grade below C)	
Ed-SA 505 The Supervision of Curriculum (3)	
Ed-SA 561 Governance, Systems, School and Community (3)	
Ed-SA 563 School Personnel Administration (2)	
Ed-SA 564 Seminar in School Law (2);	
Ed-SA 565 Seminar in School Finance, Business Administration and Buildings (2)	
Ed-SA 588 Organization Theory and Management (3)	
Ed-SA 567A,B Fieldwork and Project (2,2)	

One of the following:
Ed-SA 566 Elementary Administration and Supervision (3)
Ed-SA 586 Secondary Administration and Supervision (3)

For advisement and further information, consult the Division of Special Programs. See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin.*

INTERNSHIP IN SCHOOL ADMINISTRATION

A selected number of teachers will be offered the opportunity to study and to practice school administration as school interns in administration. A candidate must obtain admission to the program, and agreement must be reached with a sponsoring school or college district to employ the candidate as a full-time administrator during the school year. The concept of the internship in educational administration is similar to that found in other professional fields. Its basic function is to enable the intern to gain the necessary experience in the performance of the critical tasks of his profession while under the close supervision of a fully-trained and experienced practitioner. It is an opportunity for the university and local school and college systems to work together in training well-qualified school administrators. The internship in educational administration is but one phase of the program for preparing supervisory and administrative personnel for community college, high school, intermediate school, and elementary school positions of leadership. It is an investment in training supervisory leadership from which the cooperating school district, the university and the intern will derive benefit and in which all three have responsibilities. Cooperation among all three is essential to the success of the program.

Internships are for a full academic year and require of all students the completion of a minimum of 21 graduate credits. During the period of the internship the student is required to be a registered graduate student at Cal State Fullerton.

All candidates will be given a temporary credential for supervision and administration according to the regulations of the California Administrative Code, Title V, Section 6555. Such candidates should register in two courses: Ed-SA 561, Governance, Systems, School and Community, Ed-SA 563, School Personnel Administration.

Both courses must be completed in the summer session if the student is to do his internship beginning in the fall semester. Applications for admission to the program should be sent to the chair, Internship Program in School Administration, by June 1. Careful planning of electives will enable candidates to receive the Master of Science in Education with a concentration in school administration upon further study, after completing the requirements for the internship.

ADVANCED CREDENTIAL PROGRAM

School Administration

Candidates in administration, upon completion of the degree requirements for a Master of Science in Education, should qualify for certification as a school administrator at any level providing they have taught three years. As certification requirements change yearly, candidates are urged to have their adviser check their study program against current requirements.

Candidates in administration accepted in the administrator internship program will be issued the standard supervision credential conditionally upon partial fulfillment of requirements according to the California Administrative Code, Title V, Section 6555.

OTHER STUDENTS IN SCHOOL ADMINISTRATION

Experienced school administrators, holding a California administrative credential or a supervision credential and exempt from degree requirements, may register for any course in the school administration concentration. Teachers wishing to take courses in school administration directed at helping them to understand administration problems are welcome to take selected courses.

SCHOOL ADMINISTRATION COURSES

481 Issues in Higher Education (3)
Seminar in structure, governance, administration and challenges of American higher education.

483 The American College and University (3)
Seminar in the development of higher education in the United States with special emphasis on purposes, functions, curriculum, and governance.

485 Introduction to Educational Administration (3)
Introduction to educational administration. Course directed toward better understanding of administrative tasks, processes, and skills involved in the various roles of school personnel in administration. Special attention to the role of the teacher in school administration.

503 Foundations for Administrative Leadership (3)
Prerequisite: consent of instructor. Seminar on cultures and values to which schools must contribute. Introduction to community sociology, tax systems and public administration; the literature of leadership. Screening for admission to program. Course required of all students during their first registration in school administration.

505 The Supervision of Curriculum (3)
Prerequisite: Ed-SA 566 or 586. Seminar on development of a quality program of instruction in both elementary and secondary schools; appraisal of programs of instruction; advanced principles of curricular review and modification. Evaluation of subject matter competence in area of supervisory specialization.

560 Contemporary Problems in School Administration (3)
Seminar on contemporary problems in school organization and administration with particular emphasis on collective bargaining, the computer as a business and educational tool and the needs of urban schooling including the problem of racial isolation.

561 Governance, Systems, School and Community (3)
Structure, functions, trends, fiscal responsibilities and issues in respect to the government of education at federal, state, county and local school district levels. Basic principles in school organization and administration. Community involvement and school-community participation; communication between school and community.

563 School Personnel Administration (2)
Prerequisite: Ed-SA 503 or concurrent enrollment. Seminar on principles of organizational behavior, social processes inherent in effective leadership, and techniques of school personnel management.

564 Seminar in School Law (2)
Prerequisite: consent of instructor. School law as a reflection of public policy. California Education Code and the California Administrative Code, Title 5, and county counsel opinions as they affect administration, instruction, and financial management of public schools. Legal basis for public education in California.

565 Seminar in School Finance, Business Administration and Buildings (2)
Prerequisite: consent of instructor. Emphasis on school finance, business administration and buildings as they implement an effective educational program. A study of financial principles. School revenues and expenditures, budgetary procedures and processes, cost analysis, business management and salary policies.

566 Elementary Administration and Supervision (3)
Prerequisites: Ed-SA 561 and 563. Seminar on leadership roles of elementary school principal and supervisor. Pupil personnel and instructional program in elementary school; working relations and morale among staff, community and pupils; parent education; relations with central district staff; management and recordkeeping functions; teacher evaluation.

567A,B Fieldwork and Project (2,2)
Prerequisites: Ed-SA 566 or 586 or concurrent registration, and consent of instructor. Two-semester terminal sequence required for the M.S. in Education with a concentration in school administration. Includes directed fieldwork in selected public schools and district offices. Supervised project or thesis required for degree. (4 hours fieldwork, 2 hours conference)

568 Seminar for Administrative Trainees (3)
Provides a behavioral analysis approach in the establishment of a sound foundation for educational administrators. The culminating offering of the administrator internship program. Objectives include (1) study of the behavior of human beings and (2) understanding how theory contributes to effective administrative practice.

569 The School in the Community (3)
Seminar on the changing school in the changing community. The school and the community power structure; community involvement and school-community participation; communication between school and community; the power of community education and the community school.

586 Secondary Administration and Supervision (3)
Prerequisites: Ed-SA 561 and 563. Seminar on leadership roles of the secondary school principal and supervisor, pupil personnel and instructional program in secondary schools; development and administration of vocational education; morale among staff, community and pupils; relations with central district staff; management functions; teacher evaluation.

587 Seminar in Financial Resource Allocation (PPBS) (3)
Advanced finance, program budgeting, quality controls, expenditure programs, state-county-local-federal financing. Decision making in assigning financial resources. Financial accountability.

588 Organization Theory and Management (3)
Principles and practices of public school management; planning and practice in task analysis; planning and practice in setting of goals and objectives; implementation of plans related to goals; management tools, social, political and economic forces affecting education; decision making based on factual data as it pertains to education.

589 Staff Evaluation—Supervision (3)
Seminar in group work supervision techniques as they apply to improvement of teaching process; analyzing and focusing role relationships between supervisors, students, teachers, parents; classroom dynamics and role of supervisor in planning and developing educational programs.

599 Independent Graduate Research (1-3)
Prerequisite: consent of instructor. Open to qualified students desiring to pursue independent inquiry.

PROGRAMS IN SPECIAL EDUCATION

MASTER OF SCIENCE IN EDUCATION

Special Education

Prerequisites
An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures).

A student who meets the requirements for conditionally classified graduate standing, as well as the following requirements, may be admitted as a classified graduate upon the development of an approved study plan: (1) a grade-point average of 2.5 or better in previous academic and related work; (2) an approved major; (3) satisfactory interview, references and autobiography.

Study Plan
Students should consult the *Graduate Bulletin* for information concerning standards for graduate study, steps in the master's degree program, and graduate policies and procedures.

	Units
Master's degree studies, supporting courses	9
Ed-RP 510 Research Design and Analysis (3)	
adviser-approved courses outside special education (6)	
Courses for the concentration in special education	21

Adviser-approved courses in special education (18-20)
Ed-SE 595 Advanced Studies including comprehensive examination (3) *or*
Ed-SE 597, Project (3) *or* Ed-SE 598 Thesis (1-3)

Total 30

For advisement and further information, consult the program graduate adviser. See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin*.

ADVANCED CREDENTIAL PROGRAMS

The curriculum in specialist preparation which appears in this section of the catalog is designed to meet the requirements of Teacher Preparation and Licensing Act of 1970 effective in September, 1974. The curricula are subject to change pending approval by the Commission for Teacher Preparation and Licensing. Students are advised to contact the special education office for appropriate publications in the event curricular modifications are introduced by commission action.

Specialist Credentials

Programs leading to four specialist credentials are available. They are:

1. Specialist credential to teach the physically handicapped (including the blind and partially seeing and orthopedically handicapped)
2. Specialist credential to teach the learning handicapped (including the learning disabilities, behavior disorders and educationally retarded)
3. Specialist credential to teach the severely handicapped (including the trainable mentally retarded, severely multiple handicapped, seriously emotionally disturbed and the autistic)
4. Specialist credential to teach the gifted

All specialist training programs include a generic component and advanced specialist component, both of which must be completed in order that a student be credentialed. Completion of the generic component is prerequisite to admission to advanced specialist component training.

Undergraduates wishing to earn an advanced specialist credential can meet the requirements of the generic component of the credential by (a) completing a bachelor's degree with a major in human services with a teaching-learning practicum thrust, and/or completing a bachelor's degree with another major and electing six units of approved coursework in human services (electives in exceptionality), (b) completing the preservice professional training program for a multiple subject credential with student teaching divided between the regular classroom and the special classroom. For details regarding admission to and completion of the multiple subject credential, consult the Division of Teacher Education.

Graduate students entering the advanced specialist program who have completed multiple or single subject preservice training programs with majors other than human service must complete six units of courses in human services (electives in exceptionality) and six units of student teaching with exceptional children. This requirement may be waived upon submission of satisfactory evidence of broad training and experience with exceptional children.

Advanced specialist programs include coursework specific to the master's degree and the several advanced specialist credentials; students may, therefore, elect one of two options upon entry to the program. These are:

1. Advanced specialist credential program
2. Master's degree program.

The advanced specialist program for each credential requires the same course sequence. However, different practicum activity sections are designed to meet the specific needs of each credential. Students seeking recommendation for any of the four credentials listed must satisfactorily complete the following:

Prerequisites

1. Bachelor's degree
2. A multiple subject or single subject credential
3. The specialist generic component of the program, including student teaching with exceptional children (12 units)

Advanced Specialist Credential Requirements *Units*

Ed-SE 463 Exceptionality: Cognitive-Affective Characteristics (3), *or*
Ed-SE 464 Exceptionality: Physical-Sensory Characteristics (3)
Ed-SE 465A,B,C or D* Educational Practices in Exceptionality (4)
Ed-SE 573A,B,C or D* Advanced Practices in Exceptionality (4)
Ed-SE 574 Exceptionality: Noneducational Implications (3)
Ed-SE 575 Exceptionality: Theory, Philosophy and Research (4)
Total (including 12 prerequisite units)..... 30

Advisement is available to any student seeking a credential under the special education program. During registration, the student should consult an adviser in the area in which he expects to major, as well as an adviser in special education, for assistance in selecting courses in his program. A student from another institution should bring transcripts of previous work and a tentative selection of courses. Transferred education courses must be of upper-division level and taken within the past 15 years to be applicable to upper division credential requirements.

SPECIAL EDUCATION COURSES

370 The Personal Quest (3)

An experience-based course exploring the factors contributing to personality. Consideration will be made concerning individual needs, how they are met by the individual, other individuals, society and society's institutions. One objective will be to explore different life styles and attempt to understand how they meet the needs of individuals involved with them.

371 Exceptional Individual (3)

The study of children who deviate from the average in the elementary and the secondary schools; physically handicapped, mentally retarded, gifted, socially maladjusted, and emotionally disturbed. Special educational services, curriculum, procedures, and materials necessary to promote their maximum development.

395 Methods and Techniques of Tutoring (3)

Lecture/Practicum in tutoring theory and methods, use of diagnostic test and survey questionnaires in determining student needs. In conjunction with tutorial practice, student will receive practical training, utilize audiovisual equipment and auto-instructional materials at the Learning Assistance Resource Center.

463 Exceptionality: Cognitive-Affective Characteristics (3)

Seminar in the study of individuals who deviate from the norm with respect to cognitive and emotional functioning including the educable mentally retarded, gifted, slow learner, behaviorally disordered and emotionally disturbed.

464 Exceptionality: Physical-Sensory Characteristics (3)

Seminar in the study of individuals who deviate from the norm with respect to physical-sensory functioning including the visually handicapped, multiply handicapped, physically handicapped, and trainable mentally retarded.

465A Exceptionality Educational Practices with the Learning Handicapped (4)

Corequisite: Ed-SE 464. Curriculum development, methods and materials for teaching the learning handicapped. Lectures, demonstrations and practicum relative to the credential requirements.

465B Exceptionality: Educational Practices for the Severely Handicapped (4)

Corequisite: Ed-SE 464. Curriculum development, methods and materials for teaching the severely handicapped. Lectures, demonstrations and practicum relative to the credential requirements.

465C Exceptionality: Educational Practices for the Physically Handicapped (4)

Corequisite: Ed-SE 464. Curriculum development, methods and materials for teaching the physically handicapped. Lectures, demonstrations and practicum relative to the credential requirements.

465D Exceptionality: Educational Practices for the Gifted (4)

Corequisite: Ed-SE 463. Curriculum development, methods and materials for teaching the gifted. Lectures, demonstrations and practicum relative to the credential requirements.

* See program publications regarding which sections apply to specific credentials.

472 Gifted Children (2)
Prerequisite: Ed-SE 371. Identification, principles of instruction, grouping, individualized instruction, classroom enrichment. Problem solving and research experiences in science, social studies, and mathematics, reading programs and literature, creative writing, oral language.

473 Mental Retardation and Brain Injury (3)
Prerequisite: Ed-SE 371. Organic and cultural basis of mental retardation and brain injury, including social, psychological, and vocational problems. Child growth, sensory development, learning characteristics of mentally retarded and brain injured children, and techniques of working with parents will be considered.

474 Curriculum and Methods for Teaching the Mentally Retarded (3)
Prerequisite: Ed-SE 473. Curriculum development, methods, and materials for teaching the educable and trainable mentally retarded at the elementary and secondary levels.

475 Observation and Individual Instruction with the Mentally Retarded (3)
Prerequisite: Ed-SE 474. Supervised observation and participation with the educable and the trainable mentally retarded at both the elementary and secondary levels of education. (4 hours activity, 1 hour lecture and discussion)

477 The Educationally Handicapped Child (3)
Prerequisite: Ed-SE 371. Behavioral characteristics of the educationally handicapped child, the child with a neurological handicap or a behavioral disorder as defined by the California Education Code. Educational procedures, perceptual and motor training, evaluation, parent guidance.

478 Innovations in Special Education (3-6)
Acquaints teachers and administrators with recent, dynamic and innovative methodologies and concepts related to the atypical child. Emphasis on assisting participants to update their present knowledge and skills through implementing new thought as it relates to special education.

495 Innovative Teaching/Learning Seminar/Practicum (3)
Prerequisite: Ed-SE 395 or consent of instructor. Seminar/practicum in developing and field testing innovative teaching/learning strategies for educationally disadvantaged and other students. Includes assessment of individual tutee's entry skills, specification of terminal behaviors, development, implementation of instructional objectives and evaluation of instructional outcomes.

496 Senior Educational Practicum (1-3)
Conduct at an advanced level an educational practicum experience with educationally handicapped children.

499 Independent Study (1-3)
Prerequisites: senior or graduate standing and consent of instructor. Student will complete individual studies under the direction of faculty member. Studies include experimental, library, or creative projects. Only students of demonstrated capacity and maturity will be approved.

514 Graduate Seminar: Behavioral Research on Children with Learning Disorders (3)
Prerequisite: Ed-RP 510. Critical analysis of behavioral research on children with learning disorders. Resources, criteria for evaluation of studies with exceptional children, historical view of research. Research relating to learning, handicapping conditions, and efficacy of special methods.

521 Group Processes in the Classroom (3)
Prerequisite: Ed-SE 371 or consent of instructor. Exploration of group interaction, teacher sensitivity, and their relevance to educational planning and management. Emphasis: emotionally disturbed, educationally handicapped.

522 Behavior Problems in the Classroom (3)
Prerequisite: Ed-SE 371 or consent of instructor. Identification and management of social and affective disturbances related to school performance. Emphasis: early detection, behavioral modification techniques, parent counseling, interagency cooperation.

523 Learning Problems in the Classroom (3)
Prerequisite: Ed-SE 371 or consent of instructor. Identification and educational management of learning problems. Emphasis: developmental sequences, related prescriptive teaching and remediation techniques.

570 Graduate Seminar in Educational Psychology: Advanced Developmental Psychology (3)

Prerequisite: consent of instructor. Research, theory and practice in the physical-motor development, cognitive-intellectual growth and affective-personality organization of children and adolescents. Focus is given to educational interventions as a means of problem solving.

571 Graduate Seminar in Educational Psychology: Advanced Psychology of Learning (3)

Prerequisite: consent of instructor. Research, theory and practice in the psychology of learning and motivation: motoric, cognitive and affective. Focus on problem-solving situations in which educational intervention is designed to facilitate learning in each domain.

573A Exceptionality: Advanced Practices for the Learning Handicapped (4)

Prerequisites: Ed-SE 463 and 465A. Advanced instruction in the application of educational practices working with the learning handicapped. Seminar and fieldwork practicum will be undertaken at selected sites in the community at large.

573B Exceptionality: Advanced Practices for the Severely Handicapped (4)

Prerequisites: Ed-SE 464 and 465B. Advanced instruction in the application of educational practices working with the severely handicapped. Seminar and field work practicum will be undertaken at selected sites in the community at large.

573C Exceptionality: Advanced Practices for the Physically Handicapped (4)

Prerequisites: Ed-SE 464 and 465C. Advanced instruction in the application of educational practices working with the physically handicapped. Seminar and fieldwork practicum will be undertaken at selected sites in the community at large.

573D Exceptionality: Advanced Practices for the Gifted (4)

Prerequisites: Ed-SE 463 and 465D. Advanced instruction in the application of educational practices working with the gifted. Seminar and fieldwork practicum will be undertaken at selected sites in the community at large.

574 Exceptionality: Noneducational Implications (3)

Prerequisite: admission to graduate status. Consideration of economic and social implications of exceptionality. Advanced investigations regarding different aspects of the adjustment of the exceptional individual to society and of society's accommodation to the individual.

575 Exceptionality: Theory, Philosophy and Research (4)

Prerequisites: admission to graduate status and consent of instructor. A consideration of theories, philosophies and evaluation strategies dealing with exceptional individuals, critical evaluation of research on exceptionality and the consideration of investigatory models for studying exceptionality.

577 Seminar in Program Trends in Special Education (3)

Prerequisites: recommendation of adviser and consent of instructor. A seminar designed for the study of historical development of educational programs for exceptional children. A critical analysis of issues and trends in special education.

578 Administration and Supervision of Special Education (12)

Prerequisite: Ed-SE 577 or consent of instructor. Problems of organization, administration, and supervision of special education programs: finance and attendance, physical facilities, budgeting, needed equipment, community agencies and curriculum development.

595 Advanced Studies (1-3)

Graduate seminars designed to develop professional competencies in such areas as behavior, teaching strategies, educational technology, program development, communication theory and interpersonal relations. May be repeated for credit.

596 Graduate Educational Practicum (1-3)

Prerequisite: consent of instructor. Conduct at a graduate level an educational practicum experience with an individual under the direction of a faculty member. May be repeated for a maximum of six units.

597 Project (1-3)

Prerequisite: consent of instructor. Individual research on an empirical project, with conferences with the instructor, culminating in a project.

598 Thesis (1-3)

Prerequisite: consent of instructor. Individual research with conferences with the instructor, culminating in a thesis.

599 Independent Graduate Research (1-3)
Prerequisite: consent of instructor. Open to qualified graduate students desiring to pursue independent inquiry.

779 Student Teaching with Exceptional Children (5-6)
Prerequisite: consent of instructor. Participation in a class for exceptional children for greater part of every school day. Includes a two-hour seminar each week in problems and procedures for teaching exceptional children. Students doing student teaching in conjunction with multiple subject student teaching will take student teaching for five units. Students entering with mutliple subject or single subject student teaching completed will enroll for six units which includes one unit generic competencies assessment seminar.

DIVISION OF TEACHER EDUCATION

Chair: Paul W. Kane

FACULTY

Betty Jean Barnes, Ida Coppolino, James Cusick, Kenneth Doane,* Mildred Donoghue, Stephanie Edwards-Evans, James Gilmore, Barbara Hartsig, Shirley Hill, Emma Holmes, Bernard Kravitz, Edith McCullough, Eugene McGarry,* Robert McLaren, Bryan Moffet, Donald Pease, Fraser Powlison, Nancy Reckinger, Morris Sica, Robert Simpson

SECONDARY EDUCATION TEACHING METHODS FACULTY

James Alexander (Journalism Education), Arthur Bell (English Education), Carol Chadwick (Music Education), John Cooksey (Music Education), Ron Edwards (Physical Education), Gerald Gannon (Mathematics Education), Kaye Good (Speech Education), Donald Henry (Theatre Education), Jacqueline Kiraithe (Foreign Language Education), Joseph Landon (Music Education), Benton Minor (Music Education), David Pagni (Mathematics Education), Albert Porter (Art Education), Clarence Schneider (English Education), Eula Stovall (Physical Education), H. Eric Streitberger (Science Education), John White (English Education), Charles Williams (Science Education), George Williams (Art Education), Jon Zimmerman (Foreign Language Education)

PART-TIME

Marlita Bellot, William Burns, Dorte Christjansen, Marcia Cook, Margot Coons, Jeanne Fulton, Kathy Hammons, Dan Harrington, Margaret Kelley, Mardel Kolls, Lois Lytle, Rolando Mans, Nelson Rowen, Carolyn Schultz, Shirley Sulack, Michael Trapp.

The courses, programs and services of the division are directed toward the following objectives of students:

1. Master of Science in Education with concentration in elementary curriculum and instruction.
2. Preservice teacher education (elementary school, secondary school, community college).
3. Specialist's Credentials (Ryan Act) Bilingual/Cross-Cultural and Early Childhood Education.
4. In-service teacher education.

Instruction concentrates on the central principles of the school as a basic institution of our culture, the methods and materials associated with effective teaching, and the current and persistent problems that confront teachers, and other professional workers in educational institutions. In addition to using published source materials and attending class sessions for presentations and discussions, many courses require fieldwork in schools, laboratories, clinics and other educational agencies.

PUBLICATIONS AVAILABLE FROM THE DIVISION OF TEACHER EDUCATION

1. Master of Science in Education, Elementary Curriculum and Instruction
2. Admission to Teacher Education Policies
3. Multiple Subject Instruction (elementary teacher education programs)

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*University administrative officer.

4. Single Subject Instruction (secondary teacher education programs)
5. Early Childhood Education Specialist's Credential

PERSONNEL SERVICES FOR TEACHER EDUCATION STUDENTS

Advisement concerning teacher education is available in the Division of Teacher Education for programs in multiple subject instruction, single subject instruction, the specialist in early childhood, and the specialist in bilingual/cross-cultural and the Master of Science in Education with concentration in elementary curriculum and instruction. Students should consult with the coordinators of elementary or secondary teacher education and other faculty members in selecting courses for the basic teaching credential and either of the specialists' credentials. Graduate students interested in the master's degree program should consult with the graduate coordinator. Transfer students should have transcripts of previous work available.

Students seeking the basic teaching credential in single subject instruction should also consult with teacher education advisers in the departments of their major. Departments having these advisers are Art, Communications, English, Foreign Languages and Literatures, Mathematics, Physical Education, Music, Science, Education, Speech Communication and Theatre. Advisement for the social sciences and business education is available in the Division of Teacher Education.

APPLICATION FOR CREDENTIALS FOR TEACHING

The teacher education programs meet the requirements of the State of California for the basic teaching credential. Upon completion of these requirements, the candidate for the credential can submit his application to the Commission for Teacher Preparation and Licensing with the credential analyst at the university office of Admissions and Records. On those applications, the student is asked about his citizenship status, his professional conduct, and is asked to sign an oath of allegiance. He must also submit a statement of his physical and mental condition signed by a qualified physician, one fingerprint-identification card and the legal fee, which is currently $20.

CREDENTIAL PROGRAMS

MULTIPLE SUBJECTS INSTRUCTION (ELEMENTARY)

ADMISSION TO THE MULTIPLE SUBJECT PROGRAM

Before being permitted to enroll in a credential program, the student must have made formal application, been screened and been formally admitted to teacher education through the School of Education. The student will be permitted to apply for admission to teacher education in the semester previous to beginning his professional program. Students interested in the Track I program of the multiple subjects credential will submit their applications at the beginning of their second semester of the junior year. Students who want the Track II program of the multiple subjects credential will submit their applications at the beginning of the first semester of the junior year. A faculty committee will review information concerning the applicant's intellectual resources, command of fundamental skills of communication, scholarship, personality and character, interest in teaching and health. When more qualified students apply for admission to teacher education than can be accommodated during a given semester, applicants will be ranked and those with the highest rank selected. Qualified candidates who are not admitted may reapply during subsequent semesters. Information concerning the criteria and the procedures for admission to teacher education may be obtained in the Office of Teacher Education.

CURRICULUM IN ELEMENTARY SCHOOL TEACHER EDUCATION*

The program leading to the recommendation for the multiple subjects credential includes:

1. A bachelor's degree from an approved institution.
2. A fifth year of college or university postgraduate education taken at the upper division or graduate level. (If the student does not complete all requirements, a preliminary credential may be awarded at the end of four or more years of work if he has a bachelor's degree from an approved institution and has completed the student teaching requirement.)

* Regulations for the credential are subject to change by the state; any curricular changes will be available in later university publications.

3. A breadth of knowledge in subject matter to help in teaching. Students who plan to secure the multiple subjects credential should acquire breadth of knowledge by taking coursework in each of the following areas:
   A. English, including grammar, literature, composition and speech
   B. Humanities and the fine arts
   C. Mathematics
   D. Physical education
   E. Science, including life and physical sciences
   F. Social sciences
   G. Passage of a subject matter examination or a major with an approved waiver.

   Because schools exist in a culturally pluralistic society, teacher candidates are also encouraged to take courses in the Chicano studies, Afro-ethnic studies and Indian studies programs.
4. Professional education requirements which are currently met by the following programs:
   Track I—Two-semester sequence (See note below)

   First Semester:
   Ed-TE 430A Foundations in Elementary School Teaching (3)
   Ed-TE 430B Curriculum and Methods in Elementary School Teaching (3)
   Ed-TE 430C Supervised Fieldwork in Elementary School Teaching (3)
   Ed-TE 433 Reading Instruction in the Public Schools (3)

   The first semester of Track I entails an all-day commitment, from 8:30 a.m. to 3 p.m. daily.

   Second Semester:
   ◊Ed-TE 439A Student Teaching in the Elementary School (10)
   Ed-TE 439B Seminar in Elementary School Student Teaching (2)

   The second semester of Track I entails an all-day commitment of time.

   Track II—Three-semester sequence (See note below)
   First Semester
   Ed-TE 407 Principles of Teaching and Learning in the Elementary School (3);
   Ed-TE 433 Reading Instruction in the Public Schools (3)

   The first semester of Track II entails a commitment during the morning hours.

   Second Semester
   Ed-TE 435A Strategies of Teaching (4)
   Ed-TE 435B Supervised Fieldwork in Elementary Teacher Education (2)

   The second semester of Track II entails a commitment during the morning hours.

   Third Semester
   ◊Ed-TE 439A Student Teaching in the Elementary School (10)
   Ed-TE 439B Seminar in Elementary School Student Teaching (2)

   The third semester of Track II entails an all-day commitment of time.
   Ed-TE 314 Drugs and Human Development (1), or the equivalent must be taken by all multiple subjects candidates.

ADMISSION TO STUDENT TEACHING

The credential candidate must submit his application for student teaching by October 15 or March 1 of the semester preceding the semester in which the student expects a student teaching assignment. The application for admission is submitted to either the coordinator of elementary or secondary teacher education.

◊Note: Admission to the university does not include admission to the multiple subjects credential program. Admission to teacher education does not include admission to student teaching.

The application for student teaching is part of the continuous process of evaluating credential candidates on their suitability for elementary and secondary school teaching. Information concerning the criteria and procedures for admission to student teaching, along with the application, may be obtained from the Office of Teacher Education. Admission to teacher education does not include admission to student teaching. Each student is responsible for meeting the requirements and following the procedures for admission.

SINGLE SUBJECT INSTRUCTION◊ (Secondary Cooperative Teacher Education Program)

1. **Admission To The Program**

The application forms for admission to the program are available in the Division of Teacher Education. To become a candidate for the secondary school teacher education program the student must be enrolled in good standing in the university and must be admitted to teacher education through the Office of Admission to Teacher Education. The student may apply for admission to teacher education at the beginning of the semester previous to the semester in which he is within six units of completing his major (usually as a second semester junior). Admission to teacher education is for the semester in which the student begins his professional coursework. If the student is admitted and does not enroll in the program, he must reapply in a future semester.

If the student is not admitted, he may reapply in a future semester. A faculty committee, including faculty in the major department, will review information concerning the applicant's intellectual resources, command of fundamental skills of communication, scholarship, personality and character, interest in teaching, and health. The minimum overall grade-point average and the minimum grade-point average in the major is 2.5.

When more qualified students apply for admission to the program than can be accommodated during a given semester, applicants will be ranked and those with the highest rank selected.

Students should consult with advisers prior to making application to the program usually by the beginning of the junior year for the purpose of establishing competency in the fundamental skills. Courses or examinations are available in the areas of English and speech that will assist in meeting specific competencies in fundamental skills. It is also important that credential candidates for single subject instruction in majors that are subsumed in the single subjects listed in the basic teaching credential (See requirements for the credential listed below) seek advisement on coursework outside of their major from teacher education advisers. This coursework can be planned in conjunction with meeting general education requirements or planning for completing a minor listed in this catalog:

Because schools exist in a culturally pluralistic society, teacher candidates are also encouraged to take courses in the Chicano studies, Afro-ethnic studies and Indian studies programs.

2. **Requirements and Curriculum in the Secondary Cooperative Teacher Education Program The Basic Teaching Credential Under the Ryan Act**

The program leading to the recommendation for the single subjects credential includes the following:

A. *A baccalaureate degree* or higher degree, except in professional education from an approved institution.

B. *A fifth year of study* to be completed within five years of the first employment. A preliminary credential can be granted upon the completion of the baccalaureate degree and student teaching.

C. *An approved program of professional preparation.* This refers to the completion of the professional program at Cal State Fullerton described in this document.

◊Regulations governing the credential are subject to change by the Commission for Teacher Preparation and Licensing; changes will be available in later university publications.

D. *Passage of a subject matter examination or its waiver.* The Ryan Act does not specify majors and minors, nor does it specify levels of teaching. Authorization for teaching is specified under only one teaching credential in either multiple subjects or in single subjects instruction. *Multiple subjects instruction means* the practice of assignment of teachers and students as is commonly practiced in California elementary schools.

Single subjects instruction means the practice of assignment of teachers and students to specified subject matter courses as is commonly practiced in California senior high schools and most California junior high schools.

Although this program is described here as a program in secondary school teacher education, it is in fact, the program of preparation for the teaching of single subjects as defined by the Ryan Act. Single subjects categories provided for in the Ryan Act related to this university's offerings are: English, physical science, life science, mathematics, social science, history, government, physical education, business, music, art, and languages including but not limited to French, Spanish, Russian and German. Other single subjects included in the Ryan Act but not offered at this university are industrial arts and home economics. Other subject matter areas are subsumed, as directed by the commission in the above categories.

Subject matter examinations in the above categories will be available after the commission completes the procedures for examinations. Contact the School of Education for further information.

E. *Demonstration of a knowledge of the various methods of teaching reading, to a level deemed adequate by the commission, by successful completion of a program of study approved by the commission or passage of commission-approved reading examination.*

The course in instruction in reading for secondary school teaching meets this requirement. This requirement is optional for candidates in art, music and physical education. It is recommended especially for candidates in these fields who seek authorization to teach in other subject fields.

3. **Curriculum in Secondary School Teacher Education (Prerequisite—Admission to Teacher Education)**

This is a two-semester program designed around extensive fieldwork in secondary schools. In the first semester the candidate for the credential is assigned to a learning center (a cooperating secondary school) daily from 8:30 a.m. to 12 noon. He meets in seminars and workshops on the university campus daily from 1 p.m. to 3 p.m. For this semester he is registered in:

Ed-TE 440F Supervised Fieldwork in Secondary Schools (2)
Ed-TE 440R Instruction in Reading for Secondary School Teaching (3)
Ed-TE 440S Foundations of Secondary School Teaching (4)
Educ 442 Teaching—in the Secondary School (3) (methods class in the major offered by either the major department or the School of Education)

This is a block program integrating field experience and subject matters to meet specific competencies required of a secondary school teacher. The entire block must be taken in one semester. In the second semester the student registers for full-time student teaching, and in most cases does his student teaching in the same learning center to which he was assigned in the first semester. Student teaching should be completed in the semester following the block program. Courses in the second semester of the two semester program:

Ed-TE 449A Student Teaching in the Secondary School (10)
Ed-TE 449B Student Teaching Seminar (2)
Ed-TE 314 Drugs and Human Development (1) or the equivalent must be taken by all single subjects candidates.

4. **Admission to Student Teaching**

The credential candidate submits a formal application for student teaching by October 15 or March 1 in the first semester of the two-semester program. This application is part of the continuous process of evaluating credential candidates and their suitability for teaching in the secondary schools and their progress in acquiring competencies necessary

for single subjects instruction. These evaluations will come from cooperating teachers and faculty working with the candidates in the program. Further information concerning the criteria and procedures for admission to student teaching, along with the application, will be available in the Division of Teacher Education. Since student teaching is done on a full-time basis, student teachers will be limited to one additional course for that semester. Students may take this course only in the late afternoon or evening.

CREDENTIAL PROGRAMS

EARLY CHILDHOOD EDUCATION SPECIALIST'S CREDENTIAL

The Early Childhood Specialist's Credential, as authorized by the Teacher Preparation and Licensing Law of 1970 (Ryan Act), is granted through the university program approved in 1974 by the commission which oversees the law's implementation. The 20-unit program develops competencies in teaching and in supervision of educational programs for children at preschool, kindergarten and primary levels. The culminating experiences of the credentialing program include work in field settings which is planned so as to coordinate with candidates' personal teaching schedules.

Admission to the Early Childhood Program

Students with a basic teaching credential (elementary/multiple subjects), or those who are satisfactorily completing work toward it, may declare the Early Childhood Specialist's Credential as an objective for postbaccalaureate study and apply for admission to the program.

Program of Study

The following coursework will be developed into a study plan in consultation with an adviser:

Ed-TE 437 Early Childhood Education (3)
Ed-TE 526 Differentiated Staffing in Public Schools (3)
Ed-TE 527 Graduate Seminar in Developmental Psychology: The Human from Conception Through Eight Years (3)
Ed-TE 538 Graduate Studies: Early Childhood Education (3)
Ed-TE 591A Fieldwork and Seminar in Early Childhood Education (emphasis on teaching) (4)
Ed-TE 591B Fieldwork and Seminar in Early Childhood Education (emphasis on supervision) (4)

BILINGUAL/CROSS-CULTURAL SPECIALIST'S CREDENTIAL

The Bilingual/Cross-Cultural Specialist's Credential as authorized by the Teacher Preparation and Licensing Law of 1970 (Ryan Act) is granted through the university program approved in 1974. The program has been developed cooperatively by the Department of Chicano Studies, the Department of Foreign Languages and Literatures, and the School of Education working with the university's Board of Bilingual/Cross Cultural Studies. The 24-unit program develops specific competencies for teachers and resource personnel in bilingual/cross-cultural programs from kindergarten through the 12th grade. The credentialing program includes experiences in language and culture of the target population, techniques and methods for bilingual/cross-cultural education, linguistics, fieldwork and community involvement planned to coordinate with candidates' personal teaching schedules.

Admission to the Bilingual/Cross-Cultural Specialist's Credential Program

Students with (1) a basic teaching credential (elementary/multiple subjects or secondary/single subjects), or those who are satisfactorily completing work toward it, and (2) a Spanish language competency equivalent to at least two years of college or university Spanish, may declare the Bilingual/Cross-Cultural Specialist's Credential as an objective for post-baccalaureate study and apply for admission to the program.

Program of Study

The following coursework will be developed in a study plan in consultation with an adviser. Students who have equivalent competencies prior to entry in the program will be advised as to how to obtain credit for such competencies.

Ed-TE 454 Bilingual Education in the United States (3)
Ed-TE 461 Instructional Techniques in Bilingual Education (3)

Ed-TE 462 Fieldwork in Bilingual Education (3)
Spanish 466 Introduction to Spanish Linguistics (3)
Spanish 467 Dialectology: Current Trends in Modern Spanish (3) *or*
Spanish 468 Spanish-English Contrastive Analysis (3)
Foreign Languages Ed 443 Principles of Teaching English to Speakers of Other Languages (3)
Foreign Languages Ed 450 Spanish Classroom Vocabulary (optional) (3)
Chicano Studies 450 Chicano Contemporary Issues (3)
Chicano Studies 445 History of the Chicano (3).

GRADUATE PROGRAMS
MASTER OF SCIENCE IN EDUCATION

This degree is reserved for professionally qualified graduate students who desire to prepare for or advance their careers in elementary curriculum and instruction.

Prerequisites

An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures).

A student who meets the requirements for conditionally classified graduate standing, as well as the following requirements, may be admitted as a classified student upon the development of an approved study plan: a basic teaching credential or equivalent experiences, an approved major (minimum of 24 units upper division or graduate), a 2.5 grade-point average on previous academic and related work, satisfactory interview, references and an autobiography. Credit will be given for previous postbaccalaureate studies when possible. Otherwise well-qualified students may be admitted with limited subject or grade deficiencies, but these deficiencies must be removed. Grade-point average deficiencies may be removed by a demonstration of competency in the graduate program.

Programs of Study

The adviser-approved 30 units (minimum) on the study plan will include the following:

Units

Coursework outside elementary education 9

Two of the following:
Ed-TE 406 Educational Sociology (3)
Ed-TE 436 Child Study Techniques for Teachers (3)
Ed-TE 501 Philosophy of Education (3)
Ed-TE 509 Theory and Practice in Educational Measurement (3)
Ed-TE 510 Research Design and Analysis (3)
Ed-TE 526 Differentiated Staffing in Public Schools (3)
Ed-TE 527 Graduate Seminar in Developmental Psychology (3)
Ed-TE 529 Graduate Studies: Learning Theory for Classroom Use (3)
Ed-TE 538 Graduate Studies in Elementary Education: Early Childhood Education (3)
Other adviser-approved courses (3)

Coursework in elementary education 15

Ed-TE 536 Curriculum Theory and Development in the Elementary School (3)
Three of the following:
Ed-TE 530 Graduate Studies in Elementary Education: Second Languages (3)
Ed-TE 531 Graduate Studies in Elementary Education: Language Arts (3)
Ed-TE 532 Graduate Studies in Elementary Education: Mathematics (3)
Ed-TE 533 Graduate Studies in Elementary Education: Science (3)
Ed-TE 534 Graduate Studies in Elementary Education: Social Studies (3)
Ed-TE 535 Graduate Studies in Elementary Education: Reading (3)
Ed-TE 537 Graduate Studies: Current Issues and Problems (3)
One of the following:
Ed-TE 597 Project (1-3; total of 3)
Ed-TE 598 Thesis (1-3; total of 3)

Electives selected with approval of the adviser..... 6
For further information, consult the chair.

See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin.*

TEACHER EDUCATION COURSES

210 The Teaching Experience: Exploration (3)
Exploration of one's self in relation to other people in the schools and an encounter with the teaching experience, through fieldwork. Accompanying seminar to help students extend their observations and explore relevant issues. (4 hours fieldwork, 1 hour seminar)

301 The Educated Man (3)
Prerequisite: junior standing or consent of instructor. Various conceptions of the nature, concerns and activities of a truly educated person are studied: the humanitarian ideal; aspects of human freedom; and the relation of science to culture.

302 The Campus in Transition (3)
Prerequisite: junior standing or consent of instructor. Study of the history and development of American higher education. The roots of change and campus unrest are examined.

303 Education and Its Critics (3)
Examination of the criticisms of contemporary education and of proposals for reform. Includes visits to a variety of schools. Designed for all students. Not a part of the credential program.

304 Contemporary Educational Change (3)
Emphasis on the changing educational scene in elementary and secondary levels. The quest for greater flexibility, better methods of teaching, improved staffing patterns and accountability serve as the course foundation.

305 School and Society (3)
Stability and change in contemporary society viewed in terms of the decline of traditional values and culture and the rise of legal-rational institutions. Urban life, social class, race relations and family organization will be examined.

308 Education of Various Cultural Groups: Early Childhood (3)
Designed for Head Start personnel and others engaged in the early education of culturally different children. Focus will be on development of learning, curriculum content, and methodology. (2 hours lecture, 2 hours activity)

309 Fieldwork in the Education of Various Cultural Groups (3)
Observation and participation in classes for various cultural groups. Integrated with coursework in Education of Various Cultural Groups. Must be taken concurrently with Ed-TE 308. (9 hours laboratory)

310 The Teaching Experience: Participation (3)
Active participation in school classrooms and analysis of the experience. Accompanying seminar will help students to analyze their fieldwork experiences. (4 hours fieldwork, 1 hour seminar)

312 Human Growth and Development (3)
Prerequisite: Psych 101. A comprehensive study of human growth and development with emphasis on childhood, adolescence and middle and old age. Includes mental, social, emotional and physical development.

314 Drugs and Human Development (1)
Examines substance abuse in relation to personal development, social stress, and physiological and psychological effects. Emphasizes methods of exploring values and making decisions in regard to substance abuse.

340 Principles and Curriculum Secondary Education (3)
Principles of secondary education in the United States: organization, curriculum, and teaching practices. Two hours of observation per week in selected junior and senior high school classes. (2 hours lecture, 2 hours fieldwork)

385 Infancy and Early Childhood (3)
The physical growth and social and personality development of the human through the sixth year of life.

386 Adolescence (3)
A study of the physical, social and cultural development of human adolescence and youth. Particular attention is given to contemporary factors producing change.

401 Social Foundations of Education (4)
Seminar in philosophical, historical and sociological foundations of education, considered in the light of their influence on contemporary educational theory and practice in the United States.

402 Comparative Education (3)
A seminar centered in study of the various countries' education patterns, as part of the cultural setting in which found; designed to deepen insight into our own culture's educational program and offer bases for comparative evaluation with other systems.

403 History of Education (3)
The main streams of educational history in Europe and America, with particular emphasis on the ways these main streams have affected the current scene in the United States.

406 Educational Sociology (3)
The school in the social order; the school as a social system; analysis of cultural factors affecting the school; the special culture of the school; roles and role conflicts in the school; policy questions flowing from social issues and school-cultural relationships.

407 Principles of Teaching and Learning in the Elementary School (3)
Prerequisites: admission to the Teacher Education Program (Elementary). The course relates theories of learning and theories of child growth and development to effective teaching in elementary schools. The appropriate foundations of instructional practices are examined. Fieldwork in the public schools is part of the course.

408 Ghetto Schools (3)
A study of the schools in the inner city, including educational issues related to or stemming from poverty, cultural differences, often inappropriate curricula, limited communication between parents and the system, and other problems.

410 The Teaching Experience: Field Investigation (3)
Prerequisite: consent of instructor. Development of field investigation in area of interest. Includes needs assessment, study proposal, implementation of study and presentation of findings. Accompanying seminar. (4 hours fieldwork, 1 hour seminar)

429 Individualized Instruction (3)
The principles and operational components of individualized teaching and learning. Emphasis on practical classroom implementation of individualized instructional strategies.

430A Foundations in Elementary School Teaching (3)
Prerequisite: admission to teacher education. A study of children's learning styles, and their overall growth and development with the aim of helping future elementary teachers acquire the behaviors necessary for effective teaching. To be taken concurrently with Ed-TE 430B,C and 433.

430B Curriculum and Methods in Elementary School Teaching (3)
Prerequisite: admission to teacher education. A study of elementary school curricula, instructional materials, and teaching techniques with the aim of helping future elementary teachers acquire the behaviors necessary for effective teaching. To be taken concurrently with Ed-TE 430A, C, and 433.

430C Supervised Fieldwork in Elementary Teacher Education (3)
Prerequisite: admission to teacher education. Students will serve as teacher participants in an assigned elementary school classroom to apply information learned in the following courses which must be taken concurrently: Ed-TE 430A,B and 433.

433 Reading Instruction in Public Schools (3)
Prerequisite: admission to teacher education. Experience in the teaching of reading which students will demonstrate the behavior necessary to work with children in public school.

435A Strategies of Teaching (4)
Prerequisites: Ed-TE 407 and 433. A course dealing with implementation of principles of learning and teaching in the subject areas taught in the elementary schools. The approach is to focus on teacher tasks rather than on subject areas. Examples from the subject areas will be used in the examination of teacher tasks.

435B Supervised Fieldwork in Elementary Teacher Education (2)
Prerequisites: admission to teacher education, Ed-TE 407 and 433; Ed-TE 435A is to be taken concurrently. Students will serve as teacher aids in an assigned elementary school classroom to apply information learned in Ed-TE 407, 433 and 435A.

436 Child Study Techniques for Teachers (3)
Prerequisite: consent of instructor. Techniques the classroom teacher may use in understanding individual children within his classroom who do not respond to the teacher and his peers in typical ways.

437 Early Childhood Education (3)
Prerequisite: consent of instructor. Study of current literature and recent research in the area of education of young children through individual and group study. Emphasis will be placed on problems centered in cognitive processes, content, structure and instruction at this level.

439A Student Teaching in the Elementary School (10)
Prerequisites: Ed-TE 430A,B,C, 433 and admission to student teaching. Participation in a regular elementary school teaching program for the full school day. Concurrent enrollment in Educ 439B is required.

439B Seminar in Elementary Student Teaching (2)
Prerequisites: Ed-TE 430A, B,C, 433 and admission to student teaching. Seminar in problems and procedures of elementary school teaching. Concurrent enrollment in Ed-TE 439A is required.

440F Supervised Fieldwork in Secondary Schools (2)
Prerequisites: admission to teacher education. Observation and participation in instruction in secondary school learning centers 3 hours daily. Fieldwork associated with Ed-TE 440R, 440S and 442. Taken concurrently with these courses. Replaces Ed-TE 340, 496, and 449.

440R Instruction in Reading for Secondary School Teaching (3)
Prerequisites: admission to teacher education. Instruction in developmental reading for prospective teachers in single subjects. Taken concurrently with Ed-TE 440F, 440S and 442.

440S Foundations Secondary School Teaching (4)
Prerequisites: admission to teacher education. Includes development of teaching competencies related to adolescent development, the learning process and diagnosis of learning problems, evaluation of pupil achievement, and cultural differences in secondary school youth. Taken concurrently with Ed-TE 440F, 440R and 442. Replaces Ed-TE 411.

442 Teaching—in the Secondary School (3)
Prerequisite: admission to teacher education. Required before student teaching of students presenting major in following areas or subjects.

Art Ed 442 Teaching Art in the Secondary School (3)
Educ 442 Teaching Business in the Secondary School (3)
Educ 442 Teaching Social Science in the Secondary School (3)
Engl Ed 442 Teaching English in the Secondary School (3)
For Langs Ed 442 Teaching Foreign Languages in the Secondary School (3)
Journ Ed 442 Teaching Journalism in the Secondary School (3)
Math Ed 442 Teaching Mathematics in the Secondary School (3)
Mu Ed 442 Principles and Methods of Teaching Music in the Public Schools (3)
PE 442 Teaching Physical Education in the Secondary School (3)
Sci Ed 442 Teaching Science in the Secondary School (3)
Speech Ed 442 Teaching Speech in the Secondary School (3)
Theatre Ed 442 Teaching Theatre in the Secondary School (3)

445 Junior High School Education (3)
Prerequisite: Ed-TE 442 or 331. Seminar on principles of junior high education. Purposes, curriculum, and organization of the junior high school including examination of recent innovations and proposals. For students with elementary or secondary backgrounds interested in this level.

446 Secondary School Curriculum (3)
Prerequisite: student teaching or teaching experience or consent of instructor. Fundamentals of curriculum development. Seminar on current issues within secondary education. Curricular organization and current practices. Survey and evaluation of newer curricular programs.

448 Social Studies Simulation Games (2)
A discussion-laboratory course in which students will study simulations, get acquainted with

and play a number of commercially available simulations, and design and play their own. For teachers and prospective teachers of the social studies elementary and secondary schools.

449A,B Student Teaching in the Secondary School and Seminar (12)

Prerequisite: admission to student teaching. Full-time student teaching.

451 Principles of Educational Measurement (3)

Development, validation, and application of the principles of educational measurement. Construction and use of informal and standardized achievement tests. Summary and interpretation of results of measurement.

454 Bilingual Education in the United States (3)

Prerequisites: Some knowledge of bilingual education. Helpful, but not necessary ability to converse in another language (preferably Spanish). Study of bilingual education in the United States; the literature, the laws, the history and the impact such educational programs have had on the speaker of the foreign languages in the United States.

461 Instructional Techniques in Bilingual Education (3)

Designed to develop instructional techniques in bilingual education. Analyzes purposes, philosophies and concepts of bilingual education. Identifies theories of language learning, cultural differences in learning processes and methodologies of bilingual instruction.

462 Fieldwork in Bilingual Education (3)

Fieldwork in bilingual settings, designed for the student in the Bilingual/Cross-Cultural Specialist Credential. The student must be enrolled in the program and be in the second semester of training.

491 Audiovisual Education (2)

Media in communication, psychological bases, development, curricular function, evaluation. Survey of equipment and materials available, preparation of instructional materials for classroom use. (1 hour lecture, 2 hours activity)

492 Television in the Classroom (2)

Television as a vehicle for instruction, information and enrichment. General theory of media in classroom, psychological bases, curricular capabilities and limitations of equipment. Responsibility of the classroom teacher, practice in utilization process. (1 hour lecture, 2 hours activity)

493 Production of Audiovisual Materials (2)

Exploration and development of audiovisual materials. Students will participate in scriptwriting, story-board, photography and tape production. Experience will be provided in producing graphics, charts and bulletin boards. (1 hour lecture, 2 hours activity)

496 Senior Educational Practicum (1-3)

Conduct at an advanced level an educational practicum experience with an individual under the direction of a faculty member. May be repeated for a maximum of six units of credit.

499 Independent Study (1-3)

Prerequisites: senior or graduate standing, consent of instructor and division prior to registration. Individual investigation under supervision of a faculty member. Only students of demonstrated capacity and maturity will be approved; adequate prerequisite study necessary. May be repeated for credit.

501 Philosophy of Education (3)

Prerequisites: postgraduate standing and Ed-TE 339 or 439A,B or 749, or consent of instructor. Uses of theories of knowledge, value and reality in dealing with educational problems; application of contemporary systems of thought to education.

509 Theory and Practice in Educational Measurement (3)

Introduction to concepts, theory, and procedures for construction of informal and standardized tests. Application of measurement theory and statistical techniques toward problems of analysis, scaling, norming, and interpretation. Practice in item writing for tests and analysis of commercial standardized tests.

511 Survey of Educational Research (3)

Prerequisites: Ed-TE 509, teaching experience. Review of descriptive statistics and statistical inference as applied to educational problems. Analysis of representative research papers. Principles of research design. Prepare a research proposal.

525 Seminar for Secondary Education (3) (Formerly 547)
Prerequisite: Educ 749 or consent of instructor. Persistent problems in secondary education and survey of related literature, causes of and solutions for these problems. Application of scientific method to educational problems, sources of educational research, and to techniques of cooperative thinking.

526 Differentiated Staffing in Public Schools (3)
Prerequisite: teaching credential or consent of instructor. Seminar in the study of the processes and techniques in working with parents, paraprofessionals, specialists and community people. Includes basic principles of supervision and interaction with adults.

527 Graduate Seminar in Developmental Psychology: The Human from Conception Through Eight Years (3)
Prerequisites: teaching, credential or consent of instructor. The physical, social, cognitive-intellectual and emotional development of human individuals from conception to middle childhood is the subject of this seminar. Current problems, theories and research are given emphasis.

529 Graduate Studies: Learning Theory for Classroom Use (3)
Major theories of learning. The use of major theoretical positions in planning and interpreting classroom practices. Educational research findings supporting major theories, implications for curriculum developments and teaching practices.

530 Graduate Studies in Elementary Education: Second Languages (3)
Prerequisite: consent of instructor. Seminar for the study of pertinent investigations and their application in the classroom together with significant curriculum developments and organization in the area of second language learning in the elementary school, including English as a foreign language.

531 Graduate Studies in Elementary Education: Language Arts (3)
Prerequisite: consent of instructor. Seminar for advanced study of trends and problems in teaching the fundamental skills of communication in the elementary school. Analysis of research in the language arts and related disciplines as background for curriculum development.

532 Graduate Studies in Elementary Education: Mathematics (3)
Prerequisites: Math Ed 103A, Ed-TE 439A,B, or consent of instructor. Seminar for the study of significant research, curricular developments and materials, criteria for planning and improving mathematics programs and instruction.

533 Graduate Studies in Elementary Education: Science (3)
Prerequisite: Ed-TE 439A,B, or consent of instructor. Seminar for the study of significant research in elementary school science. Criteria for planning and improving science programs and the development of materials.

534 Graduate Studies in Elementary Education: Social Studies (3)
Prerequisite: Ed-TE 339 or 439A,B, or consent of instructor. Seminar for the study of significant research developments and materials, criteria for planning and improving social studies programs and current techniques of teaching.

535 Graduate Studies in Elementary Education: Reading (3)
Prerequisite: Ed-TE 339 or 439A,B, or consent of instructor. Seminar in advanced study of trends and issues in teaching reading in elementary schools. Analysis of research or background for curriculum development and instructional procedures.

536 .Curriculum Theory and Development in the Elementary School (3)
Prerequisite: Ed-TE 439A,B, or consent of instructor. Seminar for the study of the elementary school curriculum including the forces operating on the curriculum and the participants involved in curriculum building. Emphasis also placed on the process of curriculum building.

537 Graduate Studies: Current Issues and Problems (3)
Prerequisite: Ed-TE 439A,B, or consent of instructor. A study of problems and issues in elementary education, their causes and possible solutions.

538 Graduate Studies in Elementary Education: Early Childhood Education (3)
Prerequisite: teaching credential or consent of instructor. Exploration of the implications of research for curriculum development and instructional planning. Study of the ways in which different views of human development and learning have affected programs in early childhood education.

591A Fieldwork and Seminar in Early Childhood (4)
Prerequisite: Ed-TE 538 or consent of instructor. Provides candidates with an opportunity to demonstrate instructional abilities in working with children, parents, professionals, and members of the community.

591B Fieldwork and Seminar in Early Childhood (4)
Prerequisite: Ed-TE 538 or consent of instructor. Provides candidates with opportunities to demonstrate supervisory, coordinating and administrative abilities in working with children, parents, professionals and members of the community in the development of early childhood education programs.

595 Advanced Studies (1-3)
Graduate seminars designed to develop professional competencies in such areas as behavior, teaching strategies, educational technology, program development, communication theory and interpersonal relations. May be repeated for credit.

597 Project (1-3)
Prerequisite: consent of instructor. Individual research on an empirical project, with conferences with the instructor, culminating in a project.

598 Thesis (1-3)
Prerequisite: consent of instructor. Individual research with conferences with the instructor, culminating in a thesis.

599 Independent Graduate Research (1-3)
Prerequisites: a teaching credential and one year of teaching experience. Designed for independent inquiry.

701 Credential Studies (0)
A course for students admitted to teacher education who find it impossible to maintain continuous enrollment while they are completing the 30 units beyond the baccalaureate.

709 Supervision of Student Teaching (3)
Prerequisites: a teaching credential and one year of teaching experience. Designed for teachers who supervise student teachers. Emphasis on principles and procedures of effective supervision and research.

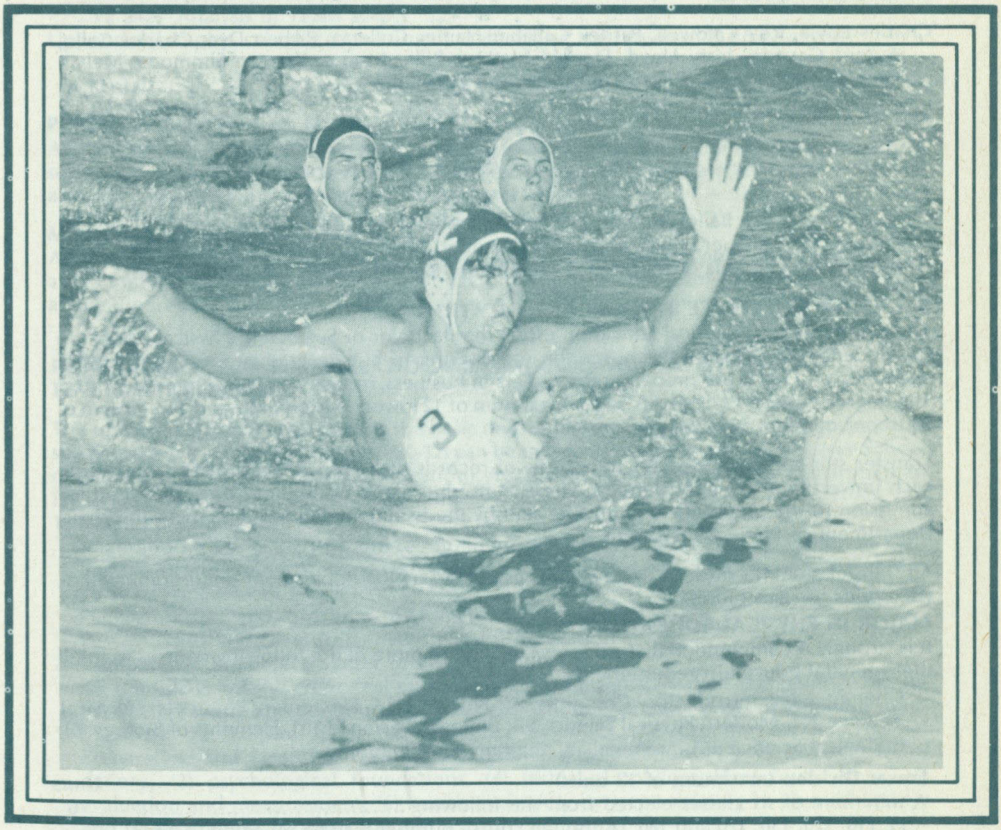
721 Philosophy and Objectives of Community College Education (2)
Prerequisite: postgraduate standing. College movement in higher education in the United States. Socioeconomic forces creating needs for different post-high school education; community college education objectives, relationships to secondary and higher education; curriculum development and organization.

744 Principles of Community College Teaching (3)
Prerequisite: postgraduate standing. Psychological foundations of community college teaching, measurement and evaluation of learning. Educational and philosophical bases for instructional procedures in the community college. Instructional procedures including audiovisual materials, community college class observations. (2 hours seminar, 3 hours fieldwork)

749 Student Teaching in—in the Secondary School and Seminar (6)
(For candidates for the Fisher standard teaching credentials in secondary teaching)
Prerequisite: admission to student teaching. Student teaching for the standard teaching credential with specialization in secondary school teaching. Student teaching program for half-days for a full semester. Includes a 2 hour seminar each week. (Minimum of 15 hours a week.)

Art Ed 749 Student Teaching in Art in the Secondary School and Seminar (6)
Educ 749 Student Teaching in Business in the Secondary School and Seminar (6)
Educ 749 Student Teaching in Social Science in the Secondary School and Seminar (6)
Engl Ed 749 Student Teaching in English in the Secondary School and Seminar
For Langs Ed 749 Student Teaching in Foreign Languages in the Foreign Languages in the Secondary School and Seminar (6)
Journ Ed 749 Student Teaching in Journalism in the Secondary School and Seminar (6)
Math Ed 749 Student Teaching in Mathematics in the Secondary School and Seminar (6)
Mu Ed 749 Student Teaching in Music in the Secondary School and Seminar (6)
PE 749 Student Teaching in Physical Education in the Secondary School and Seminar (6)
Sci Ed 749 Student Teaching in Science in the Secondary School and Seminar (6)
Speech Comm Ed 749 Student Teaching in Speech in the Secondary School and Seminar (6)
Theatre Ed 749 Student Teaching in Theatre in Secondary School and Seminar (6)

HEALTH EDUCATION
PHYSICAL EDUCATION
RECREATION AND ATHLETICS



DIVISION OF HEALTH EDUCATION, PHYSICAL EDUCATION, RECREATION AND ATHLETICS

Director: Paul Pastor

ATHLETICS

Neale Stoner, Director

Charles Boyle, Roy Caldwell, Patrick Callahan, James Colletto, Robert Dye, Charles Gallo, August Garrido, Jerry Lloyd, Donald Matson, Billie Moore, Warren Simmons, Melvin Sims, David Snow, V. Richard Wolfe, Ernest Zermeno

PHYSICAL EDUCATION

Jean Barrett, Chair

FACULTY

Gene Adams, C. Ian Bailey, Katharine Barthels, Leslie Bleamaster, Ron Edwards, M. William Fulton, Eric Hanauer, Elmer Johnson, Alexander Omalev, Roberta Rikli, Iva Diane Ross, Virginia Scheel, Eula Stovall, Carol Weinmann, Ronald Witchey, Michael Yessis

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

The Department of Physical Education offers the Bachelor of Science in Physical Education for students preparing to teach, for those preparing to pursue graduate work in physical education and for those preparing for careers in business, industry and government service. The degree consists of 124 units with a maximum of 12 lower division units and a minimum of 28 upper division units in physical education.

Transfer students must request transcripts of records of all previous scholastic work from each university or college attended. These transcripts are in addition to those required for admission to the university and must be sent by the issuing institution directly to the chair, Department of Physical Education.

All transfer students must have transcripts evaluated by the department undergraduate adviser prior to registration.

MAJOR IN PHYSICAL EDUCATION

It is strongly recommended that students take one or more of the following courses to fulfill their general education requirements:

Chemistry 100, Introductory Chemistry (4); Physics 211A, Elementary Physics (4); Physical Science 201, Modern Physical Science (4); Biological Science 101, Elements of Biology (5); Biological Science 361, Mammalian Anatomy and Physiology (4);

Lower Division (maximum of 12 units) *Units*

A minimum of six classes elected from the following 6

PE 110, 120, 130, 170 and 180. (Although course number may be repeated to meet this requirement, a specific class may count only once.)

Upper Division (minimum of 28 units)

Theoretical and practical bases:

Minimum of two courses 6-7

PE 300 Fundamental Principles of Movement (3)
PE 318 Developmental Adaptations of Atypical (3)
PE 324 Theory and Principles of Human Motor Learning (3)
PE 360 Movement Anatomy (3)
PE 370 Physiology of Exercise (4)
PE 461 Biomechanics (3)

Contemporary understandings:
Minimum of two courses 6
PE 350 History of Physical Education (3)
PE 356 Cultural Perspectives of Physical Activity (3)
PE 436 Sport Psychology (3)
PE 437 Sport Sociology (3)

Analysis:
Minimum of three courses 6-7
Two courses selected from:
PE 340 series, Analysis of Individual Sports (2)
PE 341 series, Analysis of Dual Sports (2)
One course from:
PE 340 Analysis of Individual Sports (2)
PE 341 Analysis of Dual Sports (2)
PE 342 Analysis of Team Sports (2)
Upper division physical education courses to complete the required 40 units for the major
*Total 40

Proficiency Requirements for Major and Minor Students
Activity courses should be taken to meet the prerequisite requirements for any analysis series course the student plans to take. Proficiency screening tests are administered in the analysis classes at the beginning of the semester.

MINOR IN PHYSICAL EDUCATION

A physical education minor shall consist of 20 units of coursework in physical education with a minimum of 12 upper division units which must include work from each of the following areas: theoretical and practical bases, contemporary understandings and analysis series.

REQUIREMENTS FOR PHYSICAL EDUCATION MAJORS SEEKING A TEACHING CREDENTIAL

The university program for meeting the *basic* requirements for the teaching credential with a specialization in physical education (K-12) can be found elsewhere in this catalog (see School of Education, Division of Teacher Education). Additional requirements of the Department of Physical Education are as follows

1. **Required Coursework**
   In addition to, or as part of, the requirements for a major in physical education all candidates for the credential must complete the following with a minimum of a "C" grade:
   PE 300 Principles of Movement
   PE 324 Theory and Principles of Human Motor Learning
   PE 420 Tests and Measurements in Physical Education
2. **Competency in Subject Matter of Physical Education**
   All candidates for the credential must adequately demonstrate their competency in subject matter scope and content of physical education. The major areas of emphasis identified by the Physical Education Advisory Panel of the Commission for Teacher Preparation and Licensing include: (1) biological foundations, (2) sociological foundations, (3) psychological foundations, (4) historical—philosophical foundations, (5) evaluation and measurement, (6) health and safety concepts relating to physical activity and (7) instructional subject matter.
3. **Instructional Subject Matter of Physical Education**
   Students seeking a credential with a specialization in physical education from this institution must be able to demonstrate their competency in instructional subject matter which is a part of the *regular* physical education program of the public schools. The Department of Physical Education specifically requires the following:
   a. Ability to perform and analyze basic movement skills common to a large number of instructional physical activities.

* Students wishing to take dance courses to fulfill part of the physical education major requirements should check with the Physical Education Department office. Final decisions on these classes were not made in time for inclusion in this catalog.

b. Adequate background and preparation to demonstrate breadth of understanding of the scope and content of physical education.
c. Strong background and preparation in a *minimum of three* designated areas of physical education* to demonstrate "in-depth" understanding and ability to apply understandings to the teaching learning situation. At present the areas identified by the Teacher Education Advisory Council of the Physical Education Department include: (1) team sports, (2) individual sports, (3) dual sports, (4) dance, (5) aquatics, (6) recreational (must be instructional in nature), (7) environmental, (8) developmental, (9) special programs and (10) coaching.

4. **Admission to Teacher Education**
In addition to the requirements set forth elsewhere in this catalog, the Department of Physical Education requires candidates to submit to an extensive review of qualifications for teaching. This review includes additional written documentation, and a personal evaluation by a select interview committee.
Acceptance into the program allows the candidate to enroll in a two semester sequence:
First semester: Ed-TE 440F, Ed-TE 440S, Ed-TE 440R (optional), PE 442.
Second semester: Fisher credential—PE 449A,B, Ed-TE 401; Ryan credential—PE 449A,B

MASTER OF SCIENCE IN PHYSICAL EDUCATION

The program of studies is designed: (1) to prepare master teachers at the college level; (2) to improve the professional background and competence of those in the field; (3) to prepare scholars who wish to pursue a doctoral program in physical education; and (4) to prepare students for sports related careers in fields other than teaching.

Admission to Graduate Standing: Conditionally Classified
An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures),

Admission to Graduate Standing: Classified
A student who meets the requirements for conditionally classified graduate standing, as well as the following requirements, may be admitted as a classified graduate upon development of an approved study plan:

1. completion of 24 approved upper division units in physical education
2. a grade-point average of 3.0 or better, for all upper division work taken in physical education. (Contingency provisions: grade-point deficiencies in individual courses in physical education may be met by taking 6-12 hours of approved courses at Cal State Fullerton, and earning a 3.0 GPA in these courses. Such courses, while counted toward the prerequisites for the master of science program, may not be used to fulfill the program requirements.)
3. three satisfactory letters of recommendation

Study Plan
The degree study plan normally consists of 30 units of graduate coursework with a GPA of 3.0 or better. Coursework shall include a minimum of 18 units of 500-level courses of which 8-10 units are required. Further work includes 8-10 units of 500-level physical education courses and a maximum of 12 units of electives. A thesis or a project and an oral examination at the conclusion of the program are required; a written examination may also be required.

	Units
Required	8-10
PE 508 Statistical Methods in Physical Education (3)	
PE 510 Research in Physical Education (3)	
PE 598 Thesis (4) or PE 597 Project (2)	

* Students are urged to consult with the teacher education adviser of the department before submitting documents required for establishing subject matter competency.

Study plans shall be developed from the following list of approved courses with adviser's approval.

Approved 500-level physical education 8-10

PE 505 Seminar in Sports Administration (3)
PE 515 Current Issues in Physical Education (3)
PE 516 Philosophical Bases of Physical Education (3)
PE 520 International Physical Education (3)
PE 530 Administration and Supervision of Physical Education (3)
PE 532 Curriculum Design in Physical Education (3)
PE 533 Facilities Development and Planning (3)
PE 540 Seminar in Adapted Physical Education (3)
PE 550 Internship (3-6)
PE 551 Advanced Study in Physiology of Exercise (3)
PE 552 Human Bio-Kinetics (3)
PE 554 Advanced Studies in Motor Behavior (3)
PE 555 Scientific Bases of Training (3)
*PE 596 Advanced Studies in Physical Education (1-3)
*PE 599 Independent Research (1-3)

Electives 12

Twelve units of coursework are selected with adviser's approval which would be supportive of the individual student's stated goals for graduate study. Coursework may be selected from the following categories in any combination:

1. 500-level coursework in physical education.
2. 400-level coursework in physical education approved by the department's Graduate Studies Committee for graduate students.
3. Graduate or upper division coursework approved for graduate students from other departments within the university.

Total 30

For further details, consult the graduate studies adviser, Division of Health Education, Physical Education, Recreation and Athletics.

See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin.*

HEALTH EDUCATION COURSES

101 Personal and Community Health (2)
Consideration of critical health issues as they relate to modern man. Physical, mental and social health and safety issues involved in everyday living are investigated.

102 Prevention and First Aid (2)
Study of the hazards in man's environment and the common accidents related thereto. Emphasis is placed upon both the care and prevention of accidents. Students (upon successful completion of requirements) will be granted standard first aid certification by the American Red Cross.

321 Drugs and Society (3)
Critical study of habit-forming substances such as alcohol, tobacco, narcotics and related drugs. Social and legal aspects of the drug problem are also considered.

410 Health Education for Teachers (3)
Topics will include school health, drug education, family living community health teaching philosophy and strategy. For students seeking California teaching credential.

PHYSICAL EDUCATION COURSES

General Education Requirements:

Health and Physical Education Electives

There are no specific health and physical education requirements. Each student, however, must take a minimum of three courses (9 units) with one from each of three fields included in Category IV, Basic Subjects: computer science, elementary foreign languages, health education, mathematics, oral communications, physical education, reading, statistics or writing.

* PE 596 and 599 may be applied to the major area of study and/or the secondary area of optional electives.

100A Athletics in Action: Specific Sport (1)
Designed for spectator's understanding of athletics in our society. Knowledge of plays and appreciation are its primary focus. Attendance of four athletic events and class discussion of specific assignments are required. Itinerary will be organized at the first class meeting. C/NC only.

110 Aquatics (1)
A physical activity experience in aquatics activities with a student in an educational setting and under the direction of a faculty member who directs the activity to meet the needs and interests of the student. Open to all students. May be repeated for credit.

120 Group Activities (1)
A physical activity experience in group activities with a student in an educational setting and under the direction of a faculty member who directs the activity to meet the needs and interests of the student. Open to all students. May be repeated for credit.

130 Individual Activities (1)
A physical activity experience in individual activities with a student in an educational setting and under the direction of a faculty member who directs the activity to meet the needs and interests of the student. Open to all students. May be repeated for credit.

170 Intercollegiate Sports (W) (2)
Prerequisite: consent of coach. An intercollegiate activity experience in individual or team sports for women in an educational setting under the direction of a coach who directs the activity to meet the needs and interests of the student.

180 Intercollegiate Sports (M) (2)
Prerequisite: consent of coach. An intercollegiate activity experience in individual and team sports for men in an educational setting under the direction of a coach who directs the activity to meet the needs and interests of the student.

190 Team Management (2)
Prerequisites: consent of coach, undergraduate studies adviser and department chair. Field experience in the management of an intercollegiate sport. May be repeated for maximum of eight units of credit.

201 Introduction to Physical Education and Recreation (3)
Introduction to physical education programs in public and private agencies, personal, social and professional requirements of the physical education teacher and recreation leader, includes the origin and development of the professions of health education, physical education and recreation with emphasis upon their significance and function in contemporary American culture.

206 Techniques of Officiating Team Sports (2)
Analysis of officiating techniques and rules necessary for officiating team sports. May be repeated for various sports or combinations of sports. (1 hour lecture, 2 hours activity)

210 Water Safety Instructor (2)
Prerequisite: PE 110 (Life Saving) or equivalent and consent of instructor. This course prepares the student to teach swimming and life saving and to supervise aquatic programs. Successful completion of this course will qualify the student for certification as an ARC water safety instructor. (1 hour lecture, 2 hours activity)

214 Skin and Scuba Diving (2)
Prerequisites: PE 110 (Skin Diving), or ability to swim 400 yards, tread water one minute, and swim 25 yards underwater and consent of instructor. The techniques of skin and scuba diving, theory of diving, safety procedures and applications of diving will be covered. (1 hour lecture, 2 hours activity)

300 Principles of Movement (3)
Understanding of the basic principles of movement and their application to general movement patterns as applied to sport and human movement.

301 Prevention and Care of Athletic Injuries (3)
Prerequisites: upper division standing, successful completion of HE 102 (or equivalent) and consent of instructor. Designed to assist trainers, coaches, physical education instructors, health educators, YMCA and playground personnel, and athletes in the prevention and care of athletic injuries. Emphasis on practical applications as well as theory. (2 hours lecture, 2 hours activity)

303 Conditioning for Athletes (3)
Fundamentals of conditioning for those who plan to coach. Includes specific programs such

as circuit training, nutrition, motivation, weight control and kinesiologic factors for women's and men's athletics.

310 Applied Scuba Diving (2)

Application of scuba diving, including spear fishing, photography, specimen collecting, night diving, boat diving and others.

318 Developmental Adaptations of Atypical (3) (Formerly 418)

The study and selection of activities and programs for students physically unable to participate in the regular physical education program.

320 Theory of Coaching: Sports (2)

A physical education experience designed to help prepare the student to coach specific individual and team sports. Emphasis will include coaching techniques, conditioning of athletes, budget preparation, purchase and care of equipment, scheduling and design and care of facilities. May be repeated for credit with emphasis on a different sport.

324 Theory and Principles of Human Motor Learning (3)

An analysis of current theories of motor learning as related to human performance. Philosophical bases are developed from which basic principles are evolved.

325 Organization and Administration of Physical Education (3)

Cases studies involving human physical performance. Sequence of activities, individual needs, institutional patterns of organization and programming.

326 Organization and Administration of Intramural Sports (2)

Organization and administration of intramural sports programs at the elementary, secondary and college level. Selected fieldwork is included.

333 Physical Education and Human Development (3)

Prerequisite: consent of instructor or department chair required for physical education majors. Emphasis on characteristics of the child, particularly as these relate to physical growth and development; basic mechanical principles underlying efficient movement; and programs for physical needs of children in the elementary school.

340 Analysis of Individual Sports (2)

Prerequisite: prior experience in the specitic sport(s) offered. Must demonstrate adequate proficiency in each sport offered. Analysis of a specific sport(s) including game play and skill performance. Emphasis on understanding the specific nature of the activity. May be repeated for credit with emphasis on a different sport.

341 Analysis of Dual Sports (2)

Prerequisite: prior experience in the speciicific sport(s) offered. Must demonstrate adequate proficiency in each sport offered. Analysis of a specific sport(s) including game play and skill performance. Emphasis on understanding the specific nature of the activity. May be repeated for credit with emphasis on a different sport.

342 Analysis of Team Sports (2)

Prerequisite: prior experience in the specific sport offered. Must demonstrate adequate proficiency in each sport offered. Analysis of a specific sport(s) including game play and skill performance. Emphasis on understanding the specific nature of the activity. May be repeated for credit with emphasis on a different sport.

350 History of Physical Education (3)

Historical development of thought and practice in athletics and physical education in American education.

356 Cultural Perspectives of Physical Activity (3)

An interdisciplinary approach to the examination of physical activity in the cultural milieu. Study will cover historical and contemporary interpretations of the role of play, games and sports, dance and recreation in human life.

360 Movement Anatomy (3)

Description of human movement especially as witnessed in sports. Comprehension of muscle action and function in various sports.

370 Physiology of Exercise (4)

The study of physiological processes in physical activities and the effects of training upon performance. (3 hours lecture, 3 hours laboratory)

396 Tutorial (1)

Prerequisites: consent of instructor, tutorial adviser and department chair. Student aide in general education activity classes. May be repeated for maximum of six units of credit.

420 Tests and Measurements in Physical Education (3)
A study of the development and use of tests and measurements in physical education in the evaluation of objectives, programs and student achievement.

425 Special Programs: Physical Education (1-3)
Prerequisite: upper division standing. Group investigation of selected topics determined by professionals in the field. May be repeated for credit.

436 Sport Psychology (3)
Discussion and analysis of literature, research and issues dealing with psychological aspects of play, games and sport. (Same as Psychology 436)

437 Sport Sociology (3)
A critical examination of the interrelationships of sport and athletics with other aspects of the culture; special emphasis on 20th-century America.

440 Sports Medicine (3)
Prerequisites: Upper division standing, PE 370 or its equivalent or consent of instructor. The study of advanced athletic training as it pertains to the various factors (environmental, nutritional) which alters the typical physiological response to exercise and training.

442 Teaching Physical Education in the Secondary School (3)
Prerequisite: admission to teacher education. Deals with objectives, methods and materials of teaching physical education at the secondary school level. Required before student teaching. Course is part of the 12-unit education block and may not be taken separately.

449A Student Teaching Physical Education in the Secondary School (10)
See description under Division of Teacher Education.

449B Student Teaching Seminar (2)
See description under Division of Teacher Education.

450A Advanced Study in Performance: Badminton and Tennis (2)
Prerequisites: analysis of badminton and tennis or consent of instructor. An in-depth study of skills, techniques and strategy of top level performance in badminton and tennis. Included is the theory and analysis of outstanding performance.

450B Advanced Study in Performance: Gymnastics (2)
Prerequisites: analysis of gymnastics or consent of instructor. An in-depth study of skills, techniques and strategy of top level performance in gymnastics. Included is the theory and analysis of outstanding performance.

450C Advanced Study in Performance: Track and Field (2)
Prerequisites: analysis of track and field or consent of instructor. An in-depth study of skills, techniques and strategy of top level performance in track and field. Included is the theory and analysis of outstanding performance.

461 Biomechanics (3) (formerly 361)
An in-depth study of the application of mechanics to the analysis of human movement.

496 Physical Education Practicum (1-3)
Prerequisite: consent of supervisor, undergraduate adviser and department chair. Participation as an assistant in planning, preparing, coaching, teaching in public school, college, or community physical education or recreation programs. May be repeated for a maximum of six units of credit. Credit/No credit only.

499 Independent Study (1-3)
Prerequisites: upper division standing and consent of instructor supervising the study, undergraduate adviser and department chair. Independent inquiry into problems of topics of special interest beyond the scope of regular coursework. May be repeated for credit up to six units.

505 Seminar in Sports Administration (3)
Prerequisite: graduate status. Management approaches related to the administration of commercial and professional sports including office management, radio and TV negotiations, public relations, arena and stadium management, ticket sales, the legal aspects and the supervision of the medical aspects of professional sports.

508 Statistical Methods in Physical Education (3)
Prerequisite: PE 420 or equivalent. Includes statistical theory, data collection procedures, techniques or analysis of data and interpretation of data related to physical education.

510 Research in Physical Education (3)
Prerequisite: graduate status. The role and functions of research in physical education included are the different types of research with tools of and equipment for the respec-

tive research. Selection and development of research problems and critique of completed studies are stressed.

515 Current Issues in Physical Education (3)

Prerequisite: graduate status with a major or minor in physical education. A study of current problems and issues in physical education through a critical analysis of the literature in the field and research findings.

516 Philosophical Bases of Physical Education (3)

Prerequisite: graduate status with a major in physical education. Identification of philosophical schools of thought as related to physical education including the role of the philosophical process. Examination and application of the philosophical process in physical education.

520 International Physical Education (3)

Prerequisite: graduate status with a major in physical education. An in-depth study of the theory and practice of physical education and sports in selected foreign countries. Evaluation of foreign physical education programs in relation to programs witnessed in the United States.

530 Administration and Supervision of Physical Education (3)

Prerequisite: graduate status with major in physical education. An in-depth study and critical analysis of existing programs in physical education in terms of established evaluative criteria and norms of practice.

532 Curriculum Design in Physical Education (3)

Prerequisite: graduate status with a major in physical education. Study in desirable practices, procedures, and factors influencing curricular development in the field of physical education. Especially designed for the practicing teacher, supervisor of physical education, and the school administrator concerned with physical education in the total school program.

533 Facilities Development and Planning (3)

Prerequisites: graduate status and a major in physical education. Analysis of new trends and research in the development of indoor and outdoor facilities in planning programs in health education, physical education and recreation with special emphasis upon design, safety, features, site selection, building construction and equipment needs.

540 Seminar in Adapted Physical Education (3)

Prerequisite: PE 318. Identification and solutions of problems in planning, organization, administration, and evaluation of adapted physical education programs at local, state and national levels.

550 Internship (3)

Prerequisite: PE 505 and classified status. On-the-job training experiences under the supervision of a fully trained practitioner in the field. Requirements include 10 hours per week of on-the-job training and 1 hour weekly conference with instructor. May be repeated once for credit.

551 Advanced Study in Physiology of Exercise (3)

Prerequisite: PE 370 or equivalent. A study of advanced theories of exercise and physiological function.

552 Human Bio-Kinetics (3)

Prerequisite: PE 461 or equivalent background in kinesiology. A study of advanced theories and a detailed analysis of human movement.

554 Advanced Studies in Motor Behavior (3)

Prerequisites: graduate status, PE 324 or consent of instructor. An in-depth study of current issues in the area of motor behavior.

555 Scientific Bases of Training (3)

Prerequisites: graduate status, coursework in kinesiology, physiology of exercise, bio-kinetics and consent of instructor. Detailed study of contemporary training with specific attention to the development of those qualities involved in various sports. Experience in evaluation of the effects of training.

596 Advanced Studies: Physical Education (1-3)

Prerequisite: graduate status. Graduate seminars designed to develop competencies in such areas as: historical, philosophical, sociological, psychological, scientific bases of sport and dance. Opportunities are provided for individualization of instruction with appropriate experiences. May be repeated for credit.

597 Project (2)
Prerequisites: PE 508, PE 510 and consent of project committee. Individual work on an empirical problem. Conferences with project chair and committee, culminating in a project.

598 Thesis (4)
Prerequisites: PE 508, 510 and consent of thesis committee. Individual research on an empirical problem. Conferences with thesis chair and committee, culminating in a thesis.

599 Independent Research (1-3)
Prerequisites: graduate status and consent of the faculty adviser and department chair. Research for qualified graduate students desiring to pursue independent inquiry. May be repeated for credit.

749 Student Teaching in Physical Education in the Secondary School and Seminar (6)
For candidates seeking the Fisher standard credential in secondary teaching. See description and prerequisite under Division of Teacher Education.

RECREATION COURSES

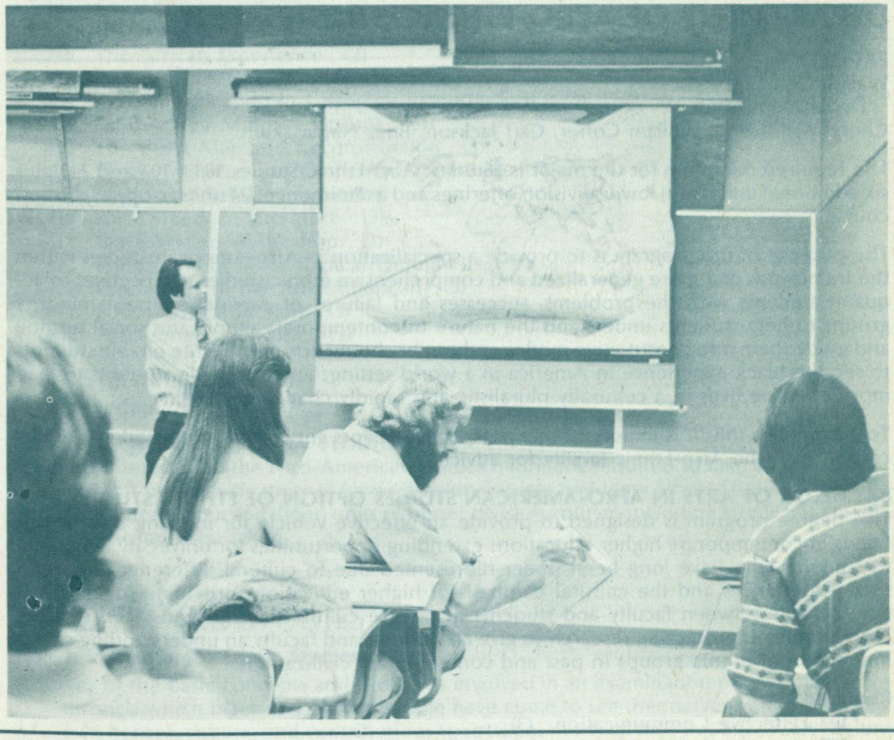
203 Recreation Programs and Activities (2)
Prerequisite: consent of instructor. Theory and activity course, leadership in recreation programs, activities in recreation agencies. Laboratory experiences and practice included. (1 hour lecture, 2 hours activity)

204 Camping and Camp Leadership (3)
A study of camping designed to make a person become a more skillful camper, to understand better the values of camping and to prepare students to organize and discuss camping activities and the role of the counselor. (2 hours lecture, 2 hours activity)

208 Recreational Film-Making (2)
The theory and practice of the art of creative film-making as it pertains to the field of recreation. (1 hour lecture, 2 hours activity)

425 Special Programs in Recreation (1-3)
Investigation and practical study of recreation programs, theory, technique and/or methodology. Topic varies according to current offering. May be repeated for credit with different emphasis.

HUMANITIES AND SOCIAL SCIENCES



SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

Dean: Leland J. Bellot
Associate Dean: Don A. Schweitzer

The curricula of the School of Humanities and Social Sciences are designed to provide opportunities for the student to expand his general knowledge, to develop a beginning specialization, to investigate areas of intellectual interest, and, if he chooses, to prepare himself for specialized professional studies.

The School of Humanities and Social Sciences is presently comprised of 18 departments and programs offering undergraduate majors leading to the Bachelor of Arts or Bachelor of Science degree and master's programs leading to the Master of Arts, Master of Science or Master of Public Administration.

DEPARTMENT OF AFRO-ETHNIC STUDIES

FACULTY
Wacira Gethaiga
Department Chair
Cheryl Armstrong, William Coffer, Carl Jackson, Boaz Namasaka

The required minimum for the major is 36 units: Afro-Ethnic Studies 103,* 107 and 240 plus six additional units from lower division offerings and a minimum of 24 units in upper division courses.

The purpose of the program is to provide a specialization in Afro-American studies within the framework of a more generalized and comprehensive ethnic studies perspective; to acquaint students with the problems, successes and failures of America's largest minority group; to help students understand the nature of contemporary ethnic and social turmoil and guide them into constructive modes of thought about current issues; to enable students to see the black experience in America in a world setting; and to enable students to lead more effective lives in a culturally pluralistic and rapidly changing society.

To accomplish this, it is important that prospective majors and others interested in a minor consult with the Afro-Ethnic faculty for advice.

BACHELOR OF ARTS IN AFRO-AMERICAN STUDIES OPTION OF ETHNIC STUDIES
This degree program is designed to provide an effective vehicle for meeting a variety of needs in contemporary higher education: extending opportunities for university education to students who have long been under-represented due to cultural differences between their experiences and the cultural emphasis of higher education; providing for personal consultation between faculty and students of diverse cultural backgrounds; and revising curriculum and promoting research to give all students and faculty an understanding of the interaction of ethnic groups in past and contemporary civilizations.

Required
*103 Effective Communication (3)
107 Introduction to Afro-American Studies (3)
240 Afro-American History (3)

Lower Division electives: (6 units required)
101 Introduction to Ethnic Studies (3)
104 Swahili (4)
105 Swahili (4)
230 The Native American (3)
240A Afro-American History to 1865 (3)

* Students can be exempted from Afro-Ethnic Studies 103 by an examination and/or consent of department.

240B Afro-American History from 1865 to Present (3)
245 Black Political History (3)
250 Cultural Scars of Oppression (3)
260 Cultural Identity and the Contemporary Black (3)
270 The Amer-Asian (3)

Upper division electives: (24 units required including at least 9 units from 309, 335, 346, 385 and 410)

300 Black Man/Black Woman (3)
301 Afro-American Culture (3)
303 Ancient and Modern African Culture (3)
304 African Religion and Philosophy (3)
305 Community Organizations (3)
309 The Black Family (3)
311 Intracultural Socialization Patterns (3)
314 Pan-African Dance and Movement (3)
315 Pan-African Art (3)
331 Tribalism and Reservation Life (3)
332 American Indian Leaders (3)
334 Equal Employment Opportunity Laws (3)
335 History of Racism (3)
346 The African Experience (3)
352 African Literature (3)
380 Role of Education in Changing Attitudes (3)
385 Schools and Minority Groups (3)
400 The Black Man and Reconstruction (3)
401 Black American and Contemporary Issues (3)
402 Africa and Self-Determination (3)
410 Afro-American Literature (3)
411 Black Writers' Workshop (3)
420 Philosophy of Black Radical Thought (3)
422 Psychology of the Afro-American (3)
431 Southwestern Indians (3)
460 Afro-American Music (3)
495 Selected Topics (3)
497 Ethnic Internship (3)
499 Independent Study (1-3)

MINOR IN AFRO-AMERICAN STUDIES

Students interested in the Afro-American studies minor are required to take a minimum of 21 units. This includes six units of lower division courses including Ethnic Studies 107 or 101 and an additional course. Fifteen units of upper division courses including Ethnic Studies 301 and 309 also must be taken.

AFRO-ETHNIC STUDIES COURSES

101 Introduction to Ethnic Studies (3)

A survey of the basic concepts and problems involved in an examination of the perspective through which black and brown people have come to see themselves in terms of their own heroes, culture, and contributions to societies in which they live and world society in general.

103 Effective Communication (3)

A methodical presentation of the basic skills, emphasizing writing and communication skills, stressing the use of idioms, proper pronunciation, intonation, and correct English patterns.

104 Fundamental Swahili (4)

(Same as Swahili 101)

105 Fundamental Swahili (4)

(Same as Swahili 102)

107 Introduction to Afro-American Studies (3)
Introduction to the aims and objectives of the Afro-American studies program. The course will define and explore the basic terms and references that give substance to Afro-American studies. It will provide uniform purpose and direction for students who seek an education in Afro-American studies.

230 The Native American (3)
A study of the American Indian experience in the United States as seen from the Indian's point of view in comparison with that of the white man. Special attention will be focused on the problems of American Indians today.

240A Afro-American History to 1865 (3)
A survey of the economic, political and social history of black Americans in the United States, African origins, the slave trade, slavery, religion, abolition, slavery and territory and the Civil War.

240B Afro-American History from 1865 to Present (3)
A survey of the social, economic, political and cultural history of black Americans. Among the topics will be the black reconstruction role, Jim Crow, the relationship between black workers and white workers and labor unions, lynching, black protest, World War I, black emigration, the Harlem renaissance, the New Deal, World War II, the intensification of the black emigration, the civil rights movement, the Korean War, Vietnam War, the black power movement and cultural developments.

245 Black Political History (3)
Background in the political development of the United States and the influence of slavery there on to the present date. Included is a survey and analysis of the U. S. Constitution showing separate political development of white and black.

250 Cultural Scars of Oppression (3)
An examination of the process of socialization of the black man in America and its imprints upon his psyche.

260 Cultural Identity of the Contemporary Black Man (3)
An examination and study of the "identity crisis" or lack of it in young black individuals in the United States. An in-depth analysis of the changing points of view of the black toward acculturation.

270 The Amer-Asian (3)
A survey of the Asian-American experience from the early 19th century. Includes: analysis of the discriminatory legislation as reflected in immigration quotas; investigation of the fallacies surrounding the Asian-American experience; and study of present day attitudes in the Asian community.

300 Black Man/Black Woman (3)
A study of black value systems, double standards, machismo figure, communication barriers caused by predefined roles, stereotype expectations according to the traditional class status, and how they affect individual abilities and self-esteem.

301 Afro-American Culture (3)
A survey of African cultural characteristics in the New World, as they relate to contemporary events, including art, ideas, dance and literature.

303 Ancient and Modern African Culture (3)
Prerequisite: advanced sophomore or upper division standing. A survey of the African cultures specifically West African contrasted with East African) before the period of exploration and after colonization. A look at the present-day American black culture and an estimation of the carry-over cultures.

304 African Religion and Philosophy (3)
An analysis of African life, the relationship between man, God and nature, the systems of African philosophical thought in terms of God, man, ethics, justice, morals, good and evil, life and death, and their interrelationships.

305 Community Organizations (3)
A study of organization agencies, such as Partners for Progress, fair housing, SER, Urban League and the local welfare systems and their relevancy to the minority community. Students will be involved in field research and assess the goals and accomplishments of an organization selected for study.

309 The Black Family (3)
A study of the American social conditions that shaped the black family from the African cultural patterns that were destroyed during slavery to the family that exists today. Special attention will be given to the roles of poverty, racism and discrimination.

311 Intracultural Socialization Patterns (3)
Patterns of role learning as they vary within subpopulations; changes over time in the values, attitudes, and goals of both the general culture and of subcultures; stereotypes and realities; understanding and dealing with cultural variation as well as cultural "norms."

314 Pan-African Dance and Movement (3)
Theory and practice of movement of African and Haitian peoples. An investigation of how movement (dance) acts as quasi-language in perpetuating the life style of African cultures and cultures of African descent.

315 Pan-African Art (3)
A study of African and Afro-American art from prehistoric to contemporary times, including African influences in other art forms and a stylistic analysis of drawings, sculpture and paintings.

331 Tribalism and Reservation Life (3)
The role of tribalism in contemporary Indian affairs, with special reference to Indian self-determination on reservations in terms of political, economic and social lifeways relative to the dominant society: Will include field trips to local reservations.

332 American Indian Leaders (3)
The diverse philosophies of American Indian leaders from various Indian nations, the political, sociological and religious aspects of their lives, and the impact on Indian-white relationships.

334 Equal Employment Opportunity Laws (3)
Designed to give insight into Civil Rights laws and legislation of equal employment (Affirmative Action) laws, it will deal with Title VII, Civil Rights Act of 1964 Executive 11246 and 11375.

335 History of Racism (3)
An examination of the current dynamics of racism in terms of the historical roots of that racial phenomenon both in American society and the world setting.

346 The African Experience (3)
A survey of major themes of African history from the origin of the black man and traditional African civilization through the African diaspora to the institutional realities of Africa today.

352 African Literature (3)
(Same as English 352)

385 Schools and Minority Groups (3)
A study of the prevailing educational practices in regard to minority groups in elementary school through college, including minority students' failure patterns, what is being done to change failures, and the outcomes of these practices.

400 The Black Man and Reconstruction (3)
An examination of the first attempt to bring about the realization of an interracial democratic American society. Special attention will be given to the conduct, achievements and contributions of those Afro-Americans who participated in that short lived experiment.

401 Black American and Contemporary Issues (3)
Analysis and discussion of the socioeconomic and political problems confronting black Americans, with an emphasis on problem solving. Particular focus will be placed on the effects American social attitudes and institutions have had on the black community. Research will focus on these areas.

402 Africa and Self-Determination (3)
Prerequisite: Afro-Ethnic Studies 303. A study of the national characters of African nations, how they shed labels like "tribes" and united to demand the independence they had lost.

410 Afro-American Literature (3)
A study of the literary endeavors of Afro-Americans and their cultural impact, especially in relationship to the social and psychological evolution of the Afro-American.

411 Black Writers' Workshop (3)
Practice in writing prose, fiction, drama, short stories, book reviews, poetry and essays from the perspective of the black experience.

420 Philosophy of Black Radical Thought (3)
The philosophy of black radical thought as it emerged from the black experience in America through slavery, Reconstruction, post-Reconstruction, pre-World War II and contem-

porary times and as it is expressed through music, sermons, literature, social movements, drama and political action.

422 Psychology of the Afro-American (3)

Psychological aspects of black identity and the life styles that have risen from racism. The socioeconomic, political, cultural conditions which have fostered the blackness concept and the psychological devices used by blacks to survive.

431 Southwestern Indians (3)

The various Indian tribes of the Southwestern United States beginning with the Anasazi, Mogollon and Hobokam cultures and their evolution to contemporary times, including cultural changes and assimilation.

460 Afro-American Music Appreciation (3)

A survey of black music in America; the sociological conditions that help produce various forms of black music; and influential black music in America.

495 Selected Topics (3)

Prerequisite: junior status or consent of instructor. Special seminar in selected topics in Afro-American studies.

497 Ethnic Internship (3)

Interdepartmental course to acquaint minority students with career opportunities in industry and social services. Students work up to 20 hours per week and meet weekly for guidance. Supervision provided by instructor and cooperating agencies. Can be repeated for credit.

499 Independent Study (1-3)

Prerequisites: senior level and acceptance of the subject by department chair and instructor directing the study.

AMERICAN INDIAN STUDIES PROGRAM

FACULTY

William Coffer

The American Indian studies program brings faculty members and students (Indian and non-Indian) together in a mutual effort to provide instruction on the status, condition and destiny of Indians in contemporary America. The program includes Indian-oriented courses dedicated to an Indian interpretation of tribal experience in America as well as related courses on Indian themes.

COURSES

Afro-ethnic Studies 230 The Native American (3)
English 320 Literature of the American Indian (3)
Anthropology 321 The American Indian (3)
Afro-ethnic Studies 331 Tribalism and Reservation Life (3)
Afro-ethnic Studies 332 American Indian Leaders (3)
Economics 334 Economics of Poverty, Race and Discrimination (3)
Anthropology 407 California Indian Languages (3)
Afro-ethnic Studies 431 Southwestern Indians (3)
Sociology 431 Minority Group Relations (3)
Art 461 Art of North American Indian (3)

DEPARTMENT OF AMERICAN STUDIES

FACULTY

E. James Weaver
Department Chair

John Ibson, Karen Lystra, Robert Porfirio, Ann Untereiner

BACHELOR OF ARTS IN AMERICAN STUDIES

The degree in American studies is an interdisciplinary program designed for students with a special interest in the American experience, including the overseas experience. It permits, through intensive study of the United States, greater perception of American society, both contemporary and historical. By providing students with an opportunity to discover the larger relationships among disciplines, the student may receive a better sense of the whole.

The American studies degree prepares students for teaching either on the elementary or secondary level. The American Studies Department has been granted a waiver right by the Commission for Teacher Preparation and Licensing which means that American studies majors, providing they follow an acceptable program of courses, can be granted either the multi-subject (elementary) or single-subject (history or social sciences) credential without having to take the state examination otherwise required by the Ryan Act. American studies is also useful for any career in which an understanding of American culture is important, such as law, government, business, journalism, library work and other services, as well as serving as a foundation for advanced study at the graduate level. Students who plan to go to law school may in consultation with their adviser devise a program composed in part of courses offered by different departments that is concerned with the relationship between law and society.

Since two alternative programs are available, the student interested in becoming a major must consult with an American studies counselor to develop a course of study mutually satisfactory. The major consists of 36 units distributed as follows between the core program and either Plan a or b:

I. Core program (12 units) required of all majors.
   - 201 Introduction to American Studies (3)
   - 301 The American Character (3)
   - 350 Seminar in Theory and Method of American Studies (3)
   - 401 Proseminar in American Studies (3)

II. Alternative plans (24 upper division units in either plan—electives in American studies may be used in conjunction with courses in other departments)
   a. The student may choose to work in two but not more than three disciplines related to the American experience; i.e.: history and literature or sociology, anthropology and political science.
   b. The student may choose to pursue a specialized theme or subject; i.e., mass culture, women in America, urbanization, ethnic groups in American society, law and society, or the child and the family, or the student may choose to concentrate on 20th-century American problems.

Students interested in the American studies major must consult with the department chair before establishing an individual course of study.

AMERICAN STUDIES COURSES

201 Introduction to American Studies (3)
With the concept of culture as a unifying principle, focus is on four separate time periods in order to provide the framework for an understanding of American civilization. Several different kinds of documents will be used to illustrate the nature and advantages of an interdisciplinary approach.

301 The American Character (3)
Prerequisite: American Studies 201 or History 170A or B or consent of instructor. Studies the changing national character. Reading reflects an interdisciplinary approach; from poetry to sociology. Some attention is paid to the American Negro and Indian in addition to the transplanted European.

320 The Dark Age of American Film, 1944-1955 (3)
American film prevalent in the decade following World War II. The style and attitudes of a specific genre of film, involving the works of such diverse directors as Hitchcock, Nick Ray, Robert Siodmak and Sam Fuller within a sociocultural framework. Weekly film viewing and discussion.

333 Visual Arts in Contemporary America (3)
Visual phenomena in America as they reveal changes in recent American culture. Areas covered include the "high" arts (painting, sculpture) as contrasted with the "low" arts (advertising, television); the artist as innovator, alienation, the business world, and American values in art.

350 Seminar in Theory and Method of American Studies (3)
Prerequisites: American Studies 201 and 301; or History 170A or B; or consent of instructor. Designed to provide the American studies major with an understanding and appreciation of methodology, theories of society and images of man as they effect American studies contributions to scholarship.

386A American Social History, 1750-1860 (3)
(Same as History 386A)
386B American Social History, 1865-1930 (3)
(Same as History 386B)
401 Proseminar in American Studies (3)
Prerequisites: American Studies 201 and 301; or History 170A or B; or consent of instructor. Designed to permit students to examine the relationship between theory and application. Emphasis on analytic readings and research. Topics will be announced each semester. Check the *Class Schedule* for topics being considered each semester.
402 Religion in the Development of American Society (3)
Prerequisites: American Studies 201 or 301; or History 170A or B; or consent of instructor. An intensive study of the changing role of religion in shaping, reflecting, and challenging dominant American values and institutions. Focus is on the 19th and 20th centuries, although some attention will be paid to the colonial period.
410 Irish-Americans and the Cult of Success (3)
Prerequisites: American Studies 201 or 301; or History 170A or B; or consent of instructor. Irish-American subculture from the Potato Famine Emigration to the present. Focuses on the quality and extent of the "Americanization" process, including the retention, repression, and loss of Irish ethnicity.
411 The White Ethnic in America (3)
Prerequisites: American Studies 201 or 301; or History 170A or B. A historical and contemporary look at the white, but not Anglo, ethnic groups in America. Among topics will be ethnic stereotypes, loss and survival in America of national and religious heritages, the breadth and depth among these groups of prejudice against non-whites.
412 Freedom and Repression in American Culture (3)
Prerequisites: American Studies 201 or 301; or History 170A or B. The Puritan origins of early American history, and their consequences for the culture's later development.
415 The Hero in American Popular Culture (3)
Prerequisites: American Studies 201 or 301; or History 170A or B, or consent of instructor. Nineteenth and 20th-century materials including dime novels, pulps, detective fiction, comic strips, and films, will be utilized to examine the role of the hero in American imagination.
425 Darwinism in American Literature (3)
(Same as English 425)
450 Women in American Society (3)
An effort to explain the rise and decline of feminism in America. The first half of the course will be lecture. The second half will be devoted to discussion aimed at comparing and contrasting the contemporary woman's movement with its predecessors.
499 Independent Study (1-3)
Supervised research projects in American studies to be taken with the consent of instructor and department chair. May be repeated for credit.

DEPARTMENT OF ANTHROPOLOGY

FACULTY
Judy Suchey
Department Chair (Acting)
Aileen Baron, Lawrence Christensen, Marlene Dobkin de Rios, David Evans, Christopher Hulse, E. T. Jacob-Pandian, LeRoy Joesink-Mandeville, Roger Joseph, Fred Katz, Hans Leder, Ngapare Mills, Otto Sadovszky*, Richard See, Wayne Untereiner, Wayne Wanke, Corinne Wood, Jack Zahniser

BACHELOR OF ARTS IN ANTHROPOLOGY
The major in anthropology is designed for students desiring a broad generalist background, students preparing to become teachers of social sciences, and students preparing for graduate work in anthropology and in advanced specializations in particular areas (Africa, Asia, etc.) or with crosscultural and international emphasis.

The required minimum for the major is 45 semester units, in addition to those units taken for the general education requirement. Anthropology 201, 202 and 203 are required, and the

*University administrative officer

remaining 36 units must be in upper division courses. Of the 45 units, a minimum of 27 must be within the department, and a maximum of 36 within the department may be counted toward the major (any figure from 27 through 36 includes the nine units of introductory courses). Thus, depending on the variable of 27-36 units within anthropology, nine to 18 units of outside upper division courses will be taken to fulfill the major. A maximum of six units in directed studies (499) may be counted toward the major requirements, but this does not prohibit taking additional 499 units.

The broad scope of anthropology permits a student to plan a program tailored to his goals. In consultation with the major adviser, each student must formalize his program with the adviser before the program of study is begun. Only those courses on the approved study plan will count toward the major. Changes in the program are permitted, but must have adviser approval. The student must see his adviser as soon as possible in the first semester of declaring the major, but no later than the end of that semester.

Students considering advanced professional careers in research, teaching, or applications of anthropology are urged to explore and sample widely from course offerings in the other social sciences, the biological and natural sciences and the humanities and arts. Through a judicious selection of these courses it is hoped that anthropology majors will broaden their interests and diversify and develop their skills in working towards a variety of individualized career objectives.

TEACHING MINOR IN ANTHROPOLOGY

The minor in anthropology is intended as a second field for persons completing a major in another discipline in preparation for a teaching credential. Twenty-one units must be taken in anthropology; 15 of these in upper division courses. Anthropology 201 or 203, 202, and 480 are required. Two additional courses must be selected from areal offerings in the field: Anthropology 303, 321, 322, 324, 325, 326, 328, 340, 341, 342, 346, 347, 350, 351, 352, 360, and 361. Another course must be selected from theoretical/institutional courses in the field: Anthropology 313, 315, 403, 404, 406, 407, 408, 409, 410, 411, 412, 413, 415, 417, 418, 420, 421, 422, 423, 424, 425, 428, 429, 430, 440, 441, 442, 450, 455, 460, 462, 465, 466, 470, 490, and 491. A final course must be either Anthropology 401 or 481.

MASTER OF ARTS IN ANTHROPOLOGY

The program offers advanced study of general anthropology, while simultaneously encouraging specialization in one (or more) of the traditional subdisciplines, archaeology, cultural anthropology, linguistics and physical anthropology. Opportunities for field and laboratory research and for other related learning experiences permit students to enlarge upon formal classroom training and to work independently with original data.

Prerequisites

An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures).

A student who meets the requirements for conditionally classified graduate standing, as well as the following requirements, may be admitted as a classified graduate upon the development of an approved study plan:

1. A bachelor's degree with a minimum of 27 units in anthropology, including the following courses or their equivalents.
   - 201 Introduction to Physical Anthropology (3)
   - 202 Introduction to Cultural Anthropology (3)
   - 203 Introduction to Archaeology (3)
   - 401 Ethnographic Field Methods (3) *or*
     - 403 Archaeological Fieldwork (3)
   - 406 Descriptive Linguistics (3) *or*
     - 409 Anthropological Linguistics (3)
   - 480 History of Anthropology (3)
   - 481 Contemporary Anthropology (3)

   One areal course (e.g., Anthropology 328, Peoples of Africa)

One theoretical or topical course (e.g., Anthropology 415, Culture and Personality: Psychological Anthropology)

Reading courses and special examinations may be substituted for some of these prerequisites by the department.

2. A GPA of 3.0 (B) for all work taken in anthropology.

3. Evaluation and acceptance by the Graduate Study Committee. The applicant must submit a letter of intent and at least two letters of recommendation and may be required to attend a personal interview at the discretion of the Graduate Study Committee.

Students with limited subject or grade deficiencies may be considered for admission to the program if they agree to complete additional courses, selected by the Graduate Study Committee, with at least a 3.0 (B) average. Students entering from other colleges and universities and/or from fields other than anthropology may discuss appropriate course substitutions with the Graduate Study Committee.

Study Plan

The study plan for the degree must include the following:	*Units*
1. Anthropology 501 Seminar: Methodology of Anthropological Research	3
2. Anthropology 502 Contemporary Theory in Cultural Anthropology	3
3. EITHER Anthropology 598 Thesis *or* Anthropology 597 Project	6
4. Two additional graduate seminars in anthropology	6
5. Upper division or graduate work in anthropology	6
6. Upper division or graduate work in anthropology *or* related fields	6

Any adviser-approved 300- or 400-level course taken as a graduate student may be used for requirements 5 and 6. Anthropology 599, Independent Graduate Research, may be used for requirement 5 and/or 6.

For continuation in the program an average of 3.0 (B) for all work in the study plan must be maintained.

A thesis or a project must be completed for the degree. Normally a student will register for thesis or project two times, for three units each semester. Students must demonstrate reading knowledge of an appropriate (adviser-approved) foreign language prior to completion of the degree. Occasionally, the Graduate Study Committee will entertain a petition for the substitution of an *appropriate* alternative skill, such as computer programming. The core courses, Anthropology 501 and 502, must be taken within the first 1½ years of graduate work.

The progress of graduate students will be reviewed early in each fall and spring semester.

For further information, consult the Department of Anthropology.

See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin*.

ANTHROPOLOGY COURSES

201 Introduction to Physical Anthropology (3)

Man as a biological organism and in evolutionary perspective. Concepts, methods, findings and issues in the study of the order primates, including the relationships between fossil monkeys, apes and man, and the significance of genetic diversity between modern populations.

202 Introduction to Cultural Anthropology (3)

The nature of culture and its significance for man. Uniformities and variations in human cultures. Cultural analyses of major institutional forms such as the family, economy, government, religion and art with an emphasis on preliterate peoples. A consideration of central problems of cultural comparison and interpretation.

203 Introduction to Archaeology (3)

Relationship of archaeology, culture history and culture process, including some discussion of field methods and analysis of archaeological data; the uses and abuses of archaeology. A survey of world culture history from Pleistocene beginnings to the threshold of civilization.

204 Man's Many Faces (3)
The study and analysis of a broad selection of human societies, which will provide a perspective on how human problems have been solved and the possibilities for new solutions to our own problems.

303 Woman in Cross-Cultural Perspective (3)
Prerequisite: Anthropology 302. A description, analysis and survey of the influence of biological determinants as they are shaped by cultural factors such as beliefs, values, expectations and socially defined roles for women. The changing role of women in industrial society will form an important analytical segment.

305 Anthropological Simulation Games (3)
Description, criticism, construction and participation in games simulating a variety of sociocultural situations.

313 Human Genetics (3)
(Same as Biological Science 313)

315 Jazz: Past, Present and Future (3)

321 The American Indian (3)
Prerequisite: Anthropology 202 or consent of instructor. A cultural survey of North American Indians north of Mexico; origins, languages, culture areas, cultural history; the impact of European contacts.

322 Peoples of Mesoamerica (3)
Prerequisite: Anthropology 202 or consent of instructor. General survey of the ethnology of the Mesoamerican culture-area, with treatment of various Indian societies representing the principal sub-areas.

324 Ancient Mesoamerica (3)
Prerequisite: Anthropology 202 or consent of instructor. A culture history survey of the principal cultures of pre-Columbian Mesoamerica from the dawn of incipient agriculture to the Spanish conquest.

325 Peoples of South America (3)
Prerequisite: Anthropology 202 or consent of instructor. A cultural survey of Central and South America. Description of selected cultures representative of different cultural areas before and after contacts with Western countries.

326 Prehistory of South America (3)
Prerequisite: Anthropology 202 or consent of instructor. Archaeological, physical and ethnohistorical survey of the various natural zones and culture areas of South America, lower Central America and the West Indies.

328 Peoples of Africa (3)
Prerequisite: Anthropology 202 or consent of instructor. A cultural survey of Africa with special emphasis on social change and contemporary African problems.

340 Aboriginal Peoples of Asia (3)
Prerequisite: Anthropology 202 or consent of instructor. Survey of cultural areas outside the centers of high civilizations of China and Japan. Emphasis on steppe-nomadism, Siberia, and ethnic splinter groups between India and the Philippines, with focus upon their influence on the cultural centers and vice versa.

341 Peoples of China and Japan (3)
Prerequisite: Anthropology 202 or consent of instructor. Description and analysis of the religious, social and technological systems of the civilizations of Japan and China, as well as the impact of nomadic herders of North and Central Asia upon those centers. Also, a comparison of community studies on these regions.

342 Peoples of India (3)
Prerequisite: Anthropology 202 or consent of instructor. Physical and social anthropology of India; development of regional cultural traditions; continuity and changes in patterns and processes of village religion, politics, and economy; transformation of cultural traits in urban/village interaction.

345 Peoples of the Middle East (3)
Prerequisite: Anthropology 202 or consent of instructor. A cultural survey of the Middle East with descriptions of selected cultures (Arab urban, nomadic, Jewish, Turk, Berber, Kurd).

346 Archaeology of Palestine (3)
Prerequisite: Anthropology 203 or consent of instructor. Survey of culture history of ancient

Palestine from the Paleolithic to historic times, with emphasis on changes through time in settlement patterns, resource base, and sociopolitical organization.

347 Peoples of the Pacific (3)

Prerequisite: Anthropology 202 or consent of instructor. A cultural survey of the indigenous peoples and cultures of the Pacific Islands, including Australia. Special attention is given to the forces and processes contributing to social change in island communities and current problems being faced by them.

350 Peoples of Western Europe (3)

Prerequisite: Anthropology 202 or consent of instructor. Representative groups considered in modern and historical perspective, stressing especially rural-urban relationships and the dynamics of change.

351 Peoples of Eastern Europe (3)

Prerequisite: Anthropology 202 or consent of instructor. Peasant cultures of Russia, Southeast Europe, Poland, Czechoslovakia and the Baltic area, their traditional way of life and the impact of industrialization and Communist ideology.

352 Peoples of Ancient Europe (3)

Prerequisite: Anthropology 202 or consent of instructor. A survey of the cultural and social institutions of the peoples of pre-Christian Europe. Particular attention will be paid to the Greek, Italic, Germanic and Celtic peoples, and readings will be drawn largely from original ancient writers.

360 Contemporary American Culture (3)

Prerequisite: Anthropology 202 or consent of instructor. Application of anthropological methods, categories of analysis, and types of interpretation to American culture. Survey and critique of selected community studies and other kinds of relevant research.

361 Afro-American Culture (3)

Prerequisite: Anthropology 202 or consent of instructor. An introduction to African culture. A survey of African cultural characteristics in the New World, as they relate to contemporary events, including art, ideas, dance and literature.

401 Ethnographic Field Methods (3)

Prerequisites: Anthropology 202 and six additional units of anthropology or consent of instructor. Anthropological field research by students on various problems using participant observation techniques.

403 Archaeological Fieldwork (3)

Prerequisites: Anthropology 202 or 203 and consent of instructor. Excavation of a local archaeological site. Archaeological mapping, photography and recording. Laboratory methods of cataloging, preservation, description and interpretation of archaeological materials. Saturday field sessions, six fieldwork hours per week. May be repeated once for credit as an elective.

404 Analytical Methods in Archaeology (3)

Prerequisites: Anthropology 203 and 403. The employment of various physical data collecting techniques (e.g., photographic, palaeo-magnetic) in the field and the analysis of artifact collections and data from previous field operations in the laboratory. May be repeated once for credit as an elective.

406 Descriptive Linguistics (3)

(Same as Linguistics 406)

407 California Indian Languages (3)

Prerequisite: Anthropology 406. Survey of the Indian languages of California; descriptive analysis of their grammatical structure and their linguistic interrelationship. (Same as Linguistics 407)

408 The Uralic Languages (3)

Prerequisite: Anthropology 406. The grammatical structure of the Uralic languages in Eastern Europe and Siberia and their interrelationship. (Same as Linguistics 408)

409 Anthropological Linguistics (3)

Nature and functions of language; language structure and change; classification of languages; use of linguistic evidence in anthropology. (Same as Linguistics 409)

410 Language and Culture (3)

Prerequisite: Anthropology 202 or consent of instructor. The study of language as a factor in culture. Trends in the study of language and culture. (Same as Linguistics 410)

411 Folklore (3)

Prerequisite: Anthropology 202 or consent of instructor. An introduction to the study of

folktales, myths, legends, proverbs, riddles and other forms of the verbal traditions of peoples. Major concepts and theories and research methods in the study of folklore.

412 Comparative Oral Literature (3)

A comparative survey of oral literature and its role in society. The types of oral narratives, their themes, meanings, and functions will be analyzed.

413 Ethnological Music (3)

Music, music making and musicians in various nonliterate societies.

415 Culture and Personality: Psychological Anthropology (3)

Prerequisites: Anthropology 202 and Psychology 331 or 351 or Sociology 341 or consent of instructor. Comparative study of the relationship between the individual and his culture. Child training in nonwestern cultures. Survey of important concepts, studies, and research techniques.

416 The Quest for Self: East and West (3)

(Same as Interdisciplinary Center 403)

417 Life Quests (3)

An examination of contemporary ways to wisdom and humanness in cross-cultural and historical perspectives. A consideration of some new and comparative approaches to understanding the life cycle, development and fulfillment of individual personalities.

418 Mental Illness in Cross-Cultural Perspective (3)

Problems in the cross-cultural definition and treatment of mental illness. Cross-cultural perspectives on symptomatology and etiology, culture bound disorders, the folk healer, and the relationship between cultural change and mental disorders.

420 Primitive Value Systems (3)

Prerequisite: Anthropology 202 or consent of instructor. Study of what properly is considered "common sense" in the everyday life of people living within differing sociocultural environments.

421 Anthropology of Religion (3)

Prerequisite: Anthropology 202 or consent of instructor. Examination of beliefs and practices in the full human variation of religious phenomena, but with an emphasis on primitive religions. The forms, functions, structures, symbolism, and history and evolution of man's religious systems.

422 Jewish and Comparative Mysticism (3)

(Same as Interdisciplinary Center 422)

423 Comparative Aesthetics and Symbolism (3)

An analysis of the metaphysical and mystical systems underlying the "grammars" of the art, poetry, languages, myths, music and rituals of various nonliterate and literate peoples and their development into creative experiences.

424 Hallucinogens and Culture (3)

Prerequisite: Anthropology 202. A cross-cultural survey of mind-altering drugs, especially hallucinogens, as they have been utilized in religion, healing, divination, witchcraft and magic.

425 Anthropology of Law and Government (3)

Prerequisite: Anthropology 202 or consent of instructor. Sources of law-government in primitive societies; the cultural background of law; the functions and development of law and government in primitive politics; transitions to and comparisons with classical and modern legal and political systems.

428 Social Anthropology (3)

Prerequisite: Anthropology 202 or consent of instructor. A study of the social organization of preindustrial societies; religious, political and economic institutions; status and value systems; conditions and theories of change.

429 Kinship and Social Organization (3)

Prerequisites: Anthropology 202 and 428 or consent of instructor. Kinship systems in primitive society and their significance in the organization of social life. Theories of kinship, marriage regulations, and kinship role patterns.

430 Economic Anthropology (3)

Prerequisite: Anthropology 202 or consent of instructor. Analysis of anthropological concepts of economy, ecology, and technology; relationship between habitat, economy, and culture. A survey of the different types of economic systems found throughout the world; outline of the economic development of mankind.

440 Human Evolution (3)
Prerequisite: Anthropology 201. Biological Science 404 is suggested. Advanced primate evolution with emphasis on the origin of *Homo sapiens* as evidenced in the fossil record and through biochemical and molecular studies. Evolutionary theory and problems in human evolution.

441 Human Variation (3)
Prerequisite: Anthropology 201. Biological Science 313 and 412 are suggested. A survey of the processes underlying and the theories for the existence of the present variation between and within human populations. The genetics of human populations and the study of the significance of racial classifications.

442 Medical Anthropology (3)
A survey of human health and disease and their relationship to cultural practices, beliefs and environmental factors; histories of various diseases as factors of cultural change; examinations of varying health care delivery systems.

450 Culture and Education (3)
Prerequisite: Anthropology 202 or Education 301 or consent of instructor. The transmission of values, implicit cultural assumptions, and the patterning of education in cross-cultural perspective, with special attention to American culture and development problems.

455 Ethno-ecology (3)
Prerequisites: Anthropology 202 and consent of instructor. A comparative study of culture determining man's impact on his environment. Our factual knowledge, different major approaches, important research issues, and methods of study will be the subject of this survey.

460 Culture Change (3)
Prerequisites: Anthropology 202 and 301 or consent of instructor. Interrelations between cultural, social and psychological processes in the dynamics of culture growth and change. Impact of western technology on tribal and peasant societies. Anthropological contributions to the planning of directed sociocultural change in selected areas.

462 Applied Anthropology (3)
Prerequisites: Anthropology 202 plus nine other units of anthropology or consent of instructor. The uses of anthropological skills and sensitivities in approaching contemporary human problems. Includes examination of issues related to directed cultural change, organizational development, program planning and evaluation, and professional ethics.

465 Alternative Futures (3)
A study of the growing literature on the future and a consideration of its implications for anthropology and the other social sciences and humanities.

466 Myths for Moderns (3)
A comparative multidisciplinary exploration of the nature and needs for mythic types of belief systems in contemporary life. Examination and interpretation of selected myths.

470 Philosophical and Behavioral Foundations of Anthropology (3)
Prerequisite: Anthropology 202 and open to lower division students with the consent of instructor. Consideration of basic assumptions and contexts of anthropological work. The synthesis of ideas and methods into professional skills and careers.

480 History of Anthropology (3)
Prerequisite: Anthropology 202 or consent of instructor. A history of the principal contributions of leading anthropologists 1850-1950; review of evolutionary, diffusionist, historical, particularist, configurationalist, and culture and personality approaches in anthropology.

481 Contemporary Anthropology (3)
Prerequisite: Anthropology 202 or consent of instructor. A study of the principal contributions of anthropologists from 1950 to the present; review of neoevolutionist, sociological, structuralist, psychological and symbolic approaches in anthropology.

490 Undergraduate Seminar in Anthropology (3)
Prerequisite: consent of instructor. Topics in anthropology selected by the faculty and students participating in the course. May be repeated for credit.

491 Internship in Anthropology (3)
Prerequisites: 18 upper division units in anthropology and/or related fields. Career opportunities in anthropology. On-the-job training under faculty supervision will provide op-

portunity to translate theoretical concepts into vocational activity through museum, industry or governmental service.

499 Independent Study (1-3)

Prerequisites: at least 15 units of anthropology and consent of adviser. Student selection of an individual research project involving either library or fieldwork. Conferences with the adviser as necessary, and the work results in one or more papers. May be repeated for credit.

501 Seminar: Methodology of Anthropological Research (3)

Prerequisites: Anthropology 202, 401 and consent of instructor. Examination, analysis and evaluation of the contemporary methodological spectrum in anthropology and of new trends in research planning and implementation. Consideration and critique of specific cases involving differing research designs.

502 Contemporary Theory in Cultural Anthropology (3)

Prerequisite: Anthropology 480 or consent of instructor. Critique of the basic assumptions and theoretical positions of leading contemporary anthropologists.

504 Seminar: Selected Topics in Anthropology (3)

Prerequisites: completion of undergraduate major in anthropology and/or graduate standing or consent of instructor. The topic chosen and a general outline of the seminar is circulated prior to registration. May be repeated.

505 Phonological Analysis (3)

(Same as Linguistics 505)

507 Grammatical Analysis (3)

(Same as Linguistics 507)

508 Modern Theories of Syntax (3)

Prerequisite: Anthropology 507 or Foreign Languages 507 or Linguistics 507 or consent of instructor. Speech 404 and Anthropology 410 recommended. Study of contemporary theories of grammar, with special emphasis on transformational, generative, logical and electromechanical bases and techniques of utterance analysis. (Same as Linguistics 508)

550 Seminar in Problems in the Teaching of Anthropology (3)

Prerequisite: consent of instructor. Discussion of a variety of methods and materials for the teaching of anthropology at primary, secondary, and undergraduate college levels.

592 Field Methods in Linguistics (3)

Prerequisites: Anthropology 505 and 507 or consent of instructor. Methods of analysis and description of language structures. Data elicited from informants will be analyzed and described. Controlled study of a live informant's language. (Same as Linguistics 592)

598 Thesis (3-6)

Prerequisites: graduate standing and consent of instructor. The writing of a thesis based on original field or laboratory research, library study or an educational project, and its analysis and evaluation. May be repeated for credit.

599 Independent Graduate Research (1-3)

Prerequisite: consent of adviser. Individual research on a field, laboratory, or library study, with conferences with a project adviser as necessary, and resulting in one or more papers. May be repeated for credit.

DEPARTMENT OF CHICANO STUDIES

FACULTY
Isaac Cardenas
Department Chair
Dagoberto Fuentes, Joseph Platt

BACHELOR OF ARTS IN THE CHICANO STUDIES OPTION OF ETHNIC STUDIES

The degree program in Chicano studies is designed to provide an effective vehicle in fulfilling a variety of pressing needs in contemporary higher education. Among these needs are to educate students to the culture, language, education, history, politics, and socioeconomics of the Chicano population in the United States.

The program emphasizes preparation for: (1) those interested in bilingual-bicultural education to meet elementary, secondary and cross-cultural specialist credentials; (2) students pursuing advanced degrees (M.A. and Ph.D.); (3) those entering a variety of occupations in urban affairs, government, social work, school administration, counseling,

business, criminology, law, foreign service and other related areas; and (4) majors in other academic fields such as liberal studies, history, sociology, psychology, literature, anthropology, who wish to include additional scope to their field.

The Chicano studies major consists of 36 units, 12 lower and 24 upper division.*

	Units
Lower Division	**12**
Required:	
106 Introduction to Chicano Studies (3)	
220 Mexican Heritage (3).	
Electives:	
102 Communication Skills (3)	
120 Bilingual Oral Expression (3)	
200 Chicano Movement (3)	
213 Spanish for the Spanish Speaking (3)	
215 Chicano Creative Writing (3)	
218A Survey of Chicano Culture (3)	
218B Survey of Chicano Culture (3)	
Upper Division	24
Required: (6 units to be selected from the following)	
430 The Evolution of Mexican Literature (3)	
440 Mexican Intellectual Thought (3)	
445 History of the Chicano (3)	
453 Mexico since 1906 (3)	
Electives:	
300 Barrio Conversational Spanish (3)	
302 Ancient Mexican Culture (3)	
305 The Chicano Family (3)	
306 Barrio Studies (3)	
307 Barrio Studies (3)	
320 Chicano Art (3)	
336 Main Trends in Spanish-American Literature (3)	
337 Contemporary Chicano Literature (3)	
403 Cultural Differences in Mexico and the Southwest (3)	
411 Mexican Arts and Mexican Society (3)	
415 Chicano Music Appreciation (3)	
420 Spanish for the Elementary School Teacher in the Barrio (3)	
430 The Evolution of Mexican Literature (3)	
431 The Chicano Child (3)	
432 The Chicano Adolescent (3)	
433 Mexican Literature Since 1940 (3)	
440 Mexican Intellectual Thought (3)	
441 Religion in the Chicano Society (3)	
445 History of the Chicano (3)	
450 The Chicano and Contemporary Issues (3)	
453 Mexico Since 1906 (3)	
460 The Chicano and Politics (3)	
499 Independent Study (1-3)	
Total	36

MINOR IN CHICANO STUDIES

The minor in Chicano studies consists of 24 units in the following areas:

Required lower division courses (6 units)

106 Introduction to Chicano Studies (3)
220 Mexican Heritage (3)

Required upper division courses (6 units)

430 The Evolution of Mexican Literature (3)

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* Students must consult with their advisers to develop an approved study plan.

440 Mexican Intellectual Thought (3)
453 Mexico Since 1906 (3)

Approved electives
Twelve units of approved coursework in lower and upper division classes that are selected by the adviser.

TEACHER CREDENTIAL REQUIREMENTS
The B.A. and minor in Chicano studies are approved by the State Board of Education for those seeking an elementary or secondary teaching credential. Additionally, the department has submitted an application to the Commission for Teacher Preparation and Licensing for obtaining a waiver for multiple subject (elementary) credential objective. Students should consult an adviser in the department and in the School of Education for meeting teaching credential requirements and waiver information.

THE BILINGUAL/CROSS-CULTURAL SPECIALIST CREDENTIAL PROGRAM
Requirements for this credential are described in a brochure available at the offices of the Department of Chicano Studies, the Department of Foreign Languages and Literatures, or the School of Education. The Chicano studies component of the specialist credential program requires six units from the following Chicano studies courses:

300 Barrio Conversational Spanish (3)
403 Cultural Differences in Mexico and the Southwest (3)
420 Spanish for the Elementary School Teacher in the Barrio (3)
431 The Chicano Child (3)
432 The Chicano Adolescent (3)
445 History of the Chicano (3)

CHICANO STUDIES COURSES

102 Communication Skills (3)
A methodical presentation of the basic communication skills emphasizing oral and written expression which shall include a unit on the mechanics of writing and reporting on a term paper.

106 Introduction to Chicano Studies (3)
A study of the role of the Chicano in the United States. Special emphasis on the Chicano's cultural values, social organization, urbanization patterns, and the problems in the area of education, politics and legislation.

120 Bilingual Oral Expression (3)
Recommended: Chicano Studies 102 and/or 103. Designed to train the bilingual Chicano in the process of oral expression in English and barrio Spanish. Pertinent topics will be selected in the areas of education, law enforcement and contemporary issues for bilingual oral expression.

200 The Chicano Movement (3)
A survey of the history of the Chicano movement, its present activists and their intellectual philosophies.

213 Spanish for the Spanish-Speaking (3)
The Spanish language as it is spoken in the United States today. Designed to improve the basic communication skills in Spanish for students from Spanish-speaking backgrounds; emphasis on vocabulary building, syntactical analysis and conversation. Designed for Chicano students but not restricted to them.

215 Chicano Creative Writing (3,3)
Chicano creative writing utilizing the barrio's trilingual expressions. Student work as well as the work of contemporary Chicano writers will be analyzed.

218A,B Survey of Chicano Culture (3)
A survey of the Chicano's cultural heritage from the pre-Cortesian period to the present. A historical analysis of the music, literature, art and dance of the Chicano. **A**—Literature and art. **B**—History, music and dance.

220 Mexican Heritage (3)
Introduction to the basic characteristics of the Mexican, especially the Chicano society and culture and its ramifications in the United States today. Covers the period of 1519 to the

present day. Emphasis is placed on the arts, literature, and history of Mexico and the Chicano in the United States.

300 Barrio Conversational Spanish (3)

Analysis of the Caló language of the southwestern states of the United States. Students will study the bicultural language of the Chicanos, origin, development and contemporary use in the barrios.

301 La Raza Unida and Third Party Politics (3)

The role of La Raza Unida as a political instrument of the Chicano community. The party's leadership, ideologies and differing political strategies in various states and at the national level.

302 Ancient Mexican Culture (3)

A historical and cultural survey of the principal pre-Columbian cultures of Mexico and their significance for Mexican society.

305 The Chicano Family (3)

The Chicano family development as an American social institution. Historical and cross-cultural perspectives. The socio- and psychodynamics of the Chicano family.

306 Barrio Studies (3)

Prerequisite: Chicano Studies 200 or 220 or consent of instructor. Classroom instruction covering the major characteristics of the barrio. Supervised fieldwork in the barrio is required. Analysis of the barrio or agency will be made after fieldwork is completed. (2 hours lecture, 3 hours fieldwork)

307 Barrio Studies (3)

Prerequisite: Chicano Studies 306. Classroom instruction covering the major characteristics of the barrio and supervised fieldwork in the local barrios. An analysis of the barrio or agency will be made after fieldwork is completed. (2 hours lecture, 3 hours fieldwork)

320 Chicano Art (3)

An overview of Mexican art forms from pre-Cortesian epochs to the contemporary artists, with emphasis on the use of oil painting techniques as employed by modern Mexican and Chicano artists.

336 Main Trends in Spanish American Literature (3)

An introduction to the main currents of Spanish American literature emphasizing contemporary works. Close attention will be given to the relation between the artistic expression and the ideological values of the period.

337 Contemporary Chicano Literature (3)

Prerequisite: Chicano Studies 101 or 106, or 220, or 237, or consent of instructor. A study of the modern Chicano writers in the United States. Special emphasis will be given to Allurista, Corky Gonzales, Octavio Romano, el teatro campesino and the major Chicano magazines and newspapers.

403 Cultural Differences in Mexico and the Southwest (3)

A study of the cultural conflicts in Mexico as seen by the contemporary thinkers of Mexico and the United States. Special emphasis will be given to the urban and rural problems.

411 Mexican Arts and Mexican Society (3)

Study of the ways in which Mexican artists, architects and designers have reacted to the political, social and artistic developments in Mexico and the world.

415 Chicano Music Appreciation (3)

A survey of Mexican music ranging from the pre-Cortesian period to the present in Mexico and in the southwestern states of the United States. The history and music are presented by lectures and recordings.

420 Spanish for the Elementary School Teacher in the Barrio (3)

Designed to improve the oral expression of teachers in the barrio elementary schools. Special emphasis will be given to the language patterns of the Chicano students and their parents.

430 The Evolution of Mexican Literature (3)

Survey and analysis of the Nahautl, Mexican and Chicano literature from the pre-Columbian period to the present. The latter part of the course will focus on contemporary Chicano writers.

431 The Chicano Child (3)

Study of the Chicano child from preschool through grade six. Emphasis on motor, physical, social, intellectual and emotional growth and development and their effect on school adjustment and achievement. Observation of preschool and grade school children will be arranged.

432 The Chicano Adolescent (3)
A survey of the Chicano adolescents' social, intellectual and emotional growth and development. Special emphasis will be placed on the bicultural pressures from the barrio, family structure, school and achievement values.

433 Mexican Literature Since 1940 (3)
An in-depth study and analysis of the literature of Mexico since 1940. Emphasis on the works of Carlos Fuentes, Luis Spota, Rodolfo Usigli, Xavier Villarrutia, Juan Jose Arreola, Octavio Paz, Roberto Blanco Moheno and Luis G. Basurto.

440 Mexican Intellectual Thought (3)
Prerequisite: reading knowledge of Spanish and Chicano Studies 237 and 302 recommended. Study and discussion of the emergence of the Chicano movement dealing with political, economic and sociological facets. Analyzes the writings of the Nahuatl, Spanish, Spanish-American and Chicano writers with special attention on the contemporary writers.

441 Religion in the Chicano Society (3)
Prerequisite: Chicano Studies 220 or consent of instructor. A comparative study of American Protestant and Mexican Catholic thought and their influence on the values held by Anglos and Chicanos. Special emphasis will be placed on the contemporary issues.

445 History of the Chicano (3)
History of the Chicano from the pre-Columbian period to the present. Special emphasis on the Chicano's changing role in the United States, his cultural identity crisis and his achievements.

450 The Chicano and Contemporary Issues (3)
Analysis and discussion of the socioeconomic and political problems confronting the Chicano, with emphasis on proposed solutions. Particular focus on the effect that social institutions have had on the Chicano community. Study and research will be made in these areas.

453 Mexico Since 1906 (3)
Prerequisite: upper division class standing. A study of the Mexican Revolution of 1910 stressing the political, economic and social features of this period. Special emphasis on the Revolution and its contributions in the fields of art, literature and social reforms.

460 The Chicano and Politics (3)
Theory of urban politics and evaluation of issues that affect the Chicanos and American society. Evaluations and surveys will be made on political organizations in the Hispanic-surnamed communities.

499 Independent Study (1-3)
Prerequisites: senior level and approval by the department chair and instructor(s) in charge of directing the study. An opportunity to do independent study under the guidance of the faculty, of a subject of special interest to the student.

DEPARTMENT OF COMMUNICATIONS

FACULTY
Kenward Atkin
Department Chair
James Alexander, William Berg, Fenton Calhoun, George Fukasawa, Mary Lynn Hartman, Carolyn Johnson, Raynolds Johnson, Frank Kalupa, Martin Klein, Mary Koehler,* George Mastroianni, J. William Maxwell, Rick Pullen, Albert Ralston, Marvin Rosen, Ted Smythe, Larry Taylor

The program leading to the Bachelor of Arts in Communications emphasizes study of broad principles of communications, functions of the mass media in a democratic society, and theories relevant to informing, instructing, and persuading through communications media. It may serve as preparation for careers in mass media, business, industry, government and education; and as a preparation for graduate and professional schools.

A master of arts program in communications provides advanced study in communications and related disciplines for those seeking professional careers in teaching, research and development, and mass media.

* University administrative officer

Programs in the department are designed to provide both theory and practice in the use of print, broadcast and film media of communication to inform, instruct and persuade.

BACHELOR OF ARTS IN COMMUNICATIONS

A communications major is required to take 15 units of core requirements in addition to 21 units in a chosen emphasis. The department offers six emphases to choose from: advertising, news (journalism), photocommunications, public relations, technical and business communications, and telecommunications. Special emphases designed to meet the needs and interests of individual students also may be arranged.

Collateral requirements: Twelve units of upper division coursework in other departments approved by the adviser are also required. Collateral courses for each emphasis are recommended by the emphasis coordinator. The major totals 48 units.

COMMUNICATIONS CORE

Nine units of required coursework:

Com 233 Mass Communication in Modern Society (3)
Com 407 Communication and the Law (3)
Com 425 History and Philosophy of American Mass Communication (3)

Plus six units selected from the following:

Com 410 Principles of Communications Research (3)
Com 426 World Communication Systems (3)
Com 427 Current Issues in Mass Communication (3)
Com 428 Communications and Social Change (3)
Com 431 Mass Communications in Communist Systems (3)
Com 480 Persuasive Communications (3)

COMMUNICATIONS EMPHASES

Every communications major must select and complete 21 units of coursework in a major emphasis.

ADVERTISING

Coordinator: Fenton Calhoun

Com 101 Communications Writing (3)
Com 350 Introduction to Advertising (3)
Com 353 Advertising Copy and Layout (3)
Com 354 Retail Advertising (3)
Com 356 Advertising Production (1,1)
Com 439 Mass Media Internship (2)

Plus five units selected from the following:

Com 217A,B; 359; 361; 380; 381; 446; 451

And 12 collateral units of upper division courses beyond general education approved by adviser.

NEWS COMMUNICATIONS (JOURNALISM)

Coordinator: James Alexander

Com 101 Communications Writing (3)
Com 102 Communications Writing (3)
Com 217A,B Introduction to Black-and-White Photography (2)
Com 319 Communications Photography (2)
Com 332 Copy Editing and Makeup (3)
Com 335 Reporting of Public Affairs (3)
Com 338 Newspaper Production (3)
Com 439 Mass Media Internship (2)

And 12 collateral units of upper division courses beyond general education approved by adviser.

PHOTOCOMMUNICATIONS

Coordinator: Marvin Rosen (Acting)

Six units of writing courses selected from the following:

Com 101, 102, 301, 334, 353, 362, 403 (Note: Com 101 is a prerequisite to all the previously listed courses except 301 and 334.)
Com 217A,B,C Introduction to Black-and-White Photography (3)

Com 220A,B,C Introduction to Color Photography (3)
Com 319 Communications Photography (2)
Com 321 Advanced Color Photography (2)
Com 439 Mass Media Internship (2)
Plus three units selected from the following:
Com 306, 311, 338, 358, 359
And 12 collateral units of upper division courses beyond general education approved by adviser.

PUBLIC RELATIONS
Coordinator: Frank Kalupa
Com 101 Communications Writing (3)
Com 361 Theories and Principles of Public Relations (3)
Com 362 Public Relations Writing (3)
Com 439 Mass Media Internship (2)
Com 463 Public Relations Methods (3)
Plus seven units selected from the following:
Com 217A,B,C; 332; 338; 350; 353; 358; 359; 363; 465; 497
And 12 collateral units of upper division courses beyond general education approved by adviser

TECHNICAL AND BUSINESS COMMUNICATIONS
Coordinator: Martin Klein
Com 101 Communications Writing (3)
Com 439 Mass Media Internship (2)
An additional six units from the following:
Com 102 Communications Writing (3)
Com 301 Writing for Telecommunications (3)
Com 334 Feature Article Writing (3)
Com 358 Graphic Communications (3)
Plus 10 units selected from the following:
Com 217A,B; 303; 332; 359; 375; 380; 403
And 12 collateral units of upper division courses beyond general education approved by adviser.

***TELECOMMUNICATIONS**
Coordinator: George Mastroianni
Com 301 Writing for Telecommunications (3)
Com 371 RadioTelevision News and Public Affairs (3)
Com 380 Introduction to Radio and Television (3)
Com 390 Introduction to Telecommunications Production (3)
Com 439 Mass Media Internship (2)
Plus seven units selected from the following:
Com 217A,B; 220; 290; 311; 335; 375; 381; 411; 473; 475; 477; 479; 490
And 12 collateral units of upper division courses beyond general education approved by adviser.

SPECIAL EMPHASIS
Coordinator: Marvin Rosen

Students whose interests involve more than one emphasis may seek approval of a special emphasis. Minimum requirements for the special emphasis are the same as for other emphases:

15 units of core requirements; 21 units of coursework in communications, at least six of which will be in writing courses and 12 in upper division; and 12 collateral units of upper division courses in other departments. Approval of the special emphasis plan must be sought in advance from the Department of Communications. For further details, contact the special emphasis coordinator.

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* Telecommunications students who wish to emphasize film in broadcasting should take: Com 290A or 290B; 311; 375; 411; and 439.

MINOR IN COMMUNICATIONS

Twenty-one units approved by the department are required for a minor in communications. The following represents a basic framework:

Core (9 units to be selected from the following)

Com 233 Mass Communication and Modern Society (3)
Com 407 Communications and the Law (3)
Com 425 History and Philosophy of American Mass Communication (3)
Com 426 World Communications Systems (3)
Com 428 Communications and Social Change (3)
Com 431 Mass Communications in Communist Systems (3)
Com 480 Persuasive Communications (3)

Emphasis (12 units)
Twelve units of coursework required in an emphasis approved by the coordinator including three units of communications writing courses.

INTERNSHIP PROGRAM

The Department of Communications has developed an internship program designed to provide academic and practical experience for students in all emphases. The student must apply for work experience one semester in advance of the senior level semester in which the internship is to be completed. Supervision is provided by the internship coordinators and the cooperating agency.

TEACHER CREDENTIAL REQUIREMENTS

The department offers major and minor programs approved by the State Board of Education for those seeking an elementary or secondary teaching credential. For advisement, consult the department and an adviser in the School of Education.

Elementary

Communications majors may earn the multiple subject credential under the Ryan Act without being required to take the teacher examination. All departmental emphases qualify for this program under an approval granted by the California State Commission for Teacher Preparation and Licensing. Interested students should consult the department's multiple subject credential adviser at an early date to develop an approved study plan.

Secondary

Communications majors planning a teaching career at the secondary level must complete the communications core and News Communication emphasis.

In addition, it is recommended that a student have at least one semester of Communications 358 or 359. The student must also fulfill professional education course requirements. Both Journalism Education 442 and 749 (Student Teaching) are offered by the department. (See "Journalism Education.")

Elementary and Intermediate

A program of courses totaling 36 units may be designed for elementary and intermediate teacher candidates in consultation with the department chair.

MASTER OF ARTS IN COMMUNICATIONS

The Master of Arts in Communications is designed to provide advanced study in communications and related disciplines and to develop a research emphasis or option related to the processes and effects of communications. These options are: advertising, journalism education, news, public relations, technical communication or telecommunication.

Students completing the Master of Arts in Communications with an emphasis in journalism education research are eligible for journalism teaching positions in high school or community college.

Prerequisites

An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures).

A student who meets the requirements for conditionally classified graduate standing, as well as the following requirements, may be admitted as a classified graduate upon the development of an approved study plan: an undergraduate grade-point average of 2.75 or 3.0 in the major; satisfactory performance on the Graduate Record Examination Aptitude test; and satisfactory coursework appropriate for the emphasis selected. Subject matter deficiencies, as determined by the emphasis adviser and approved by the department graduate adviser, are to be removed prior to advancement to candidacy.

Study Plan
Students are required to complete 30 units of approved study, including 18 units in 500-level communications courses and 12 units of emphasis-related courses. Six of the 18 units of graduate level courses are applicable to the thesis or project requirement.

For further information, consult the Department of Communications. See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin*.

COMMUNICATIONS COURSES

100 Introduction to Communications (3)
A survey of the mass media and their relationship to society today.

101 Communications Writing (3)
An introductory course covering principles of reporting and writing, with emphasis on content organization, conciseness, and clarity. Typing ability required.

102 Communications Writing (3)
Prerequisite: Com 101 or consent of instructor. Concentration on reporting and writing of more advanced material. Typing ability required.

103 Applied Writing (3)
Principles and practice in organizing and preparing letters, reports, documents, and proposals required in most occupations. Designed especially for non-communications majors.

217A Introduction to Black and White Photography (1)*
Camera, accessories, materials, exposure, subject treatment and composition. (No laboratory)

217B Introduction to Black and White Photography (1)
Prerequisite: Com 217A or concurrent enrollment. Laboratory processing, printing, finishing and studio techniques.

217C Introduction to Black and White Photography (1)
Prerequisite: Com 217B or concurrent enrollment. Intermediate composition and treatment; special photographic techniques and applications.

220A Introduction to Color Photography (1)*
Prerequisite: Com 217A or concurrent enrollment. Theories of light and color. Principles of color photography. Students use commercially processed color transparency film. (No laboratory)

220B Introduction to Color Photography (1)*
Prerequisite: 220A or concurrent enrollment. Color slides in communication. Developing theme and story in slide presentations. (No laboratory)

220C Introduction to Color Photography (1)
Prerequisite: 220B or concurrent enrollment. Theory and principles of color film and print processing. Limited laboratory practice in negative and positive film processing.

233 Mass Communication in Modern Society (3) (Formerly 333)
Basic structure and interrelationships of newspapers, magazines, films, radio and television, in terms of their significance as social instruments and economic entities in modern society.

234 Sports Writing (3)
Preparation and writing of sports articles for specific audiences.

280 History of Radio and Television (3)
(Same as Theatre 280)

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* Students wishng a non-laboratory introduction to photography may enroll in Com 217A or 220A.

290A,B History and Aesthetics of Motion Pictures (3,3)
History and development of the motion picture as an art form and social force. **A**—the motion picture from its origins until 1945. **B**—the contemporary cinema from 1945 to present. (Same as Theatre 290A,B)

301 Writing for Telecommunication (3)
An introduction to theory and principles of writing employed in the broadcast and film media.

303 Business Communications (3)
Design and implementation of communications systems for various business enterprises. Utilizes graphic analysis and analytical techniques. Includes practice in producing messages and channeling them to avoid ambiguities.

306 Photocommunications Production (2)
Prerequisite: 10 units of photography or consent of instructor. Advanced production of photographs and photographic communications for the mass media, business, education, government, industry and science. May be repeated for credit to a maximum of six units. (4 hours activity for each 2 units)

311 Introduction to Motion Picture Production (3)
Prerequisite: Com 217A,B or equivalent. Introduction to theory and practice of motion picture photography and film production. (2 hours lecture, 3 hours laboratory)

319 Communications Photography (2)
Prerequisite: Com 217A,B or consent of instructor. Creative aspects and techniques of making photographs for publication: newspaper and magazine news, advertising, feature, sports and women's pages. (1 hour lecture, 3 hours laboratory)

321 Advanced Color Photography (2)
Prerequisites: Com 217A,B,C. Positive and negative color film processing, sensitometry, and color printing.

332 Copy Editing and Makeup (3)
Prerequisites: Com 101 and 102, or consent of instructor. Practice and theory of editing informational materials for publication in newspapers and magazines. (6 hours activity)

334 Feature Article Writing (3)
Nonfiction writing for newspapers and magazines, including study of sources, methods and markets.

335 Reporting of Public Affairs (3)
Prerequisites: Com 101 and 102, or consent of instructor. Coverage in depth of significant events pertinent to operations of governmental units and related organizations.

338 Newspaper Production (3)
Prerequisite: consent of instructor. A lecture activity course in which members of the class constitute the editorial staff of the university newspaper. The group meets four hours per week for critiques in news reporting, writing, editing and makeup, followed by production. With consent of instructor, the course may be repeated for a maximum of nine units of credit. (More than 9 hours laboratory)

350 Introduction to Advertising (3)
Survey of advertising in America. Emphasis on the language and art of advertising and its role in marketing.

353 Advertising Copy and Layout (3)
Prerequisite: Com 350 or consent of instructor. Writing of copy and layout of advertisements, based on study of sales appeals, attention factors and illustrations. (6 hours activity)

354 Retail Advertising (3)
Prerequisite: Com 350 or consent of instructor. Principles and procedures of retail advertising; utilization of mass media; supervised field assignments in the analysis of specific advertising needs.

356 Advertising Production (1)
Prerequisite: Com 350 or consent of instructor. Preparation of advertisements for the university newspaper and magazine. Advertising accounts assigned to each student. Weekly critique sessions. Individual consultation with instructor. (5 hours laboratory)

358 Graphic Communications (3)
A lecture/activity class covering basic principles of graphic communication. Areas studied include printing processes, publication formats, copy preparation, copy-fitting techniques, layout principles, paper selection and distribution methods. (1 hour lecture, 4 hours activity)

359 Publications Production (2)
Prerequisite: Com 358 or consent of instructor. A production class for development of student publications, including the university magazine, authorized by appropriate university authorities. Activities include writing articles, editing copy, taking photographs and preparing layouts. (More than 6 hours laboratory)

361 Principles of Public Relations (3)
Examination of the social, behavioral, psychological, ethical, economic and political foundations of public relations, as well as the theories of public relations as a communications discipline.

362 Public Relations Writing (3)
Prerequisite: Com 101 or consent of instructor. A course in the practice of writing for business, industry and nonprofit organizations. Emphasis on creating effective forms of public relations communication.

363 Publications Editing (3)
Prerequisites: Com 361 and 362 or consent of instructor. Theory and practice of editing functions and techniques involved in creative development of publications for business, industry and nonprofit organizations and institutions. Emphasis on magazines, newspapers, newsletters and brochures.

371 Radio-Television News and Public Affairs (3)
Prerequisites: Com 101 or 301 and 380 or equivalent (or concurrent enrollment). Theory and practice of covering news events and public affairs for radio and television. (6 hours activity)

375 The Documentary Film (3)
Purpose, development, current trends, critical analysis and production requirements of the documentary film. Future of the medium in business, government, education and television.

380 Introduction to Radio and Television (3)
(Same as Theatre 380)

381 Broadcast Advertising (3)
Prerequisite: Com 350 or consent of instructor. Study of television and radio as advertising media. Planning advertising campaigns, costs and coverage. (2 hours lecture, 3 hours laboratory)

390 Introduction to Telecommunications Production (3)
Prerequisite: Com 380. Basic theory and practice of radio and television program production. (2 hours lecture, 3 hours laboratory)

401 Report Writing (3)
Planning, organizing, and writing of reports for business, education and government. Practice will be given in use of graphic aids and preparation of copy for reports that are to be printed. Recommended for non-majors.

403 Technical Writing (3)
Prerequisite: Com 101 or consent of instructor. Study of uses of technical writing in industry, science and engineering and completion of written assignments designed to test understanding of, and provide experience with, various forms.

407 Communication and the Law (3)
The Anglo-American concept of freedom of speech and press; statutes and administrative regulations affecting freedom of information and publishing, advertising and telecommunication. Libel and slander, rights in news and advertising, contempt, copyright and invasion of privacy.

410 Principles of Communication Research (3)
Survey of research methods used to assess the effects of print, broadcast and film communications on audience attitudes, opinions, knowledge and behavior. Basic concepts of research design and data analysis in communications research.

411 Advanced Motion Picture Production (3)
Prerequisites: Com 217A or 218, 311, 301 or concurrent enrollment, or consent of instructor. Advanced theory, procedures and practice in film production: motion picture (silent and sound), script-writing, transfer and mixes, production, distribution and financing.

425 History and Philosophy of American Mass Communication (3)
American mass communication, beginning g with newspapers and periodicals and continuing through radio and television, includes ideological, political, social and economic aspects.

426 World Communication Systems (3)
Major mass communication systems, both democratic and totalitarian, and the means by which news and propaganda are conveyed internationally.

427 Current Issues in Mass Communication (3)
Mass media regulation by the government, "objective" versus "interpretive" news reporting and ethical and legal questions of particular cases.

428 Communications and Social Change (3)
Study of how innovations—ideas, products, and practices perceived as new—are communicated to members of a social system. Examines the roles of adopters, opinion leaders, change agents, and communications as they relate to the diffusion of innovations and consequent changes in social systems.

431 Mass Communications in Communist Systems (3)
Mass media in Communist societies, particularly the U.S.S.R., the People's Republic of China, Poland and Yugoslavia. Emphasis on the interrelationships of the mass media, people and party.

439 Mass Media Internship (2)
Prerequisites: senior standing, communications major. Student serves supervised internship, according to emphasis, with newspaper, magazine, radio or television station, press association, public relations firm or advertising agency. Application must be made through department coordinator one semester prior to entering program.

442 Film Directors and Genres (3)
Prerequisite: Com 290A or B or consent of instructor. An examination of films of significant directors, specific nations, or film genres, concentrating on historical, social and aesthetic qualities.

446 Advertising and Media Management (3)
Prerequisite: Com 350 or Marketing 354. Principles and problem-solving techniques underlying the management of the advertising function; procedures and processes leading to sound decisions in solving advertising problems and utilization of the mass media.

451 National Advertising Campaigns (3)
Prerequisite: Com 350 or consent of instructor. Advanced study of advertising campaigns and utilization of mass media—such as television, newspapers and magazines—in national advertising programs. Design of complete campaigns from idea to production readiness.

463 Public Relations Methods (3)
Prerequisite: Communications 361 or consent of instructor. Techniques used for effective public relations in both personal and mass communications.

465 International Public Relations (3)
Public relations principles applied to international operations, both private and public.

473 Telecommunications Regulation (3)
Prerequisite: Com 380. Self-regulation, governmental regulation and international regulation of broadcast programming.

475 Telecommunications Programming
Prerequisite: Com 380. Theory and practice of programming for television and radio.

477 Telecommunications Station Management (3)
Prerequisite: Com 380. Management functions and policies of broadcasting stations and networks. Effects of government, public opinion, employee groups and ownership. Technical, legal, financial and other obligations.

479 Advanced Telecommunication Production (3)
Prerequisite: Com 380 and 390 or consent of instructor. Advanced techniques in producing television-radio programs. (2 hours lecture, 3 hours laboratory)

480 Persuasive Communications (3)
Processes and effects of persuasive communications applied to mass communication. Interaction of the communicator, audience, message content and structure, and social context in influencing attitudes, beliefs, and opinions.

485 Film Production (3)
Prerequisites: Com 311, 375 and 411 or consent of instructor. Fundamentals of documentary film production planning and execution. (2 hours lecture, 3 hours laboratory)

489 Television Production Activities (3)
Prerequisite: six units of television courses or equivalent and/or consent of instructor. Honors course. Students develop, write, product and direct regular programs of information, instruction or diversion for distribution on the campus-wide closed-circuit television system and area cable systems.

490 Film Theory (3)
Prerequisite: Com 290A and/or 290B or equivalent or consent of instructor. Analytical and comparative study of theories relating to film-making; nature of the film medium.

497 Seminar in Public Communications Practices (3)
Prerequisite: Com 463 and consent of instructor. Examination of the vital role of public relations in contemporary society. Emphasis on ethics, social responsibilities and future trends in the emerging profession.

499 Independent Study (1-3)
Prerequisite: consent of department chair. Individually supervised mass media projects and research on campus and in the community. May involve newspaper and magazine publishers, radio and television stations and public relations agencies. May be repeated.

500 Theories of Communication (3)
Theoretical study of communication processes and effects in terms of source, media, message, audience and context variables. Review of research on the effects of communications on audience attitudes, opinions, knowledge and behavior.

501 Literature of Communications (3)
Types, sources and uses of communications literature; application to individual graduate studies.

503 Practicum in Instructional Communication (3)
Principles of programmed instruction applied to achieve training objectives through the use of the communication media. Includes development and empirical tryout of short programs in print, film, and/or broadcast media utilizing behavioral analysis of typical audiences to assess program effects.

508 Humanistic Study of Communications (3)
Prerequisites: Com 410, 500 or concurrent enrollment and classified status. Seminar in humanistic methods of study in communications: historical research and critical analysis applied to problems, issues, and creative works in communication.

509 Seminar in Communication Research (3)
Prerequisites: Com 410, 500 and classified status. Principles of social-scientific research design and analysis applied to the study of communication processes and effects.

510 Advanced Seminar in Communication Research (3)
Prerequisite: Com 508 or 509 and classified status. Problems in theoretical, applied and evaluative research in communication.

512 Graduate Seminar in Journalism Education (3)
Study of selected problems in journalism education with emphasis on individual research.

597 Project (3 or 6)
Completion of a creative project in an emphasis beyond regularly offered coursework.

598 Thesis (3 or 6)
Completion of a thesis in an emphasis beyond regularly offered coursework.

599 Independent Graduate Research (1-3)
Prerequisite: consent of department chair. Individually supervised mass media projects or research for graduate students. May be repeated.

JOURNALISM EDUCATION COURSES

422 Teaching Journalism in the Secondary School (3)
Prerequisite: admission to teacher education. Theory and technique of advising school newspaper and yearbook staffs and teaching journalism. Relation of classroom instruction to staff assignments.

449A,B Journalism Education (12)
Prerequisite: admission to student teaching. Full-time student teaching. **A**—Student teaching in the secondary school. **B**—Seminar.

749 Student Teaching in Journalism in the Secondary School and Seminar (6)
See description and prerequisite under Division of Teacher Education.

COMPARATIVE LITERATURE PROGRAM

The program in comparative literature is an interdisciplinary program directed by the Committee on the Program in Comparative Literature. The committee is responsible for formulating curricular policies, approving courses and advising studies.The chair of the English Department administers the program, and the courses are taught by faculty from the English Department and other departments whose courses are approved by the committee.

BACHELOR OF ARTS IN COMPARATIVE LITERATURE

The major in comparative literature provides professional competence and personal enrichment for students with an exceptional concern and appreciation for the study of the interrelationships between the languages and literatures of various civilizations. The program offers courses in literary form and content, theory and philosophy, genres and movements, providing insight into the backgrounds of mankind's worldwide culture and literature. The comparative literature courses are conducted in English and required reading is available in English.

Upper Division Requirements (42 units)

1. Eighteen units selected from courses listed under comparative literature.

2. Reading competence in a foreign language, demonstrated by successfully completing an adviser-approved 400-level course offered by the Department of Foreign Languages and Literatures, provided it is not taught in translation. This requirement can be met through examination. Information on the examination is available in the Department of English office.

3. Six units selected from literature courses listed under English and numbered 300 or above.

4. Six units of anthropology, history, art history, music history or philosophy approved by the adviser and aimed at enlarging total perspective.

5. The remainder of the required 42 units selected from any 300- or 400-level literature course in comparative literature, English, French, German, Italian, Russian or Spanish.

Distribution

1. Of these 42 units, 15 must span the chronological range of the literary continuum, one in each of the following literary periods: Classical or Medieval; Renaissance; Neoclassical or Baroque; Romantic; Contemporary (1850-).

2. One course in a literary genre.

3. One course in a major figure.

   It should be noted that (2.) and (3.) can perform the dual function of also satisfying (1.) e.g., a senior seminar in Hugo would satisfy both the major figure *and* the Romantic Period requirements).

More detailed information on the comparative literature major can be obtained from the brochure available in the Department of English office. The importance of close consultation with an adviser cannot be stressed enough for comparative literature, since the diversity of language specialties and other factors may necessitate individual tailoring in any given case.

MASTER OF ARTS IN COMPARATIVE LITERATURE

The objectives of the master's degree program in comparative literature are to promote the understanding of other literatures, peoples, and cultures in various historical periods, including the present, and to prepare the student for more advanced work in comparative literature, leading to the Ph.D. degree. The program also prepares teachers of world literature in the high schools and community colleges and provides a liberal arts background preparation for library studies.

Students must meet the university and school requirements (a bachelor's degree from an accredited institution and a minimum GPA of 2.5 in the last 60 semester units attempted) for admission to conditionally classified standing with the declared objective of this degree. Admission to classified standing requires:

1. An undergraduate major in comparative literature, English or foreign language with a GPA of 3.0 or better in the major courses and a GPA of 2.5 in all other college and/or university work. If the student's degree is in another field, he must have completed a total of 24 units of upper division work in comparative literature, English or foreign language, with a GPA of 3.0.

   If the student lacks the prerequisite number of courses, he must make them up before he can begin work in the master's degree program, and he must earn at least a 3.0 in such makeup coursework. In the event that the student's GPA in these probationary courses is 3.0 or better, he may be admitted (classified). Courses taken to remove qualitative and quantitative deficiencies may not be applied to the M.A. program.

2. Satisfactory completion of a written examination in an approved foreign language, or satisfactory completion of an upper division course taught in an approved foreign language.

3. Development of an approved study plan.

Study Plan

Required are 30 units of coursework completed with a minimum GPA of 3.0 to be distributed as follows:

1. A minimum of 18 units in 500-series courses:	*Units*
Courses at the 500-level in comparative literature (one adviser-approved 500-level course in English may help satisfy this requirement	15
A course at the 500 level in a related area	3
Total	18
2. Upper division courses:	
Comparative Literature 410	3
Adviser-approved course in comparative literature	3
Adviser-approved courses in a related area	6
(At least 3 units of related coursework must be in foreign literature, read in the original language.)	
Total	12

At the conclusion of his coursework, the student will take a comprehensive examination for the master's degree.

For further information, consult the Department of English.

See also "The Program of Master's Degrees" and the *Graduate Bulletin*.

COMPARATIVE LITERATURE COURSES

(Offered by the Department of English)

202 Short Story (3)

(Same as English 202)

305 The Hebrew Prophets (3)

(Same as Religious Studies 333)

311 Myths of Creation and Fall (1)

Five weeks intensive study from ethnic groupings round the world, ancient to contemporary. Readings are selected from primary texts in translation, with emphasis on archetypal patterns and themes.

312 The Bible as Literature (3)

A comprehensive survey of Biblical literature emphasizing intrinsic literary qualities as well as the influence of major themes of both Old and New Testament writings upon Western literary traditions.

314 The Oral Tradition in Literature (3)

A study of storytelling as an art, particularly as developed through the media of the folktale.

315 Classical Mythology in World Literature (3)
A basic study of those Greek and Roman myths which have been of continuing significance in Western world literature.

316 Celtic Mythology and Early Irish Literature (3)
A survey of early Irish literature and of Irish and Welsh mythological literature, with discussion of comparative and archeological relationships.

317 Indic Mythology (3)
A study of the mythologies embodied in the *Mahabharate*, the *Ramayana*, the *Vedas* and the *Sathapartha Brahamana* of India, and in the *Abast, Avesta*, and *Sha Namah* of Persia, and their relation to the principal mythologies of Europe.

318 Baltic and Slavic Mythology (3)
A study of the principal myths of the Balts and Slavs and their relationship to the Indo-European inheritance.

319 African Mythology (3)
A study of the principal myths of sub-Saharan Africa, together with their reflections in African art and custom.

320 Greek and Roman Literature (3)
Readings in English translation from the literature of classical Greece and Rome.

321 Germanic Mythology and Saga Literature (3)
A study of Germanic mythology, including comparative myth and archeological relationships, and an introduction to Icelandic saga.

324 World Literature to 1650 (3)
Selected readings in Oriental and western literature from the beginning to 1650.

325 World Literature 1650 to Present (3)
Selected readings in Oriental and western literature from 1650 to the present.

332 Medieval Literature of Western Europe (3)
Selected readings in modern English translation from the medieval literature of England and the continent from St. Augustine to Sir Thomas Malory.

333 Literature of the Renaissance (3)
Major phases of the Renaissance as a literary movement, from Erasmus to Montaigne and Cervantes.

343 The Literature of the Romantic Period (3)
Backgrounds in romanticism and study of major figures of European and American romanticism, such as Pushkin, Rousseau, Leopardi, Goethe, Thoreau, Schiller, Byron and Emily Bronte.

352 African Literature (3)
(Same as English 352)

360 Irish Literature (3)
Selected writings representative of Irish literature from the early Middle Ages to the present.

371 Masters of French Literature through Neoclassicism (3)
Survey of representative works of French literature in translation from the Middle Ages through the 18 century.

372 Masters of French Literature from the Romantics to the Present (3)
Survey of representative works of French literature in translation from the romantics to the present.

373 Masters of Russian Literature (3)
Reading, discussion and interpretation of selected works by Pushkin, Dostoyevsky, Tolstoy, Chekhov, Pasternak and others, and their relationship to western literature.

374 Modern Russian Literature (3)
A study of literary trends and representative works of Russian writers from Maxim Gorky to the present. Special consideration of the Soviet literary theory and its impact upon their literature. Lectures and readings in English.

375 Hispanic Literature (3)
A study of selected translations from Hispanic literature and their relations to world literature. Readings in the picaresque novel, Cervantes, Golden Age drama, Galdos, Unamuno, Lorca.

376 Main Trends in Spanish-American Literature (3)
An introduction to the main currents of Spanish-American literature, emphasizing contemporary writers, such as Alegria, Asturias, Borges, Fuentes, Neruda. Close attention will be given to the relation between the artistic expression and the ideological values of the same period.

402 Art, Literature, and the Development of Consciousness (3)
(Same as Interdisciplinary Center 402)
403 The Quest for Self: East and West (3)
(Same as Interdisciplinary Center 403)
404 The Nature of Love: Plato to Joyce (3)
(Same as Interdisciplinary Center 404)
410 Theory and Method of Comparative Literature (3)
Introduction to the theories and methods of comparative literature and the problems of translation.
424 Chinese Literature (3)
A study of selected translations of Chinese literature.
425 Indian Literature (3)
A study of selected works of Indian literature.
426 Japanese Literature (3)
A study of selected translations of Japanese literature.
427 Modern Japanese Fiction (3)
A study of major writers and literary movements in 20th-century Japanese fiction.
430 Persian and Arabian Literature (3)
A survey course on the nature and distribution of the classics of western Asia in English translation, with lectures, readings and discussion.
445 Literature of the Americas: Contemporary Novelists (3)
A study of the interdependency of the contemporary fiction of North and South America. Focuses on direct influences, such as Hemingway's and Faulkner's on Latin American writers, and Borges' influence on North American writers. Examines several parallels in techniques and themes as they reflect relationships in and between the Northern and Southern cultures.
450 The Naturalists (3)
A study of naturalism in the works of Turgenev, Balzac, the brothers Goncourt, Maupassant, Zola, Huysmans, Ibsen, Verga; and also the works of Gissing, Moore, Hardy, Garland, Crane, Norris, Dreiser, London and O'Neill.
453 The Novel in France and Germany (3)
Reading, discussion, and interpretation of outstanding novels in translation with a view toward determining some principles of the narrative arts. Emphasis on Goethe, Stendhal, Flaubert, Mann, Kafka, Proust and others.
454 Contemporary Movements in European Literature (3)
A study of modern literary movements, including naturalism, realism, symbolism, expressionism and surrealism, with reading and discussion of selected examples.
457 The Experimental Novel (3)
A study of contemporary novels, including examples of surrealism and the *nouveau roman*, as well as other novels not readily classified.
458 The Spanish Novel (3)
A study of major Spanish novels in translation.
473A,B World Drama (3,3)
Reading, discussion and interpretation of great plays of the world in translation, emphasizing them as literature for performance. **A**—From ancient Greece through the mid-19th century. **B**—From Ibsen to the present.
482 Senior Seminar: Major Writers (3)
Directed research and writing, group discussion, and lectures involving intensive study of major writers. The student should consult his adviser and the schedule of classes for the sections available. This course number may be repeated with different content for additional credit.
483 Senior Seminar: Greek Tragedy (3)
Fifth century Greek tragedy through the extant works of Aeschylus and Sophocles, and 10 plays of Euripides. (Same as Theatre 492)
491 Senior Seminar: Special Studies in Comparative Literature (3)
Directed research and writing, group discussion, and lectures devoted to significant periods, movements and themes in world literature. May be repeated with different content for additional credit.
492 Literature of Action in 20th-Century France (3)
(Same as French 492)

492 German Literature in Translation (3)
(Same as German 492)
499 Independent Study (1-3)
550 Graduate Seminar: Medieval Literature (3)
Directed research and writing, group discussion and lectures, concerning special problems such as the development of medieval narrative, the growth and development of the Arthurian legend, lyric poetry, allegory and devotional literature.
551 Graduate Seminar: The Renaissance and Baroque (3)
Comparative investigation of a theme, genre, or major figures in western literature for the Renaissance and Baroque Period. Directed research and writing, group discussions, independent study. Since the topic each year will vary, depending upon the specialized interests and publications of the instructor, this course may be repeated with different content for additional credit.
552 Graduate Seminar: The Enlightenment (3)
553 Graduate Seminar: Romanticism (3)
554 Graduate Seminar: Studies in the Modern Period (3)
571 Graduate Seminar: The Novel (3)
Offers directed research and writing, group discussion, and lectures concerning the genre of the novel. An ability to read the novels in the original language will be helpful. May be repeated with different content for additional credit.
572 Graduate Seminar: Poetry (3)
573 Graduate Seminar: Drama (3)
580 Graduate Seminar: Major Figures in World Literature (3)
Directed study and research on a major figure in world literature. Students will write reports and a long paper on approved topics.
582 Graduate Seminar: Dante (3)
591 Seminar in Comparative Literary Criticism (3)
598 Thesis (3)
599 Independent Study (1-3)

CRIMINAL JUSTICE PROGRAM

FACULTY
W. Garrett Capune
Program Coordinator
William Hobbs

The program leading to the Bachelor of Arts in Criminal Justice is designed to acquaint preservice and inservice students with the principles and practices of criminal justice in America. Although the program's curriculum allows for the development of depth in one of the subject's substantive subsystems (i.e., law enforcement, courts or corrections), the overriding objective is to familiarize students with activities in the above areas.

The program is both academic and professional in that it is an interdisciplinary attempt to relate professional and practitioner perspectives to the challenge of crime in a free society. In this regard, the program provides the student with preparation for employment with a related agency and/or further study.

ADVISEMENT

Students are urged to see a program adviser prior to their first semester at the university as a criminal justice major. This is particularly important for community college transfers. *Failure to do so may delay graduation.*

BACHELOR OF ARTS IN CRIMINAL JUSTICE

Every student must complete the core courses (15 units) and a minimum of 12 units in the concentration curriculum. In addition, each student is required to complete 12 units in a correlated curriculum.

For current information regarding the criminal justice program and its courses, students are advised to consult the program's bulletin board.

Core Curriculum (15 units)

Criminal Justice 300	Criminal Justice in America: An Analysis
Criminal Justice 310	Criminal Law (Substantive and Procedural)
Criminal Justice 320	Criminal Justice Administration: A Survey
Criminal Justice 330	Crime and Delinquency
Criminal Justice 340	Criminal Justice Research Methodology

Concentration Curriculum (12 units)

Criminal Justice 415	The Enforcement Function
Criminal Justice 425	Juvenile Justice Administration
Criminal Justice 435	Adjudication and the Judiciary
Criminal Justice 445	Corrections: Institutional and Community Programs
Criminal Justice 455	Comparative Criminal Justice Systems
Criminal Justice 465	Criminal Justice Planning
Criminal Justice 475	The Administration of Justice: A Seminar.

Corelated Curriculum (12 units)

Courses for the related fields shall be selected in consultation with the student's adviser. The purpose of this requirement is to allow for the establishment of an emphasis, such as public administration or counseling. Upper-division courses in the following fields can be considered in this regard: accounting, business administration, communications, computer studies, finance, human services, law, management, philosophy, political science, psychology, public administration, quantitative methods, social welfare, sociology, technological studies.

CRIMINAL JUSTICE COURSES

300 Criminal Justice in America: An Analysis (3)

Analysis of the institutions involved in the administration of criminal justice (i.e., law enforcement, courts and corrections), examination of some specific agencies and a review of the system's problems, policies and purposes as they relate to the processes of arrest, adjudication, etttc.

310 Criminal Law (Substantive and Procedural) (3)

The nature of law, legal institutions and the legal process; a study of present Penal Code provisions both substantive and procedural, with special emphasis on current case considerations and their constitutional consequences vis-a-vis the right to counsel, the nature of due process.

320 Criminal Justice Administration: A Survey (3)

An analysis of justice administration as a "single system"; a review of modern management materials as applied to the involved institutions; a specific study of line, staff, and auxiliary activities both in principle and practice, and an examination of the associated administrative theories.

330 Crime and Delinquency (3)

The nature and extent of criminality; a review of traditional and topical theories regarding etiology, with a concern for research methods as well as the contribution's content (although physiological causes will be considered, the emphasis will be on the sociological and psychological theories).

340 Criminal Justice Research Methodology (3)

An introduction to elementary statistics including descriptives, measurements and tests; a review of data collection methods for effort evaluation and program prediction; and a survey of systems analysis techniques.

415 The Enforcement Function (3)

Prerequisite: Criminal Justice 300 or comparable coursework. The historical and philosophical development of the enforcement function as it operates at federal, state and local levels; community controls, political pressures and legal limitations pertaining to law enforcement agencies at each level of government; examination of police policies and problems vis-a-vis the administration of justice as a system.

425 Juvenile Justice Administration (3)

Prerequisite: Criminal Justice 300 or comparable coursework. Development of our definitions of "delinquency" and the related responses of the interested institutions

(police, courts and correction), with special reference to the juvenile court (past and present), and prevention and correction programs (practicing and proposed).

435 Adjudication and the Judiciary (3)

Prerequisite: Criminal Justice 300 or comparable coursework. Development of the associated sociolegal doctrine and institutions at the federal, state and local levels; political controls and legal limitations pertaining to each; a study of the nature of the judicial process and an examination of the participants' roles and their relationship to the administration of justice as a system.

445 Corrections: Institutional and Community Programs (3)

Prerequisite: Criminal Justice 300 or comparable coursework. The historical and philosophical development of our corrections concern; analysis of correctional institutions as total institutions for prisoners and personnel; the theory and practice of probation and parole, with a consideration of rehabilitation and the alternative attitudes; a review of current research and experimental programs.

455 Comparative Criminal Justice Systems (3)

Prerequisite: Criminal Justice 300 or comparable coursework. Comparative analysis of criminal justice systems of other states and of selected other countries throughout the world. The systems, their theories and associated problems will be examined.

465 Criminal Justice Planning (3)

Prerequisite: Criminal Justice 300 or comparable coursework. Principles of social planning; sources and uses of criminal, demographic and economic data; examination of existing planning-coordinating agencies, basic research and evaluation techniques including mathematical analysis and model building.

470 Sex and the Criminal Justice System (3)

Prerequisite: Criminal Justice 300 or comparable coursework. Analysis of rationale for law's concern with sexual conduct, developed via discussion of selected offenses and offenders. Lectures and guest speakers will also present opposing perspectives regarding the role of law enforcement, courts and corrections. Research and reform will be reviewed.

475 The Administration of Justice: A Seminar (3)

Prerequisite: Criminal Justice 300 or comparable coursework. An examination of current social, legal and practical problems confronting the police, the courts and corrections as segments within a system concerned with such matters as riots, organized crime, recidivism. An analysis of the associated career groups as professions with problems and prospects.

495 Internships (3)

Prerequisite: Criminal Justice 300 or comparable coursework. Designed to acquaint student with criminal justice professions. Each individual works 8-20 hours per week as a supervised intern in a public agency or related organization. In addition to the job experience, interns meet in a weekly three-hour seminar.

DEPARTMENT OF ENGLISH

FACULTY
Howard Seller
Department Chair

Don Austin, Arthur Bell, Rosemary Boston, John Brugaletta, Miriam Cox, Sherwood Cummings, Dorothea de France, George Friend, Cynthia Fuller, Stephen Garber, Joseph Gilde, Joan Greenwood, Annabelle Haaker, Jean Hall, Mary Hayden, Joseph Hayes, Dennis Hengeveld, Jane Hipolito, Robert Hodges, Michael Holland, Wayne Huebner, Charlotte Hughes, Helen Jaskoski, Dorothy Kilker, Thomas Klammer, William Koon, Joanne Lynn, Willis McNelly, Russell Miller, Keith Neilson, Priscilla Oaks, Paul Obler, Rita Oleyar, Urania Petalas, June Salz Pollak, Orrington Ramsay, Sally Romotsky, William Rubinstein, Joseph Sawick Clarence Schneider, Muriel Schulz, John Schwarz, Sari Scott, Alice Scoufos, Donald Sears, Som Sharma, George Spangler, Alexander Stupple, Irene Thomas, Elena Tumas, Martha Vogeler, M. John Wagner, John White, Helen Yanko

The English Department offers courses designed to acquaint the student with the nature and development of our language, with the literatures of England and America, and with the disciplines involved in the various kinds of writing. Except for freshmen English offerings,

courses in world literature in English translation are listed separately, under Comparative Literature. In addition the Department of English offers some specialized professional courses for the preparation of teachers. On the senior and graduate levels, various opportunities are provided for seminar work and independent study.

The English Department offers a flexible program, designed to reflect various approaches to the study of language and literature. In planning a program to fit their particular interests, *all students should consult an English Department undergraduate adviser or a faculty member.* A pamphlet, "The Bachelor of Arts in English: Information for Students," is available in the department office.

BACHELOR OF ARTS IN ENGLISH

Requirements: 42 units in addition to English 100 or 103 or 105, or their equivalents.

Lower Division (maximum of 12 units)

Any 200 level course.

Upper Division (minimum of 30 units)

All students must complete 12 units of basic requirements. They may choose Core I or Core II.

Core I	*Units*
English 334 Shakespeare, *or*	
English 435, Studies in Shakespeare	3
Survey of literature, selected from among the following, and including at least one course in an earlier period and at least one course in a later period	9
English 311 Masters of British Literature to 1760	
English 312 Masters of British Literature from 1760	
English 321 American Literature to Whitman	
English 322 American Literature from Twain to the Moderns	
Comp Lit 324 World Literature to 1650	
Comp Lit 325 World Literature from 1650	
Total	12

Core II	*Units*
English 334 Shakespeare, *or*	
English 435 Studies in Shakespeare	3
English 300 Analysis of Literary Forms	3
English 301 Advanced Composition, *or*	
English 364 Seminar in Writing	3
English 302 Introduction to the English Language *or*	
English 303 Structure of Modern English *or*	
English 305 American Dialects *or*	
English 490 History of the English Language	3
Total	12

Electives to complete a minimum of 42 units shall be selected from additional courses in language and composition, period courses, literary criticism, senior seminars and comparative literature. Comparative literature offerings are listed separately but count toward an English major.

Students are urged to consult an English Department undergraduate adviser or a faculty member when selecting a core of basic requirements, when choosing electives or when seeking evaluation of work completed at other institutions.

English majors who intend to pursue graduate study are urged to acquire proficiency in at least one foreign language, and most graduate programs in English assume that the student has had a broad background in the study of major literary figures, periods and critical approaches, as well as some training in English language and linguistics. Such students are advised therefore to take the following:

English 333 Chaucer
English 341 Milton

At least one course in language and linguistics, to be selected from:

English 302 Introduction to the English Language;
English 303 Structure of Modern English
English 490 History of the English Language
and courses in a wide range of periods and genres. Both breadth and depth of preparation are important.

Students seeking a secondary teaching credential must complete the following:
English 301 Advanced Composition; *and*
English 302 Introduction to the English Language *or*
English 303 Structure of Modern English

The following courses are required for the credential, but do not count toward the 42 units of major:
English Education 442 Teaching English in the Secondary School
English Education 449 Student Teaching in English in the Secondary School and Seminar (Ryan Credential) *or*
English Education 749 Student Teaching in English in the Secondary School and Seminar (Fisher Credential)

MINOR IN ENGLISH
Requirements: a total of 21 units

A minimum of 12 units in Core I or Core II, described above in basic requirements, and nine units of electives. In choosing their core of basic requirements as well as their electives, students seeking a minor in English should consult an English Department undergraduate adviser or a faculty member.

MASTER OF ARTS IN ENGLISH
The Master of Arts in English is designed to give the student a fuller understanding of English and American literature and language. The degree is useful to those teaching in high schools or community colleges, to those seeking careers in writing and publishing, and to those intending to take further graduate work.

Students must meet the university and school requirements (a bachelor's degree from an accredited institution and a minimum GPA of 2.5 in the last 60 semester units attempted) for admission to conditionally classified standing with the declared objective of this degree.

To qualify for classified graduate standing in the program for the Master of Arts in English, a student must hold a bachelor's degree in English from an accredited institution at which he has maintained at least a 3.0 grade-point average in the major courses *provided that he has a minimum of 24 units of upper-division coursework;* or if he holds a bachelor's degree in another major, he must have completed 24 units of upper-division coursework in English with at least a 3.0 grade-point average. If the student lacks the prerequisite number of English courses, he must make them up before he may begin work in the master's degree program, earning at least a 3.0 in such makeup coursework. In the event that the student's GPA in prerequisite English courses is less than 3.0, he may be allowed to take from six to nine units of probationary, adviser-approved coursework. If his GPA in these probationary courses is 3.0 or better, he may be admitted (classified). Courses taken to remove qualitative and quantitative deficiencies may not be applied to the M.A. program.

A student is required to have two years of one foreign language at the college or university level or six units of study in comparative literature. If taken as graduate work, these six units may be applied to the master's degree under "units in subjects related to English."

A study plan must be developed and approved for admission to classified graduate standing.

Study Plan:	*Units*
Minimum units in English courses restricted to graduate students (500 series) .. (with the permission of the graduate adviser, 3 of these 18 units may be taken in a comparative literature graduate seminar)	18
Maximum units in specified upper-division courses in English	6
Units in subjects related to English	6
Total	30

At the conclusion of his program he will take the written comprehensive examination for the master's degree. A student who fails the examination may retake the failed part only once.

Note: The student is strongly advised to take the steps necessary for admission to the program before registering for his first graduate courses. Part of the admission process is to confer with the graduate adviser, who will analyze prerequisites and designate those courses which will apply to the degree program. Courses taken by a conditionally classified student do not necessarily apply toward a degree. At the time the student achieves classified standing, no more than nine units of postgraduate coursework may be applied to the master's degree program.

For further information, consult the Department of English.

See also "The Program of Master's Degrees" and the *Graduate Bulletin.*

ENGLISH COURSES

For world literature in English translation see courses under comparative literature.

100 Composition (3)
A basic course in composition. The course carries no credit toward the major.

103 Seminars in Writing (3)
A course for the student with some proficiency in composition. Readings on a relevant topic are meant to motivate the student to express his thoughts in a meaningful, disciplined manner.

105 Introduction to Creative Writing (3)
An exploratory creative writing course in which the student is given the opportunity to write in various genres. The course carries no credit toward the major.

110 Literature of the Western World from Ancient through Medieval Times (3)
The study of representative writers and works from the ancient through the medieval world.

111 Literature of the Western World from the Renaissance through the 19th Century (3)
The study of representative writers and works from the Renaissance through the 19th century.

112 Modern Literature of the Western World (3)
The study of representative writers and works of modern literature.

202 The Short Story (3)
A course designed to introduce the student to the study of the structure and technique of the short story. Emphasis on critical analysis of selected American and European short stories. (Same as Comparative Literature 202)

205 Introduction to Drama (3)
A course designed to introduce the students to the study of dramatic literature. Emphasis on close analysis of individual plays.

206 Introduction to Poetry (3)
A course designed to increase students' understanding and appreciation of the art of poetry. The primary activity will be close reading of poems written in English.

210 Studies in Literature (3)
Selected readings and discussion of English and American writers, emphasizing a particular theme, genre, trend or the works of individual writers. Section topics will vary according to special interests of instructor.

300 Analysis of Literary Forms (3)
The main literary forms—prose fiction, poetry and drama—are studied and analyzed. Various critical methods are applied to representative works mainly from English and American literature. English majors should schedule this basic course as early in their programs as possible.

301 Advanced Composition (3)
Prerequisites: English 100, 103, or their equivalents. Exercises in creativity, analysis, and rhetoric as applied in expository writing. Required of English majors seeking the secondary credential.

302 Introduction to the English Language (3)
A basic course in language emphasizing the history, structure and dialects of American English in its social, cultural and educational contexts. This course or English 303 required of English majors seeking a secondary credential and must be taken before student teaching.

303 The Structure of Modern English (3)
Prerequisite: junior standing. The grammar of contemporary English. Modern English usage. This course or English 302 required of English majors seeking a secondary credential and must be taken before student teaching.

305 American Dialects (3)
An examination of the principles of dialectology. Emphasis on the description of modern American dialects and their role in social, cultural and educational issues of today. (Same as Linguistics 305)

311 Masters of British Literature (3)
Prerequisite: sophomore standing or consent of instructor. An introduction to major periods and movements, major authors and major forms through 1760.

312 Masters of British Literature (3)
Prerequisite: sophomore standing or consent of instructor. An introduction to major periods and movements, major authors and major forms from 1760 through modern times.

320 Literature of the American Indian (3)
A study of the prose and poetry of the American Indian, focusing on the literatures of the North American tribes.

321 American Literature to Whitman (3)
Emphasis on major writers: Hawthorne, Poe, Melville, Emerson, Thoreau, Whitman and others.

322 American Literature from Twain to the Moderns (3)
Emphasis on Twain, James, Crane, Hemingway, Faulkner, O'Neill, Frost, Eliot.

325 American Ballad and Folksong (3)
A survey of Anglo-American balladry and folksong, with attention to historical development, ethnic background and poetical values.

326 The American Frontier in Literature (3)
Prerequisite: any courses in American literature, American studies or American history. The moving American frontier from the beginnings to the close of the 19th century. Accounts of explorers and naturalists will be examined beside artistic, literary and popular treatments to identify the myths and symbols created by the fact of a frontier in American life.

332 Medieval English Literature (3)
An introduction to the literature of medieval England exclusive of Chaucer. Readings in modern English versions of representative major works and genres from *Beowulf* to Malory.

333 Chaucer (3)
A study of *The Canterbury Tales* and of Chaucer's language, with particular emphasis upon the understanding of the vocabulary, pronunciation, grammar, and syntax of the East Midland dialect of Middle English, as indispensable to literary appreciation.

334 Shakespeare (3)
An introduction to Shakespeare's art through a detailed study of the more famous plays.

335 Elizabethan and Jacobean Drama (3)
Studies of representative English dramatists of the late 16th and early 17th centuries. Emphasis on the development of the dramatic tradition in the plays of Marlowe, Jonson, Webster, Beaumont and Fletcher, and others.

336 Elizabethan Poetry and Prose (3)
A study of the nondramatic literature of the English Renaissance from More to Campion. Emphasis on Renaissance thought and the works of Spenser.

337 17th-Century Poetry and Prose (3)
A survey of the major writers of the period from 1603 to 1660 exclusive of Milton.

338 The Drama of the Restoration and the 18th Century (3)
A study of representative plays of the Restoration and the 18th century. Emphasis will be placed on the development of such dramatic movements as the heroic play, Restoration comedy and sentimental drama.

339 Restoration Literature (1660-1700) (3)
Butler, Rochester, Dryden, Pepys, and selected minor writers.

340 18th-Century Poetry and Prose (3)
Swift, Addison and Steele, Pope, Boswell, Johnson, and selected minor writers.

341 Milton (3)
An intensive study of the poetry and prose in the light of Milton's intellectual development.

343 The Romantic Movement in English Literature (3)
Burns, Blake; Wordsworth, Coleridge; Byron, Shelley, and Keats. The reaction against rationalism, the rise of revolutionary and liberal thought, humanitarianism, and emphasis on individual creativity.

344 Victorian Literature (3)
A study of literature in its relationship to the problems which emerge from the social, cultural, scientific and industrial revolutions of the Victorian period.

345 The Development of the English Novel through Jane Austen (3)
A study of the English novel from its beginnings to the 19th century considering such novelists as Defoe, Richardson, Fielding, Sterne and Austen.

346 The Development of the 19th-Century English Novel (3)
A study of such novelists as the Brontës, Thackeray, Dickens, Eliot and Hardy.

350 Detective Fiction (3)
A study of detective fiction from Edgar Allan Poe to the present, including writers such as Sayers, Christie, Chandler, Hammet and Ross Macdonald.

351 Science Fiction (3)
The study of science fiction as a genre, including future-scene fiction, the utopian novel, the superman novel and short fantasy stories.

352 African Literature (3)
African literature written in the English language, with special emphasis on the fiction, poetry and drama of the new nations. (Same as Comparative Literature 352)

353 Black Writers in America (3)
A study of black American writers from Frederick Douglass to the present. Concentration on important figures such as Wright, Ellison and Baldwin.

355 Images of Women in Literature (3)
Images of women in various genres, such as autobiography, poetry, drama and the novel. A conventional literary period (Victorian, Modern, etc.) and specific cultures (Great Britain or the United States, etc.) at the discretion of instructor.

364 Seminar in Writing (3)
Prerequisites: evidence of student's previous interest in creative writing and consent of instructor. Study of superior models, development of style, and group criticism and evaluation of each student's independent work. May be repeated for credit. (Same as Theatre 364)

391 Traditions of English Literary Criticism (3)
The principal statements of the major English critics, from the Renaissance to the beginning of the 20th century, studied in their relationship to the classical theories of criticism.

392 Modern Literary Criticism (3)
A study of the major movements in 20th-century British and American criticism.

421 Minority Images in American Literature (3)
An examination of 19th- and 20th-century literature written by and about racial groups in America. Includes *Uncle Tom's Cabin, Soul on Ice* and *Laughing Boy.*

423 Early American Literature (3)
Prerequisite: English 321 or consent of instructor. The literature of colonial and revolutionary America, including the Puritans, 18th-century deism and rationalism, and the literary antecedents of American democratic thought.

425 Darwinism in American Literature (3)
Prerequisites: junior standing and consent of instructor. An examination of selected writings of Darwin and of such Darwinians as Spencer and Huxley; then a study of the literary adaptations and assimilations of Darwinism. (Same as American Studies 425)

433 Children's Literature (3)
Reading and discussion of works from world literature designed primarily for children, including material from the oral tradition, realistic fiction, fantasy and poetry. Designed for the general student as well as for elementary credential candidates.

435 Studies in Shakespeare (3)
Prerequisite: English 334 or consent of instructor. An intensive study of selected plays with primary emphasis upon problems of dramatic structure and artistic meanings.

445 The American Tradition in Poetry (3)
A study of selected American poems from the 17th century to 1914. Emphasis on the close reading of individual poems.

446 The American Novel to 1914 (3)
A study of selected novelists from C. B. Brown, through Melville and Twain, to Dreiser.

451 Philosophical Backgrounds of Modern Literature (3)
(Same as Interdisciplinary Center 451)

462 Modern British and American Novels (3)
Prerequisite: survey of English, American or world literature; an upper division literature course; or consent of instructor. Development of modern British and American novels from 1900 to 1950.

463 Contemporary British and American Novels (3)
The novel in English since World War II.

464 Modern British and American Drama (3)
Prerequisite: survey of English, American or world literature; an upper division literature course; or consent of instructor. The development of British and American drama from 1900 to 1950.

465 Contemporary British and American Drama (3)
British and American drama from 1950 to the present.

466 Modern British and American Poetry (3)
Prerequisite: survey of English, American or world literature; an upper division literature course; or consent of instructor. The development of British and American poetry from 1900 to 1950.

467 Contemporary British and American Poetry (3)
British and American poetry from 1950 to the present.

480 Seminar in Old English (3)
Study of the elements of Old English language, with cultural backgrounds and critical reading of lyrics and short prose pieces.

490 History of the English Language (3)
Prerequisite: senior or graduate standing. The historical development of English vocabulary, phonology, morphology and syntax from Indo-European to modern American English.

491 Senior Seminar (3)
Prerequisite: an undergraduate course in the area to be studied, a B average or better in English courses, or consent of instructor. Directed research and writing, group discussion, and lectures covering selected topics from language studies, intensive studies of major writers, criticism, and literary types, periods, and ideological trends.

499 Independent Study (3)
Open to advanced students in English with consent of department chair. May be repeated for credit.

570 Graduate Seminar: Language Studies (3)
Directed research and writing, group discussion, and lectures covering philology, historical development, and structure of English. Individual offerings under this course number may deal with only one aspect of language studies. May be repeated with different content for additional credit.

571 Graduate Seminar: Major Writers (3)
As appropriate to the specialized research and publication of instructor, this course will offer directed research and writing, group discussion, and lectures covering major figures such as: Shakespeare, Milton, Chaucer, Melville, Twain, Hawthorne, Joyce and Coleridge. May be repeated with different content for additional credit. (Same as Theatre 571)

572 Graduate Seminar: Literary Genres (3)
As appropriate to the specialized research and publication of instructor, this course will offer directed research and writing, group discussion and lectures, covering such major literary types as: the epic, the novel, the short story, lyric poetry, tragedy, comedy and historical drama. May be repeated with different content for additional credit. (Same as Theatre 572)

573 Graduate Seminar: Cultural Periods (3)
As appropriate to the specialized research and publication of instructor, this course will offer directed research and writing, group discussion, and lectures covering the literature of a particular cultural period from the Anglo-Saxon to modern times. May be repeated with different content for additional credit.

574 Graduate Seminar: Special Problems in Literature (3)
As appropriate to the specialized research and publication of the instructor, this course will

offer directed research and writing, group discussion and lectures covering special problems such as: the detailed critical study of varying influences on literature, including philosophical, religious, scientific, geographic and other ecological viewpoints. May be repeated with different content for additional credit.

579 Graduate Seminar: Problems in Criticism (3)

Directed research and writing, group discussion, and lectures covering historical development and schools of criticism. Individual offerings within this course number may deal with only one aspect of critical problems. May be repeated with different content for additional credit.

599 Independent Graduate Research (3)

Research projects in areas of specialization beyond regularly offered coursework. Oral and written reports. May be repeated with different content for additional credit

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ENGLISH EDUCATION COURSES

442 Teaching English in the Secondary School (3)

Prerequisite: admission to teacher education. Principles, methods and materials of teaching English in the secondary school.

449A English Education (10)

Student Teaching in the Secondary School. The candidate, in the field for four and one-half days each week, has the same instructional hours of responsibility as the master teacher.

449B English Education (2)

One afternoon a week the candidate participates in a seminar with the university supervisor.

749 Student Teaching in English in the Secondary School and Seminar (6)

See description and prerequisite under Division of Teacher Education.

DEPARTMENT OF FOREIGN LANGUAGES AND LITERATURES

FACULTY

Nancy Baden
Department Chair

Linda Andersen-Bensimon, Oswaldo Arana, Gerald Boarino, Daniel Brondi, Samuel Cartledge, Marina Degtjarewsky, Gail de Mallac, Modesto Díaz, Leon Gilbert, Arturo Jasso, Jacqueline Kiraithe, Walter Kline, G. Bording Mathieu, Harvey Mayer, Doris Merrifield, Ervie Peña, Marcial Prado, Charles Shapley, Curtis Swanson, Marjorie Tussing, Eva Van Ginneken, Stephen Vasari, Jon Zimmermann

BACHELOR OF ARTS IN FRENCH, GERMAN OR SPANISH

Several options are offered:

1. *French major.* Requirements: French 101, 102, 203, 204, 230, 240, or their equivalents; plus a minimum of 27 units of upper division courses including 305, 315, 317, 325, 415, 425 and six units of 475A,B,C,D.

2. *German major.* Requirements: German 101, 102, 203, 204, 213, 214, or their equivalents; plus 24 units of upper division coursework, which must include 315, 317, 375 and three of the following literature courses: 430, 440, 450, 460.

3. *Spanish major:* Lower division requirements: Spanish 101, 102, 203, 204, 213, 214, or their equivalents. Upper division requirements for:
   A. Standard major: Spanish 315, 316, 317 or 318, 375; plus 15 units of upper division Spanish which must include 430, 441 and 461.
   B. Bilingual emphasis major: Spanish 315 or 316, 317 or 318, 375, 400 (or its equivalent), 466, 467, 468, plus two additional courses in Spanish at the 400 level, to be taken in consultation with the adviser.

TRANSFER STUDENTS

In accordance with university rules, all transfer students must complete 24 units in residence at Cal State Fullerton. Of these 24 units, the transfer student majoring in French, German or

Spanish is required to complete 12 upper division units, i.e., 300, 400 or 500 level courses, in the major on the Cal State Fullerton campus. The specific courses will be determined in consultation with the student's adviser and approved by the chair.

MINOR IN A FOREIGN LANGUAGE

Requirements: Courses 101, 102, 203, 204, 213, 214 or their equivalents, completed satisfactorily; plus nine units in upper division courses selected in consultation with the adviser. Minor concentrations are offered in French, German, Portuguese, Russian and Spanish.

PROGRAMMED COURSES IN UNCOMMONLY TAUGHT LANGUAGES

The department has available a number of programmed courses in languages which cannot be regularly taught, such as Arabic. For details see Foreign Languages 198.

STANDARD TEACHING CREDENTIAL, SPECIALIZATION IN SECONDARY EDUCION

All prospective teachers, before being admitted to a credential program, must pass a proficiency examination in which their skills of listening, speaking, reading, writing and knowledge of linguistic principles will be tested. Students should make arrangements with the department to take the test during their junior year.

The credential program is the same as for the liberal arts major, with the following additional requirements: Foreign Languages Education 442; French or German or Spanish Applied Linguistics 466.

INTERNATIONAL PROGRAMS

In accordance with recommendations made by the Modern Language Association of America, the Department of Foreign Languages and Literatures encourages all majors interested in a teaching career to participate in a study-abroad program. This will enable a student to perfect his mastery of the language and afford him additional insights into the foreign culture. To this end The California State University and Colleges' International Programs offer a wide variety of study opportunities on the junior, senior and graduate level.

While the department encourages students to study overseas to provide an "externship" in language and culture, language majors are required to complete the following minimum of courses on campus before departure for, or upon return from, overseas:

A. for the B.A.: 12 units of upper division courses consisting of a minimum of nine units at the 400 level in the major
B. for the M.A.: 15 units consisting of a minimum of 12 units at the 500 level in the area of specialization.

THE LANGUAGE LABORATORY

Students enrolling in courses 101, 102, 203, 204 are required, in addition to the regular class periods, to practice for the minimum of prescribed time in the language laboratory. The 30-station laboratory operates like a library; students may use it at a time most convenient to them preferably every day in sessions of 15 to 30 minutes. Further details will be announced by each instructor and by the supervisor of the language laboratory.

Students are invited to make use of the collection of literary and cultural recordings in French, German, Portuguese, Russian and Spanish available in the language laboratory.

MASTER OF ARTS IN FRENCH, GERMAN OR SPANISH

An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures).

A student who meets the requirements for conditionally classified graduate standing, as well as the following requirements, may be admitted as a classified graduate upon the development of an approved study plan: a major in French, German or Spanish (as appropriate) consisting of 24 units (or equivalent) of upper-division studies with above-average scholarship. (A candidate presenting a B.A. which has fewer than 24 upper division units in the major language, or is otherwise inadequate, normally will be required to take additional courses to build a full undergraduate major before beginning the graduate program. The student must also demonstrate proficiency in English, either by examination or a three-unit upper division course in English grammar.

The degrees of Master of Arts in French, German and Spanish require a minimum of 30 semester units beyond the bachelor's degree including a minimum of 15 units in 500-level courses.

The basic study plans are as follows:

French

A. Core courses (6 units)
French 500 (Graduate Seminar: Advanced Structure and Style) or substitute
French 510 (Graduate Seminar: Phonology), 520 (Old French) or 530 (Graduate Seminar: Historical Linguistics)
B. Graduate seminars in literature (9 units)
C. Other electives (15 units)

May be chosen from either 400- or 500-level French courses. A maximum of six units may be taken, with approval of the adviser, in a related field.

With the approval of his graduate committee, a student may elect to substitute a thesis for a part of the units required in Section C.

A bibliographic project is to be completed prior to classification. A reading project is to be completed prior to advancement to candidacy. A reading list must be covered by all students. Final evaluation is by a comprehensive written and oral examination, including fluency in the French language.

German

A. Core courses (6 units)
German 466 (Introduction to German Linguistics) or 530 (Graduate Seminar: Historical Linguistics)
German 500 (Graduate Seminar: Advanced Structure and Style) or substitute
B. Graduate seminars in literautre (9-12 units)
C. Other electives (12-15 units)

May be chosen from either 400- or 500-level German courses. A maximum of six units may be taken, with approval of the student's graduate committee, in a related field.

With the approval of his graduate committee, a student may elect to substitute a thesis for a part of the units required in Section C. A reading list must be covered by all students. Final evaluation is by a comprehensive written and oral examination, including fluency in the German language.

Spanish

A. Core courses (6 units)
Spanish 500 (Graduate Seminar: Advanced Structure and Style) or substitute.
Spanish 530 (Graduate Seminar: Historical Linguistics)
B. Graduate seminars in literature (9 units)
C. Other electives (15 units)

May be chosen from either 400- or 500-level Spanish courses. Up to six units may be taken, with approval of the adviser, in a related field.

With the approval of his graduate committee, a student may elect to substitute a thesis for a part of the units required in Section C. A reading list must be covered by all students. Final evaluation is by a comprehensive written and oral examination, including fluency in the Spanish language.

The candidate for the M.A. degree must consult a graduate adviser before beginning his program. Before being advanced to candidacy for the degree, he must demonstrate proficiency in the language to a faculty committee appointed for that purpose.

For further information, consult the Department of Foreign Languages and Literatures.

See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin*.

FOREIGN LANGUAGES COURSES

196 Student-to-Student Tutorials (1-3)
See page 85.

198 Programmed Courses in Uncommonly Taught Languages (1-3)
Intensive individualized programmed instruction in specific languages other than those regularly offered by the Department of Foreign Languages and Literatures, such as Arabic, Turkish or Hindi. Designed to develop the skills of auditory comprehension and speaking in the language to form a basis for later development of the reading and writing skills. A minimum of 3 hours per week in the learning laboratory as well as regular sessions with native informants, are required for each unit of credit. May be repeated for credit.

496 Student-to-Student Tutorials (1-3)
See page 85.

FOREIGN LANGUAGES EDUCATION COURSES

442 Teaching Foreign Languages in the Secondary School (3)
Prerequisites: French, German or Spanish 466; and admission to teacher education or consent of instructor. The theory and practice of language learning and language teaching with special emphasis on the audiolingual method. Conducted in English, with practice by students in the language they plan to teach. Required before student teaching. (2 hours lecture, plus fieldwork)

443 Principles of Teaching English to Speakers of Other Languages (3)
Prerequisite: junior standing or above. New and recent trends, including the expanded use of electromechanical aids, programmed instruction, problems of bilingualism, and selected problems in the psychological and linguistic foundations of modern teaching of English to speakers of other languages.

449A Teaching Foreign Languages in the Secondary School (10)
See description under Division of Teacher Education.

449B Student Teaching Seminar (2)
See description under Division of Teacher Education.

450 Spanish Classroom Vocabulary (2)
Prerequisite: Spanish 317 or 318 or equivalent, or consent of instructor. For the teacher or potential teacher in bilingual classroom situations. Provides practice in Spanish classroom vocabulary at the primary and secondary levels.

542 Problems in Language Acquisition (2)
Seminar focusing on current research into language learning. Recent developments and innovations in the structural approach to language behavior.

545G German Culture in the Language Classroom (2)
Prerequisite: German 315 or consent of instructor. A thorough review of the geography, social organization, political structure, contemporary patterns of culture and value systems of German speaking lands. Emphasis on the resources and techniques available to the teacher of German.

749 Student Teaching in Foreign Languages in the Secondary School and Seminar (6)
For candidates seeking the Fisher standard credential in secondary teaching. See description and prerequisite under Division of Teacher Education.

CHINESE COURSES

101 Fundamental Chinese—A (3)
Practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic structure of Chinese. Audiolingual assignments will be prepared in the language laboratory. Conducted in Chinese.

102 Fundamental Chinese—B (3)
Prerequisite: Chinese 101 or equivalent. Practice in listening-comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structure of Chinese. Audiolingual assignments will be prepared in the language laboratory. Conducted in Chinese.

FRENCH COURSES

101 Fundamental French—A (5)
Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structure of French. Audiolingual assignments in the language laboratory are an integral part of the course. Conducted in French.

102 Fundamental French—B (5)
Prerequisite: French 101 or equivalent. Practice in listening comprehension, speaking, reading and writing to develop control of the sounds and basic structure of French. Assignments in the language laboratory are an integral part of the course. Conducted in French.

203 Intermediate French—A (3)
Prerequisite: French 102 or equivalent. Intensive practice in speaking, understanding, reading, and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in French.

204 Intermediate French—B (3)
Prerequisite: French 203 or equivalent. Intensive practice in speaking, understanding, reading and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in French.

230 Intermediate Diction and Phonetics (2)
Practice in oral delivery of cultural and literary materials. Detailed analysis of individual problems in pronunciation followed by intensive work in class and the language laboratory. May be taken concurrently with French 203. Conducted in French.

240 Intermediate Composition (2)
Practice in written expression based on cultural and literary materials. May be taken concurrently with French 204. Conducted in French.

300 French Conversation (3)
Prerequisite: French 204 or equivalent. Designed to enable the student to develop further his oral control of the language in the context of his own or contemporary concerns. Conducted in French.

305 Introduction to Literature (3)
Prerequisite: French 204 or equivalent. Examination of what is known about the nature of human language, the literary use of language, literary creation, reading, and what critics are able to say about literary works. Reading and discussion of some typical, mainly contemporary, texts. Conducted in French.

315 Origins of Modern France (3)
Prerequisite: French 204 or equivalent. The social, intellectual and artistic origins of French civilization: feudal society becoming the *ancien régime;* the medieval world-view transformed by the Renaissance. Literary selections will be read in modern French translation. Conducted in French.

317 Advanced Composition and Grammar (3)
Prerequisite: French 204 or equivalent. Emphasis on free oral and written expression. Conducted in French.

318 Advanced Composition and Grammar (3)
Prerequisite: French 317 or equivalent. Designed to give the student special competence in the control of French as an instrument for free oral and written expression. Conducted in French.

325 Contemporary French Civilization (3)
Prerequisite: French 204 or equivalent. Reading and discussion to develop understanding of the social and intellectual problems, trends, and contributions of present-day France, while at the same time strengthening facility with the language. Conducted in French.

399 Advanced French Phonetics (2)
Prerequisite: French 230 or consent of instructor. Analysis of students' specific problems in

pronunciation, followed by work in class and the language laboratory until articulatory proficiency is achieved.

400 French for Advanced Students and Teachers (3)
Prerequisite: French 317 or consent of instructor. Intensive review of spoken French, while developing the student's powers of self-expression in the spoken and written language. Conducted in French.

415 French Classicism (3)
Prerequisite: French 305 and 317. The decisive moment in French experience. Focus on literature of the Classic period (1660-1685), but open to both ends to include the formation and perenniality of French Classicism. Conducted in French.

425 French Romanticism (3)
Prerequisites: French 305 and 317. The revolution in feeling and intellect in 19th-century France. Emphasis on the Romantic period (1820-1850) but the course may include material preceding or following those dates. Conducted in French.

466 Introduction to French Linguistics (3)
The analytical procedures of general linguistics as applied to French, with special attention to structural contrasts between French and English. Emphasis on the application of linguistic analysis to the teaching of modern foreign languages.

475A,B,C,D Seminar in 20th-Century French Literature (3,3,3,3)
Prerequisite: French 305, 315, 317, and 415 or 425. If 415 or 425 has not been completed, one must be taken concurrently. Organizes the study of 20th-century French literature around four major themes. Conducted in French.

475A Exploration of the Self (3)
Search for identity and the quest for personal authenticity. The role of the conscious and unconscious mind and of artistic creativity. Proust, Gide, Mauriac, Valéry, etc.

475B In Search of the Real (3)
The surrealist revolt against bourgeois logic, mores and literature. From Dada to automatic writing to Revolution to *l'amour fou*. Includes precursors and kindred spirits (e.g. Lautreamont, Jarry).

475C The Individual and Society (3)
Attitudes toward personal freedom; the existential sense of responsibility toward one's fellow man. Saint-Exupéry, Malraux, Sartre, Camus, etc.

475D Beyond Despair (3)
Writers after World War II seeking tough-minded visions of man to replace the naive humanism of the '30's, new kinds of hope "beyond despair", (Sartre's "la vraie vie commence au-delà du désespoir").

485 Senior Seminar in French Literature (3)
Prerequisites: French 305, 315, 317 and senior standing. Exploration of a literary current, period, author, genre or problem. Subject will change each time course is given and may be repeated for credit. Conducted in French.

499 Independent Study (1-3)
Supervised projects in French language or literature to be taken with the consent of the instructor and department chairman. May be repeated for credit.

500 Graduate Seminar: Advanced Structure and Style (3)
Prerequisite: consent of instructor. Conducted in French.

510 Graduate Seminar: Phonology (3)
Prerequisite: French 466 or consent of instructor. Conducted in French.

520 Graduate Seminar: Old French (3)
Prerequisite: consent of instructor. Readings in the medieval literature of northern France representing a wide variety of dialects and centuries. Conducted in French.

530 Graduate Seminar: Historical Linguistics (3)
Prerequisite: French 466 or consent of instructor. Some previous study of Latin is highly recommended. Studies in the phonetic, morphological, syntactic and semantic changes that characterize the development of Latin into the French of today. Conducted in French.

557 Graduate Seminar: French Poetry (3)
Prerequisite: consent of instructor. Conducted in French.

571 Graduate Seminar: French Prose (3)
Prerequisite: consent of instructor. Conducted in French.

575 Graduate Seminar: French Drama (3)
Prerequisite: consent of instructor. Conducted in French.
576 Graduate Seminar: Major Writers (3)
Prerequisite: consent of instructor. May be repeated for credit. Conducted in French.
598 Thesis (3-6)
Prerequisite: recommendation of student's graduate committee.
599 Independent Graduate Research (1-3)
Prerequisites: fluency in French and consent of instructor. Supervised research projects in French language or literature. May be repeated for credit.

GERMAN COURSES

100A-J Personalized Instruction in Fundamental German (3-10)
Covers material equivalent to German 101 or 102. Students may enter at any level but must initially register for a minimum of three units. Course is divided into 10 one-unit modules. Students work independently and meet individually with instructors for consultation and tests.
101 Fundamental German—A (5)
Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structures of German. Audiolingual assignments prepared in the language laboratory are an integral part of the course.
102 Fundamental German—B (5)
Prerequisite: German 101 or equivalent. Intensive practice in listening comprehension, speaking, reading, and writing on a basic level. Audiolingual assignments prepared in the language laboratory are an integral part of the course.

203 Intermediate German—A (3)
Prerequisite: German 102 or equivalent. Intensive practice in speaking, understanding, reading, and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in German.
204 Intermediate German—B (3)
Prerequisite: German 203 or equivalent. Intensive practice in speaking, understanding, reading and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in German.
213 Intermediate Reading (2)
Prerequisite: German 102 or equivalent. Practice in skills to develop reading comprehension. Required for major and minor. May be taken concurrently with German 203. Conducted in German.
214 Intermediate Reading (2)
Prerequisite: German 203 or equivalent. Continuation of German 213. Practice in skills to develop reading comprehension. Required for major and minor. May be taken concurrently with German 204. Conducted in German.
301 Readings in German for the Non-Major (3)
Prerequisite: German 102 or equivalent. Readings reflecting a broad spectrum of writing in the sciences and humanities. Special attention given to rapid reading and recognition of structure and vocabulary.
315 Introduction to German Civilization (3)
Prerequisite: German 204 or equivalent. Open to lower division students with consent of instructor. Readings and discussions in German literature, arts and institutions to develop insights into German culture, while strengthening facility with the language. Conducted in German.
317 Advanced Conversation and Composition (3)
Prerequisite: German 204 or equivalent. Open to lower division students with consent of instructor. Emphasis on free oral and written expression. Conducted in German.

318 Advanced Composition and Grammar (3)
Prerequisite: German 317 or consent of instructor. Designed to give the student special competence in the control of German as an instrument for free oral and written expression. Conducted in German.

325 Current Trends in Culture of German-Speaking Peoples (3)
Prerequisite: German 204 or equivalent. Open to lower division students with consent of instructor. Readings and discussion designed to acquaint the student with a broad range of German contributions to present-day civilization while strengthening facility with German language. Conducted in German.

375 Introduction to Literary Forms (3)
Prerequisite: German 317 or consent of instructor. Introduction to the principal literary forms, prose fiction, poetry, drama and the essay and to the major concepts of literary techniques and criticism. Close analysis and interpretation of various texts. Conducted in German.

390 Group Reading and Oral Interpretation (3)
Prerequisite: German through fourth semester or consent of instructor. Oral reading of *Hörspiele*, dramatic literature and poetry in groups. Emphasis on practice in reading aloud, with simultaneous discussion of surface, inner and personal meaning of the works. Conducted in German.

399 German Phonetics (2)
Prerequisites: junior standing and consent of instructor. Detailed analysis of individual problems in pronunciation followed by intensive work in class and the language laboratory. May be repeated for credit. Conducted in German.

400 German for Advanced Students and Teachers (3)
Prerequisites: German 317 or consent of instructor. Intensive review of German while developing the student's powers of self-expression in the spoken and written language. Conducted in German.

430 German Literature and Culture to the Baroque (3)
Prerequisite: German 315, 317 and 375 or consent of instructor. Masterpieces of German literature from the *Hildebrandslied* to *Der Abenteuerliche Simplicissimus* and their relationship to cultural, historical and intellectual developments between ca. 800-1670 A.D. Conducted in German.

440 18th-Century German Literature and Culture (3)
Prerequisite: German 315, 317 and 375, or consent of instructor. The principal authors and movements (Enlightenment, Storm and Stress, Classicism, early Romanticism) of the 18th century. Conducted in German.

450 19th-Century German Literature and Culture (3)
Prerequisite: German 315, 317 and 375, or consent of instructor. Significant impulses in 19th-century German literature from Romanticism to Naturalism, including examination of decisive philosophic, political, and economic influences. Conducted in German.

460 20th-Century German Literature and Culture (3)
Prerequisite: German 315, 317, 375, or consent of instructor. Major German prose, drama and poetry of the 20th century. Conducted in German.

466 Introduction to German Linguistics (3)
The analytical procedures of general linguistics as applied to German, with special attention to structural contrasts between German and English. Emphasis on the application of linguistic analysis to the teaching of modern foreign languages.

482 German Literature and Culture in Film (3)
Prerequisite: advanced standing in literature or consent of instructor. A critical study of literary works and their film adaptations. Significant works of German literature will be analyzed and compared in both art forms.

485 Senior Seminar in German Literature (3)
Prerequisite: senior standing in German. Research and discussion in depth of a literary movement, a genre or an author. Subject varies and is announced in the *Class Schedule*. May be repeated for credit with a different topic. Conducted in German.

490 Oral Interpretation of Literature (3)
Prerequisite: consent of instructor. Group and individual reading of various types of literature to develop oral and interpretative skills. Conducted in German.

499 Independent Study (1-3)
Supervised research projects in German Language or literature to be taken with consent of instructor and department chair. May be repeated for credit.

500 Graduate Seminar: Advanced Structure and Style (3)
Prerequisite: consent of instructor. Conducted in German.

510 Graduate Seminar: Phonology (3)
Prerequisite: German 466 or consent of instructor. Conducted in German.
530 Graduate Seminar: Historical Linguistics (3)
Prerequisite: German 466 or consent of instructor. Conducted in German.
550A,B,C Interpretation of Literature (2,2,2)
Prerequisite: consent of instructor. Interpretation of literary works in advanced language classes. Conducted in German. **A**—the narrative, **B**—the drama, **C**—poetry.
557 Graduate Seminar: German Poetry (3)
Prerequisite: consent of instructor. May be repeated for credit with a different topic. Conducted in German.
571 Graduate Seminar: German Prose (3)
Prerequisite: consent of instructor. Subject will vary and will be announced in the *Class Schedule*. May be repeated for credit with a different topic. Conducted in German.
575 Graduate Seminar: German Drama (3)
Prerequisite: consent of instructor. Subject will vary and will be announced in the *Class Schedule*. May be repeated for credit with a different topic. Conducted in German.
576 Graduate Seminar: Major Writers (3)
Prerequisite: consent of instructor. Subject will vary and will be announced in the *Class Schedule*. May be repeated for credit with a different topic. Conducted in German.
598 Thesis (3-6)
Prerequisite: recommendation of student's graduate committee.
599 Independent Graduate Research (1-3)
Prerequisites: fluency in German and consent of instructor. Supervised research projects in German language or literature. May be repeated for credit.

HEBREW COURSES

101 Fundamental Hebrew—A (3)
Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic structure of Hebrew.
102 Fundamental Hebrew—B (3)
Prerequisite: Hebrew 101. Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic structure of Hebrew.
203 Intermediate Hebrew—A (3)
Prerequisite: Hebrew 102 or consent of instructor. Intensive practice in speaking, understanding, reading and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in Hebrew.
204 Intermediate Hebrew—B (3)
Prerequisite: Hebrew 203 or consent of instructor. Intensive practice in speaking, understanding, reading and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in Hebrew.
499 Independent Study (1-3)
Supervised projects in Hebrew language or literature to be taken with consent of instructor and department chair. May be repeated for credit.

ITALIAN COURSES

101 Fundamental Italian—A (4)
Intensive practice in listening comprehension, speaking and writing to develop control of the sounds and the basic structure of Italian. Audiolingual assignments are an integral part of the course and are to be prepared in the language laboratory. Conducted in Italian.
102 Fundamental Italian—B (4)
Prerequisite: Italian 101 or equivalent. Practice in listening comprehension, speaking, reading and writing to develop control of the sounds and basic structure of Italian. Audiolingual assignments are an integral part of the course. Conducted in Italian.

203 Intermediate Italian—A (3)
Prerequisite: Italian 102 or equivalent. Intensive practice in speaking, understanding, reading and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in Italian.

204 Intermediate Italian—B (3)
Prerequisite: Italian 203 or equivalent. Intensive practice in speaking, understanding, reading and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in Italian.

JAPANESE COURSES

101 Fundamental Japanese—A (3)
Practice in listening-comprehension, speaking and writing to develop control of the sounds and the basic structure of Japanese. Audiolingual assignments will be prepared in the language laboratory. Conducted in Japanese.

102 Fundamental Japanese—B (3)
Prerequisite: Japanese 101 or equivalent. Practice in listening-comprehension, speaking and writing to develop control of the sounds and the basic structure of Japanese. Audiolingual assignments will be prepared in the language laboratory. Conducted in Japanese.

LATIN COURSES

101 Fundamental Latin—A (3)
Intensive practice to develop a comprehensive reading knowledge and a fundamental writing ability in Latin. Modern techniques of language instruction will be applied.

102 Fundamental Latin—B (3)
Prerequisite: Latin 101 or equivalent. Intensive practice to develop a comprehensive reading knowledge and a fundamental writing ability in Latin. Modern techniques of language instruction will be applied.

203 Intermediate Latin (3)
Prerequisite: Latin 102 or equivalent (two years of high school Latin). Intensive reading and writing. Selected prose and poetry from the Golden Age. Audiolingual techniques of language learning are used when applicable.

203 Intermediate Latin—A (3)
Supervised projects in Latin language and Roman literature. To be taken with consent of department chair as a means of meeting special curricular problems. Subject matter will vary. May be repeated for credit.

204 Intermediate Latin—B (3)
Prerequisite: Latin 203 or equivalent (three years of high school Latin). Intensive reading and writing. Selected prose from the Silver and Middle Ages. Audiolingual techniques of language learning are used when applicable.

499 Independent Study (1-3)
Supervised projects in Latin language and Roman literautre. To be taken with consent of department chair as a means of meeting special curricular problems. Subject matter will vary. May be repated for credit.

PORTUGUESE COURSES

101 Fundamental Portuguese—A (4)
Listening comprehension, speaking, reading comprehension, and writing to develop control of the sounds and the basic forms and structures of Portuguese. Enrollment restricted to students with previous study of a Romance language. Conducted in Portuguese.

102 Fundamental Portuguese—B (4)
Prerequisite: Portuguese 101 or equivalent. Listening comprehension, speaking, reading comprehension, and writing to develop control of the sounds and the basic forms and structures of Portuguese. Enrollment restricted to students with previous study of a Romance language. Conducted in Portuguese.

315 Introduction to Luso-Brazilian Culture and Civilization (3)
Prerequisite: Portuguese 102 or equivalent, reading knowledge of Portuguese or consent of

instructor. Insights into the main currents of Portuguese culture and civilization and Brazil's intellectual and artistic development from discovery through the Second Empire. Conducted in Portuguese.

317 Advanced Conversation and Composition (3)

Prerequisite: Portuguese 102 or equivalent. Open to lower division students with consent of instructor. Emphasis on free oral and written expression. Conducted in Portuguese.

318 Advanced Conversation and Composition (3)

Prerequisite: Portuguese 102 or equivalent. Open to lower division students with consent of instructor. Designed to give the student special competence in the control of Portuguese as an instrument for free oral and written expression. Conducted in Portuguese.

325 Contemporary Brazilian Civilization (3)

Prerequisite: Portuguese 315 or consent of instructor. Readings and discussion toward developing an understanding of the social and intellectual problems, trends, and contributions to Brazil from the advent of the Republic. Major emphasis on present day Brazil. Conducted in Portuguese.

431 Portuguese Literature (3)

Prerequisite: Portuguese 315 or consent of instructor. Portuguese literature from the Middle Ages to the present. The major works of Gil Vicente, Luis de Camoens, Eca de Queiroz and others examined from an aesthetic and cultural standpoint. Conducted in Portuguese.

441 Brazilian Literature (3)

Prerequisite: consent of instructor. The literature of Brazil from the Colonial period to the present. Conducted in Portuguese.

499 Independent Study (1-3)

Supervised projects in Portuguese language or literature to be taken with consent of instructor and department chair. May be repeated for credit.

RUSSIAN COURSES

101 Fundamental Russian—A (5)

Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structure of Russian. Audiolingual assignments are an integral part of the course and are to be prepared in the language laboratory.

102 Fundamental Russian—B (5)

Prerequisite: Russian 101 or equivalent. Intensive practice in listening comprehension, speaking, reading and writing on a basic level. Audiolingual assignments are an integral part of the course and are to be prepared in the language laboratory.

203 Intermediate Russian—A (3)

Prerequisite: Russian 102 or equivalent. Intensive practice in speaking, understanding, reading, and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in Russian.

204 Intermediate Russian—B (3)

Prerequisite: Russian 203 or equivalent. Intensive practice in speaking, understanding, reading and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in Russian.

315 Introduction to Russian Civilization (3)

Prerequisite: Russian 204 or equivalent. Readings and discussions of literature, arts and institutions to develop insights into Russian traditions while strengthening facility with the language. Conducted in Russian.

317 Advanced Conversation and Composition (3)

Prerequisite: Russian 204 or equivalent. Open to lower division students with consent of instructor. Emphasis on free oral and written expression. Conducted in Russian.

375 Introduction to Literary Forms (3)

Prerequisite: Russian 317 or consent of instructor. Introduction to the principal literary forms, prose fiction, poetry, drama and essay, and to the major concepts of literary techniques and criticism. Close analysis and interpretation of various texts. Conducted in Russian.

400 Russian for Advanced Students and Teachers (3)
Prerequisite: Russian 317 or consent of instructor. Intensive review of spoken Russian, while developing the student's powers of self-expression in the spoken and written language. Conducted in Russian.

441 The Works of Tolstoy and Dostoevsky (3)
Prerequisite: Russian 315 or consent of instructor. Major works of Tolstoy and Dostoevsky in their intellectual and historical setting and their impact on Russian and world literature. Conducted in Russian.

451 The Golden Age of Russian Literature (3)
Prerequisite: Russian 315 or consent of instructor. A study of major literary works of the first half of the 19th century which exemplify cultural and intellectual movements in Russia. Conducted in Russian.

461 Russian Literature from 1917 (3)
Prerequisite: Russian 315 or consent of instructor. Representative works of outstanding modern Russian writers. Analysis and discussion of their prose and poetry in the light of the social problems of present-day Russia. Conducted in Russian.

466 Introduction to Russian Linguistics (3)
Prerequisite: Russian 317 or consent of instructor. The analytical procedures of general linguistics as applied to Russian with special attention to structural contrasts between Russian and English. Emphasis on the application of linguistic analysis to the teaching of modern foreign languages.

499 Independent Study (1-3)
Supervised projects in Russian language or literature to be taken with consent of instructor and department chair. May be repeated for credit.

SPANISH COURSES

101 Fundamental Spanish—A (5)
Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structures of Spanish. Assignments in the language laboratory are an integral part of the course. Conducted in Spanish.

102 Fundamental Spanish—B (5)
Prerequisite: Spanish 101 or equivalent. Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structures of Spanish. Assignments in the language laboratory are an integral part of the course. Conducted in Spanish.

103 Intensive Review of Fundamental Spanish (5)
For students who have completed 1-2 years of high school Spanish or equivalent and need an intensive review of first-year Spanish, equivalent to Spanish 101 and 102. Assignments in the language laboratory are an integral part of the course. Conducted in Spanish.

203 Intermediate Spanish—A (3)
Prerequisite: Spanish 102 or equivalent. Intensive practice in speaking, understanding, reading and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in Spanish.

204 Intermediate Spanish—B (3)
Prerequisite: Spanish 203 or equivalent. Intensive practice in speaking, understanding, reading and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in Spanish.

213 Intermediate Conversation (2)
Practice in oral expression based on a variety of materials. May be taken concurrently with Spanish 203. Conducted in Spanish.

214 Intermediate Composition (2)
Practice in written expression based on cultural and literary materials. May be taken concurrently with Spanish 204. Conducted in Spanish.

299 Spanish Phonetics (2)
Prerequisite: junior standing and consent of instructor. Detailed analysis of students' specific problems in pronunciation followed by intensive work in class and the language laboratory until articulatory proficiency is achieved. May be repeated for credit. Conducted in Spanish.

300 Spanish Conversation (3)
Prerequisite: Spanish 204 or equivalent. Designed to enable the student to develop further his oral control of the language in the context of his own or contemporary concerns. No credit for major. Conducted in Spanish.

315 Introduction to Spanish Civilization (3)
Prerequisite: Spanish 204 or equivalent. Open to lower division students with consent of instructor. Readings and discussions in Spanish literature, arts and institutions to develop insights into Spanish culture, while strengthening facility with the language. Conducted in Spanish.

316 Introduction to Spanish-American Civilization (3)
Prerequisite: Spanish 204 or equivalent. Open to lower division students with consent of instructor. Readings and discussion in Spanish-American literature, arts and institutions to develop insights into Spanish-American literature and culture while strengthening facility with the language. Conducted in Spanish.

317 Advanced Conversation and Composition (3)
Prerequisite: Spanish 204 or equivalent. Open to lower division students with consent of instructor. Emphasis on free oral and written expression. Conducted in Spanish.

318 Advanced Spanish Syntax and Composition (3)
Emphasis on linguistic problems encountered by the Spanish/English bilingual student in connection with his written expression. Conducted in Spanish.

375 Introduction to Literary Forms (3)
Prerequisite: Spanish 317 or consent of instructor. Introduction to literary forms and concepts of literary techniques and criticism. Analysis and interpretation of various texts to increase the students' abilities in reading, language, and literary criticism. Conducted in Spanish.

400 Spanish for Advanced Students and Teachers (3)
Prerequisite: Spanish 317 or consent of instructor. Intensive study of spoken Spanish, while developing the student's powers of self-expression in the spoken and written language. Conducted in Spanish.

415 Contemporary Spanish Culture (3)
Prerequisite: Spanish 315 or consent of instructor. An analysis and study of the cultural—social, economical, political—characteristics of contemporary Spanish life. Conducted in Spanish.

430 Spanish Literature to Neoclassicism (3)
Prerequisite: Spanish 315 and 375. Spanish literature from its beginnings to 1700, with special emphasis on the outstanding representative works of each genre. Conducted in Spanish.

440 Spanish-American Literature (3)
Prerequisites: Spanish 316 and 375 or consent of instructor. Spanish- American Literature from The Conquest to 1888. Conducted in Spanish.

441 Spanish-American Literature (3)
Prerequisites: Spanish 316 and 375 or consent of instructor. Spanish-American Literature from *modernismo* to the present. Conducted in Spanish.

461 Spanish Literature Since Neoclassicism (3)
Prerequisites: Spanish 315 and 375 or consent of instructor. Representative works of 19th- and 20th-century Spain. Conducted in Spanish.

466 Introduction to Spanish Linguistics (3)
The analytical procedures of general linguistics as applied to Spanish, with special attention to structural contrasts between Spanish and English. Emphasis on the application of linguistic analysis to the teaching of modern foreign languages.

467 Dialectology: Current Trends in Modern Spanish (3)
Prerequisite: Spanish 317 or 318, 400 or equivalent and 466, the latter of which may be taken concurrently. Focuses on the differences in phonology, morphology, syntax and lexicon in linguistic patterns in all Spanish-speaking regions.

468 Spanish-English Contrastive Analysis (3)
Prerequisite: Spanish 317 or 318, 400 or equivalent, and 466, the latter of which may be taken concurrently. Theory and performance techniques for contrasting phonological, grammatical and lexical structures of Spanish and English.

475 Senior Seminar: Contemporary Literature of Spain (3)
Prerequisite: senior standing in Spanish. Selected readings from the most outstanding writers of the *Generación del 98* and of the 20th century. Conducted in Spanish.
485 Senior Seminar: Hispanic Topics (3)
Prerequisite: senior standing in Spanish. Exploration of literary or cultural topics of Spain or Spanish America. Subject matter will change in alternate semesters. May be repeated for credit. Conducted in Spanish.
499 Independent Study (1-3)
Supervised research projects in Spanish language or literature to be taken with consent of instructor and department chair. May be repeated for credit.

500 Graduate Seminar: Advanced Structure and Style (3)
Prerequisite: consent of instructor. Conducted in Spanish.
510 Graduate Seminar: Phonology (3)
Prerequisite: Spanish 466 or consent of instructor. Conducted in Spanish.
530 Graduate Seminar: Historical Linguistics (3)
Prerequisite: Spanish 466 or consent of instructor. Conducted in Spanish.
556 Graduate Seminar: Spanish Poetry (3)
Prerequisite: consent of instructor. Conducted in Spanish.
557 Graduate Seminar: Spanish-American Poetry (3)
Prerequisite: consent of instructor. Conducted in Spanish.
567 Graduate Seminar: Spanish-American Novel (3)
Prerequisite: consent of instructor. Conducted in Spanish.
571 Graduate Seminar: Spanish Prose (3)
Prerequisite: consent of instructor. Conducted in Spanish.
575 Graduate Seminar: Spanish Drama (3)
Prerequisite: consent of instructor. Conducted in Spanish.
576 Graduate Seminar: Major Writers (3)
Prerequisite: consent of instructor. May be repeated for credit. Conducted in Spanish.
598 Thesis (3-6)
Prerequisite: recommendation of student's graduate committee.
599 Independent Graduate Research (1-3)
Prerequisites: fluency in Spanish and consent of instructor. Supervised research projects in Spanish language or literature. May be repeated for credit.

SWAHILI COURSES

101 Fundamental Swahili (4)
Intensive practice in listening comprehension, speaking and writing to master the basic structure of Swahili and the requisite skills for both oral and written communication. Conducted in Swahili. (Same as Afro-Ethnic Studies 104)
102 Fundamental Swahili (4)
Prerequisite: Swahili 101 or equivalent. Intensive practice in listening comprehension, speaking and writing to master the basic structure of Swahili and the requisite skills for both oral and written communication. Conducted in Swahili. (Same as Afro-Ethnic Studies 105)

DEPARTMENT OF GEOGRAPHY

FACULTY
William Ketteringham
Department Chair

George Britton, Arthur Earick, Peter Eilers, Wayne Engstrom, Glenn George, Gary Hannes, Ronald Helin, Tso-Hwa Lee, Bill Puzo, Gertrude Reith, Imre Sutton, Barbara Weightman

The major in geography provides knowledge concerning variety and change in the earth's physical foundation and in man's economic, cultural and political relationship to that foundation. In doing so it contributes to a broad, liberal education and furnishes sound preparation for employment in business, planning, and government service. The field also

provides a foundation for teaching on the elementary and secondary levels and for advanced geographic study on the graduate level leading to university teaching and research.

Students and counselors are advised that departmental offerings are numbered according to *instructional level* and *course content*. These criteria are applied in the following ways:

Instructional level

survey courses designed primarily for non-majors	100-199
survey courses designed primarily for majors	200-299
courses designed for students with general needs and not normally applicable to graduate programs in geography	300-399
courses designed for students with special needs; prerequisites cited are strictly interpreted	400-499
courses for graduate students and qualified undergraduate students	500-599

Course content

general courses:	00-09 (e.g., Geography 100 or 500)
physical courses:	10-29 (e.g., Geography 211 or 323)
regional courses:	30-49 (e.g., Geography 344 or 433)
human courses:	50-79 (e.g., Geography 250 or 367)
technical courses:	80-89 (e.g., Geography 280 or 381)
special studies:	90-99 (e.g., Geography 499 or 599)

BACHELOR OF ARTS IN GEOGRAPHY

The major consists of at least 42 units of geography, including:

A. A 10-unit geography core (211, 250, 280)
B. A 12-unit breadth requirement in upper division geography, including one course from each of the following groups—*physical, regional, human, technical.*
C. A six-unit requirement in 400-level geography, excluding the 490s.

Students may satisfy requirements A, B and C with equivalent course work taken at other institutions; they may also transfer into the major an additional six units of lower division geography and an unlimited amount of upper division geography. A three-unit nonlaboratory course in introductory physical geography taken at another institution will be accepted in place of Geography 211, the four-unit laboratory course offered at this university.

No *unit* credit toward the major will be allowed for geography courses in which a grade of D is received. *Content* credit for such courses may be allowed by the student's adviser.

TEACHING MINOR IN GEOGRAPHY

The minor in geography serves students who wish to pursue a second field related to a teaching credential, interdisciplinary studies, or an elective concentration. Interested students should take at least 21 units of geography, including the *core* (211, 250, 280) and a minimum of nine units of upper division work from at least three of the following groups—*physical, regional, human, technical.*

MASTER OF ARTS IN GEOGRAPHY

This program provides advanced study in geographic concepts, techniques and methods. Through seminars and research it develops the analytical and interpretive abilities of the student, and provides requisite background for employment in teaching, government and business.

Prerequisites

Students must meet the university and school requirements for admission to conditionally classified graduate standing with the declared objective of this degree. Please see the section of this catalog on admission of graduates.

Classified standing requires the equivalent of 33 semester units in geography, including the following: (1) nine units in introductory geography; (2) nine units in upper division physical and human geography, including at least three units in physical and three units in human geography; (3) three units in upper division geographic techniques; (4) three units in upper

division regional geography; and (5) nine units of geography electives, of which six units must be the equivalent of 400-level. A 3.0 (B) average in all geography courses is required prior to classification in the program. Course or grade deficiencies may be made up with consent of the *departmental* graduate committee. After completion of all prerequisites and removal of deficiencies, if any, the student is reviewed for classification into the program by the *departmental* graduate committee, which then supervises the student in the formulation of an official study plan.

A study plan must be developed and approved for admission to classified graduate standing.

Study Plan

Requirements for the completion of the degree program include:

A. 30 units of approved upper division or graduate-level work distributed as follows:

	Units
Geography seminars *(minimum of)*	9
Geography 597, Project, *or* Geography 598, Thesis	6
Elective upper division or graduate work in geography (for which up to 6 units may be taken in related fields) including techniques	15
Total	30

B. A technique requirement equivalent to nine units, completed prior to Advancement to Candidacy. This includes the three units used as prerequisite. The remaining six units may be upper division undergraduate and/or graduate level.

Candidacy is attained on the satisfactory completion of the following: (1) 12 approved units of work with B or better in all, including at least three units in a 500-level seminar; (2) the technique requirement; (3) selection of a field of specialization and an appropriate adviser as chair of the *student's* graduate committee. Each candidate will prepare either two three-unit projects or a six-unit thesis. Before registering for Geography 597 or 598, a candidate must have topic approved by the *student's* graduate committee. The candidate must submit to the committee a detailed written research proposal which indicates knowledge of the appropriate literature and of techniques of data collection and analysis. The committee will then discuss this proposal with the candidate, to determine his/her competence to pursue the topic as outlined, and assure that both the student and the committee understand what is to be done. The committee can modify, accept or reject the proposal. Students interested in foreign area studies are expected to demonstrate a proficiency in a suitable foreign language.

All graduate students are to confer with the departmental graduate adviser sometime during the first two weeks of each semester; for further information, consult this adviser.

See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin.*

GEOGRAPHY COURSES

100 Man and the Land (3)

An introduction to world geography, with emphasis on the world's major regions and on their use and modification by man.

150 Environment in Crisis (3)

A geographic analysis and approach to the problems of man and his environment, dealing with man's interpretation of the environment and his use and misuse thereof. Factors of discussion will include population, nutrition, health, settlement, pollution, resource utilization and local environmental problems.

211 Physical Geography (4)

A study of the basic elements of the physical environment (e.g. weather, climate, landforms, vegetation and soils) and an analysis of their world distribution and interrelationships. (3 hours lecture, 2 hours activity)

250 Human Geography (3)

A topical and thematic interpretation of world human occupancy, with emphasis on population patterns, cultural diversity, livelihood, and settlement. Discussions consider the

varying role of perception, human organization and technology in the modification of the earth environment.

280a-f Introduction to Geographical Analysis (1)
Basic introduction to the use of descriptive statistics in geography. Review of the relationships of graphs, functions and equations, logarithms and exponents, and an overview of the linear regression model.

280a Interpretation of Maps and Aerial Photographs (2)
An introduction to the uses of maps and aerial photographs in geographic research. Emphasis is placed on types of data which can be obtained from these sources as well as on rudimentary measurement techniques.

280b Introduction to Field Methods (1)
A basic introduction to the study of geographic phenomena in their actual setting—"the field."

280c Introduction to Quantitative Methods (1)
Basic introduction to the use of descriptive statistics in geography. Review of the relationships of graphs, functions and equations, logarithms and exponents, and an overview of the linear regression model.

280d Terrain Measurement Techniques (1)
An introduction to methods of measuring selected aspects of land surface from in the field and from topographic maps.

280e Library Techniques for Geographers (1)
An introductory study of library research for geographic inquiry, with emphasis on how and where to find the needed information as well as the uses of such information.

280f Geographic Writing (1)
A workshop providing writing experience relevant to the training of geographers.

312 Geomorphology (3)
Prerequisite Geography 211 or Earth Science 101. A study of the development of landforms through an analysis of the processes that construct and modify them.

323 Weather and Climate (3)
Prerequisite: Geography 211 or consent of instructor. A study of atmospheric elements and controls, and climatic classification systems.

325 Plant Geography (3)
Prerequisite: Geography 211 or consent of instructor. A geographic analysis of world distribution, ecology and description of vegetation patterns including reference to human influences.

330 Geography of California (3)
Prerequisite: Geography 100 or upper division standing. Description and analysis of the geographic regions of California—their environmental diversity, occupance patterns, and current problems.

332 Geography of Anglo-America (3)
Prerequisite: Geography 100 or consent of instructor. A regional study of the United States and Canada emphasizing the interrelated physical and cultural features that give geographic personality to the individual regions.

$19333 Geography of Latin America (3)
Prerequisite: Geography 100 or consent of instructor. A systematic and regional survey of Middle and South America with particular emphasis on the interrelationships of the physical and social factors of the area.

336 Geography of Europe (3)
Prerequisite: Geography 100 or upper division standing. A survey of the basic physical and human lineaments of Europe and of the elements that distinguish and give character to its major regional divisions.

338 Geography of the Soviet Union (3)
Prerequisite: Geography 100 or upper division standing. A study of the geographic factors, cultural and physical, that are basic to an understanding of the historical development of Russia and of the contemporary economic and cultural geography of the U.S.S.R. and its regions.

340A Geography of East Asia (3)
Prerequisite: Geography 100 or consent of instructor. A regional study of China and Japan in terms of internal and external economic, social and political activities and interrelationships.

340B Geography of Southeast Asia (3)
Prerequisite: Geography 100 or consent of instructor. A regional study of the diversity so characteristic of man and land in southeastern Asia, with special emphasis on the growing significance—in economic, social and political terms—of the region's newly emergent nations.

344 Geography of Africa (3)
Prerequisite: Geography 100 or consent of instructor. The physical, human and regional geography of Africa with emphasis on Saharan borderlands and East Africa.

346 Australia and the Pacific Islands (3)
Prerequisite: Geography 100 or consent of instructor. The physical, cultural and regional geography of Australia, New Zealand, Melanesia, Micronesia and Polynesia.

350 Conservation and Ecology in Contemporary America (3)
Prerequisite: upper division standing. A survey of resource-use problems and the principles of conversation and ecology with discussions of philosophy, ethics, public policy and environmental law.

355 Population Perspectives (3)
Prerequisite: upper division standing. A systematic approach to the geography of population within a regional framework. Investigation of historical and contemporary demographic patterns and processes in terms of cultural, economic and environmental factors of population growth, mobility and distribution.

360 Economic Geography (3)
A systematic inquiry into the spatial distribution of economic activities: agriculture, extractive and manufacturing industries, and tertiary services.

367 Political Geography (3)
Prerequisite: Geography 250 or consent of instructor. A systematic inquiry into the geographic bases of political territories, from the municipal to the international level with an emphasis on sovereign states. Special consideration will be given to perception of political units and to relationships among political territories.

370 Urban Geography (3)
Prerequisite: upper division standing. The city as a geographic unit; urban settlements as regional centers; city-region relationships; the structure of villages, towns and cities, and their historical developments; case studies.

381 Cartography (3)
Prerequisite: geography core or consent of instructor. Compilation and construction of maps and graphs as geographic tools, with emphasis on the principles of effective cartographic representation. (1 hour lecture, 6 hours laboratory)

386 Data Processing for Geographic Information (3)
Prerequisite: geography core or consent of instructor. An introduction to the use of a digital computer in solving geographical problems. Includes the acquisition of basic computer programming skills and the investigation of spatially-oriented problems. (2 hours lecture, 2 hours activity)

412 Regional Geomorphology of the United States (3)
Prerequisite: Geography 312. A seminar examining the major physiographic provinces of the United States. Special emphasis is placed on the record that present and past geomorphic processes have left on the landscape.

423 Physical Climatology (3)
Prerequisite: Geography 323 or consent of instructor. A seminar on selected topics in atmospheric science, including heat-transfer, atmospheric motion, synoptic and climatic analysis of weather data, and the effects of urban environment on the atmosphere. (2 hours lecture, 2 hours activity)

425 Cultural Ecology (3)
Prerequisite: Geography 211 or consent of instructor. A seminar for students in geography, related disciplines and in environmental studies. A topical (e.g. environmental health, nutrition) or regional (e.g. coastal, insular, desert) treatment of the ecological approach to man-land relationships.

431 Man's Impact on the California Environment (3)
Prerequisite: Geography 330 or upper division standing. A seminar analyzing selected geographic problems which have resulted from man's impact on the land and its resources, with particular emphasis on southern California.

432 Geography of Eastern America (3)
Prerequisite: Geography 332 or History 170A or consent of instructor. A seminar on the geography of Eastern America eastward from the Great Plains. Emphasis will be on the natural setting, patterns of movement and settlement, population characteristics, economic development, and urbanization.

433 Man and Geographic Relationships in Latin America (3)
Prerequisite: Geography 333 or consent of instructor. A seminar for advanced students in Latin American studies or geography. Studies of contemporary interest dealing with man and his development in the area of Latin America. Specific content of the course will vary from year to year, but major stress will be placed upon the larger countries of the region.

451 Geographical Change in the American West (3)
Prerequisite: Geography 332 or 350 or consent of instructor. A seminar on geographical interpretations of cultural, historical and resource management aspects of changing Western America.

457 Social Geography (3)
Prerequisite: Geography 250. A seminar on man's social milieu from a spatial perspective. Emphasis will be placed on the subjective spatial constructs of various social groups in order to illuminate extant similarities and differences in the design of earth occupance.

458 Spatial Dynamics (3)
Prerequisite: Geography 355, or 360, or 370, or consent of instructor. A seminar on the sociogeographic approach to the dynamic processes of migration and diffusion with emphasis on the spread of people, ideas and technology in modern societies.

464 Transportation Geography (3)
Prerequisite: Geography 360 or 370 or consent of instructor. An inquiry into spatial patterns of both regional and urban transportation networks; use the elementary graph theory in geographic research, transportation planning and methodology.

468 Law and Environment (3)
Prerequisite: Geography 350 or Environmental Studies 440 or consent of instructor. An interdisciplinary seminar in the role of law in the allocation, management, and administration of resources and the environment. Relevant studies relate to conservation law, land tenure, water rights, environmental health and other topics.

472 Urban Growth and Planning (3)
Prerequisite: Geography 370 or consent of instructor. A seminar on urban development with an emphasis on the decentralizing forces operating in contemporary urban space; identification of trends in the planning process.

482 Advanced Cartography—Thematic Mapping (3)
Prerequisites: Geography 381 and consent of instructor. Application of photographic techniques and cartographic analysis to advanced problems in map compilation and design. (1 hour lecture, 6 hours laboratory)

484 Airphoto and Image Interpretation (3)
Prerequisites: junior, senior or graduate standing and consent of instructor. Use of aerial photography, space photography and other remote sensors as tools and research sources. Emphasis on interpretation of physical and cultural elements of the landscape. (2 hours lecture, 2 hours activity)

485 Quantitative Geography (3)
Prerequisite: geography core or consent of instructor. An introduction to spatial analysis and geographic application of basic concepts of descriptive and inferential statistics. Includes some use of the electronic computer. (2 hours activity)

487 Ecology of the Santa Ana Mountains (3)
Prerequisite: geography core and consent of instructor. Field study, laboratory analysis and discussions of environmental factors of a wild region within urbanizing Southern California.

488 Land Use Analysis (3)
Prerequisites: geography core and consent of instructor. Analysis and interpretation of urban and rural land use and settlement with specific references to geographic field problems. Application of geographic techniques and tools to local field studies. Saturday field sessions.

495 Internship in Applied Geography (3)
Prerequisite: senior standing and consent of instructor. Students work specified number of hours in appropriate public or private organizations under the supervision of their staff and as coordinated by departmental faculty. Interns meet with instructor by arrangement.

499 Independent Study (1-3)
Open to advanced students. Student must have consent of instructor under whom study will be undertaken before enrolling. May be repeated for credit.

500 Seminar in the Evolution of Geographic Thought (3)
Prerequisite: graduate standing or consent of instructor. An inquiry into the nature, scope, and development of the geographic discipline.

510 Seminar in Physical Geography (3)
Prerequisite: graduate standing or consent of instructor. A seminar on selected topics pertaining to physical geography. May be repeated once for credit.

530 Seminar in Regional Geography (3)
Prerequisite: graduate standing or consent of instructor. A seminar on selected regions or selected topics within a regional setting. May be repeated once for credit.

550 Seminar in Human Geography (3)
Prerequisite: graduate standing or consent of instructor. A seminar on selected topics pertaining to cultural, political or social geography. May be repeated once for credit.

560 Seminar in Resource Geography (3)
Prerequisite: graduate standing or consent of instructor. A seminar on selected problems in resource utilization, land use planning and economic geography. May be repeated once for credit.

571 Seminar in Urban Problems (3)
Prerequisites: graduate standing and consent of instructor. An in-depth study of selected urban problems. Topics will vary from semester to semester and will allow for concerns of the participants. May be repeated once for credit.

580 Seminar in Geo-Techniques (3)
Prerequisite: graduate standing or consent of instructor. A seminar on selected topics pertaining to geographic techniques. May be repeated once for credit.

597 Project (3)
Prerequisites: advancement to candidacy and consent of adviser. May be repeated once for a maximum of six units of credit.

598 Thesis (3 or 6)
Prerequisites: advancement to candidacy and consent of adviser. May be repeated up to a maximum of six units of credit.

599 Independent Graduate Research (1-3)
Open to graduate students by consent of instructor. May be repeated for credit.

DEPARTMENT OF HISTORY

FACULTY
Thomas Flickema
Department Chair

Gordon Bakken,* Warren Beck, Leland Bellot,* Lauren Breese, Giles Brown,* Jack Crabbs, Lawrence de Graaf, Jack Elenbaas, George Etue, Robert Feldman, Charles Frazee, George Giacumakis, Arthur Hansen, B. Carmon Hardy, Harry Jeffrey, Sam Kupper, Sheldon Maram, Michael Meiselman, Frederic Miller, Mougo Nyaggah, Michael Onorato, David Pivar, Charles Povlovich, Jackson Putnam, Ronald Rietveld, Danton Sailor, Seymour Scheinberg, Gary Shumway, Cameron Stewart, Ernest Toy,* David Van Deventer, Nelson Woodard, James Woodward, Kinji Ken Yada, Cecile Zinberg

BACHELOR OF ARTS IN HISTORY

The undergraduate major in history is designed to provide cultural enrichment, a sense of alternative, and perspectives especially relevant to a society confronted with widespread institutional change. The department offers courses which expose the student to man's rich

* University administrative officer

and diverse experience. In addition to subject matter, the department gives particular emphasis to various methodologies and ways of thinking about mankind's past. The major may be pursued to fulfill various professional and cultural objectives common to a liberal arts program. It serves, especially, as a preparation for teaching, law, government, and other services, and as the foundation for advanced study at the graduate level.

The undergraduate program for the history major contains three well defined levels of study: introductory, intermediate and advanced. At the introductory level, the student has the opportunity to enroll in topical or survey courses in various fields. At the intermediate level, the student builds on the foundations he has established in early study, extending his understanding and moving toward greater sophistication in the use of historical materials. At the advanced level, he will devote himself to seminar work and independent study in his area or areas of specialization, at which time he will be required to apply his knowledge and training in original and challenging ways.

The undergraduate major requires a total of 40 units: 13 in introductory classes and 27 in intermediate and advanced courses. At the introductory level, each student is to enroll in History 100, Introduction to History. He must also complete four topical or survey offerings. At the intermediate level, History 399, History Methodology, must be taken along with 18 units, six each in the three fields of United States history; European history; and Latin American, Asian or African history. At the advanced level the student will be required to enroll in a research seminar and any other elective, at the upper division level, which he may choose.

Except for History 100, all courses offered in the department may be counted toward fulfillment of the general education and social science requirement for the bachelor's degree at this university.

Students majoring in history are encouraged to take work in other of the social sciences and humanities. Those intending to do graduate work in history should commence the study of at least one foreign language appropriate to the pursuit of advanced study in their particular specialty.

Program of Study for the Major

1. Introductory requirements: 13 units

   A. History 100 (prerequisite for intermediate and advanced courses)*
   B. Four courses (100-200 level) from three of the following four fields. These may be survey and/or topical courses:

      1. U.S. history (170A,B and/or 270 topic courses)
      2. European and ancient Mediterranean (110A,B, 120 and/or 220, 230 topic courses)
      3. Latin America, Asian and African (140, 160, 165 and/or 240, 250, 260 topic courses)
      4. World or comparative history (101A,B and/or 210 topic courses)

2. Intermediate requirements: 21 units

   A. History 399
   B. At least six units of U.S. history
   C. At least six units of European history
   D. At least six units in Latin America, Asian or African history

3. Advanced requirements: 6 units
   A. History 490
   B. Three units of elective, upper division level

HISTORY MAJOR AND THE RYAN ACT

The State Commission for Teacher Preparation and Licensing has approved the major in history under both the multiple subject and the single subject credential options of the Teacher Preparation and Licensing Law of 1970 (Ryan Act).

Successful completion of the history major provides a *single subject* examination waiver in either the history or the social sciences categories for secondary school teaching.

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* Students transferring from accredited institutions who have completed nine or more semester units of work in introductory or survey history courses are exempt from this requirement.

Successful completion of the history major and related course work provides a *multiple subject* examination waiver for elementary school teaching.

TEACHING MINOR IN HISTORY

The teaching minor in history is composed of units in history exclusive of the general education requirements. This teaching minor only applies under the Fisher credential program.

Recommended teaching minor:	*Units*
Introductory courses	9
Electives at the intermediate and advanced levels	12
Total	21

MASTER OF ARTS IN HISTORY

The Master of Arts in History is designed to improve the student's academic and professional competence for educational services at the elementary, secondary and community college levels and as preparation for advanced graduate work toward the doctoral degree in history. It is relevant to various other specialties in public or private enterprise and general culture or community service. The program seeks to deepen the students understanding of man's condition through a careful study of human experience.

Prerequisite

An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures).

A student who meets the requirements for conditonally classified graduate standing, as well as the following requirements, may be admitted as a classified graduate upon the development of an approved study plan: an undergraduate major in history equivalent to the Cal State Fullerton major with at least a GPA of 3.0 in the upper division history courses. Each student's background and record are evaluated by the department graduate program adviser.

Students with limited subject, grade, or breadth deficiencies may be considered for classified standing in the program upon completing courses approved by the graduate program adviser in history in addition to those required for the degree, with at least a B average.

Study Plan

Of the 30 units of adviser-approved graduate courses on the study plan for the degree, 18 must be in appropriate work at the 500-level. The remaining 12 units must include a minimum of three units in history and, therefore, may include up to nine units in other fields. The required courses for both Plan I and Plan II are:

History 501 Seminar in the Content and Method of History (3)
History 590 History and Historians (3)

A research seminar in a field of concentration (3 units)

Plan I:

A primary focus in one area in which a field is intensively developed. This results in a specific topic of research with a written thesis as the final product (History 598, Thesis: 3-6 units).

An oral examination on the thesis and the coursework will be required upon completion of the coursework but prior to the final draft of the thesis.

Plan II:

The focus in this plan is in two fields not found in the same general area. There is a minimum requirement of one graduate research seminar besides History 501 and 590. There is also a minimum requirement of one graduate reading seminar in the recent interpretations of history in the particular fields of interest.

A written comprehensive in each of the two fields will be required upon completion of the program.

Students in the History Department's graduate program must demonstrate a broad cultural understanding of one or more foreign countries relevant to the student's area of specialization prior to advancement to candidacy. This requirement may be met by a reading knowledge of an appropriate foreign language usually determined by departmental examination or an approved selection of comparative studies (12 units post-B.A.), but the method must be approved by the student's adviser. In certain programs, an examination in statistics may be substituted for the language requirement.

For further information, consult the Department of History.

See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin.*

HISTORY MAJOR CATEGORIES

I. INTRODUCTORY COURSES (for undergraduate students)

A. *Survey Courses* (Lower division)

100 Introduction to History
101A World History to 1500
101B World History Since 1500
110A Western Civilization to the 17th Century
110B Western Civilization from 1648
120 Ancient Civilizations
140 Latin American Civilizations
160 Asian Civilizations
165 Introduction to the Middle East
170A United States to 1877
170B United States Since 1877

B. *Topical Courses* (Lower division)

210 Topics in World or Comparative History
220 Topics in European History
230 Topics in the History of Science and Technology
240 Topics in Latin American History
250 Topics in African History
260 Topics in Asian History
270 Topics in American History.

II. INTERMEDIATE COURSES (for undergraduate and graduate students)

A. *Historical Methodology* (Upper division)

399 Historical Methodology

B. *Subject Area Courses* (Upper division)

The Ancient World

412A Ancient Near East—Mesopotamia
412B Ancient Near East—East Mediterranean
415A Classical Greece
415B Hellenistic Civilization
417A Roman Republic
417B Roman Empire.

Europe

340 Ancient and Medieval Britain
341 Tudor-Stuart England
342 History of England and Great Britain
400 European Social and Intellectual History to 1500
401 European Intellectual History from 1500 to the Present
419 The Byzantine Empire
421A History of the Christian Church to 1025
421B History of the Christian Church from 1025 to the Present
423A Medieval Europe, 300-1000
423B Medieval Europe, 1000-1400
425A The Renaissance
425B The Reformation
426 Rise of Modern Europe, 1648-1763

427 Europe in the Era of the French Revolution and Napoleon
428 19th Century Europe
429 Europe Since 1914
432 Germany Since 1648
434A Russia to 1890
434B The Russian Revolutions and the Soviet Regime
436 The Balkans
437 East Europe
439 History of Spain

Latin America
350A Colonial Latin America
350B Republican Latin America
450 Change in Contemporary Latin America
451 The Andean Nations
452A Brazil to 1889
452B 20th-Century Brazil
453A Mexico to 1910
453B Mexico Since 1910

Africa
356 Africa to 1850
357 Africa Since 1850
455 Contemporary Africa
456 History of West Africa
458A Southern Africa to the 20th Century
458B Southern Africa in the 20th Century

East Asia
365 Art of India
460 Problems of the Contemporary Far East
426A History of China
462B History of China
462C China Since 1949
463A History of Japan
463B History of Japan
464A History of Southeast Asia to 1850
464B History of Southeast Asia, 1850-1945
464C History of Contemporary Southeast Asia
465A History of India
465B History of India
465C History of India

Middle East
466A The Arab Ascendancy
466B The Islamic Imperial Age
467 Middle East in the 19th Century
468 Middle East in the 20th Century
469 Intellectual and Cultural History of the Middle East

The United States
383 History of California
386A American Social History 1750-1860
386B American Social History 1865-1930
470 American Colonial Civilization
471 The United States From Colony to Nation
472 Jeffersonian Themes in American Society, 1800-1861
473 Democracy on Trial 1845-1877
474 United States and Industrial Organization (1876-1914)
475 America Comes of Age, 1914-1945
476 Age of Power, Affluence and Anxiety Since 1945
479 The Urbanization of American Life
481 Westward Movement in the United States
482A History of Business in American Society

482B History of Business in American Society
483 American Religious History
484A American Constitutional History to 1865
484B American Constitutional History from 1865
485A United States Foreign Relations to 1900
485B United States Foreign Relations from 1900
486A United States Cultural History
486B United States Cultural History
487A History of Politics in American Society
487B History of Politics in American Society
488A American Negro From Slavery to Jim Crow
488B American Negro Since 1890
489 The Mexican-American in the Southwest

Science and Technology
330 History of Contemporary Science
430A History of Science: Ancient to Renaissance
430B History of Science: Copernicus to the Present
World or Comparative
405 History of the Jews
407 War and Civilization

III. ADVANCED COURSES (for undergraduate and graduate students)

A. *Seminars* (Upper division)
490 Senior Research Seminar
491 Proseminar in Special Historical Topics
492 Community History
493 Oral History
494 Special Research Techniques
495 Colloquium in History
498 History Internship

B. *Individualized Study* (Upper division)
499 Independent Study

IV. GRADUATE COURSES (for graduate students)
501 Seminar in the Content and Method of History
505 Seminar in Recent Interpretations in History
520 Seminar in European History
550 Seminar in Latin American History
560 Seminar in Afro-Asian History
570 Seminar in American History
585 Seminar in the History of United States Foreign Relations
590 History and Historians
598 Thesis
599 Independent Graduate Research

HISTORY COURSES

100 Introduction to History (1)
Designed to introduce the new history major to his academic discipline through exposure to the following topics: the uses and significance of history; the nature of history; areas and fields of history; the language and vocabulary of history; and methods of studying history. Required of all lower division majors.

101A World History to 1500 (3)
The history of mankind from earliest times to 1500 A.D. Special attention is given to the definition, evolution, and interaction of the major civilizations.

101B World History Since 1500 (3)
Global history during the past four centuries, with special emphasis on the interaction between the expanding West and the non-Western areas of the world.

110A Western Civilization to the 17th Century (3)
The study of man and Western institutions from their beginnings until the middle of the 17th century.

110B Western Civilizations from 1648 (3)
The study of man and the modernization of Western institutions from 1648 to the present.

120 Ancient Civilizations (3)
History of the ancient Near East, classical and Hellenistic Greece and Rome. The development of art, literature, science and political and economic history.

140 Latin American Civilizations (3)
Latin America, its people, politics, and culture from the conquest of Mexico to the overthrow of Salvador Allende, with emphasis on the 20th century. Lectures combined with discussion groups, films and talks by specialists in Latin American studies.

160 Asian Civilizations (3)
A study of the people and culture of East, South and Southeast Asia from historical times to the present.

165 Introduction to the Middle East (3)
The historical development of the Middle East from the Prophet Mohammed to the present. The Islamic religion, art, philosophy, poetry and key political conflicts of modern times.

170A United States to 1877 (3)
A survey of the political, social, economic and cultural development of the United States to 1877. Attention is given to Old World background, rise of the new nation, sectional problems, the Civil War and Reconstruction, Satisfies the state requirement in U.S. history.

170B United States Since 1877 (3)
A survey of U.S. history from the late 19th century to the present. Attention is given to economic transformation, political reform movements, social, cultural, and intellectual changes, and the role of the United States in world affairs. Satisfies the state requirement in U.S. history.

210 Topics in World or Comparative History (3)
Introductory world or comparative history courses.

220 Topics in European History (3)
Introductory European history courses.

230 Topics in the History of Science and Technology (3)
Introductory science and technology history courses.

240 Topics in Latin American History (3)
Introductory Latin American history courses.

250 Topics in African History (3)
Introductory African history courses.

260 Topics in Asian History (3)
Introductory Asian history courses.

270 Topics in American History (3)
Introductory American history courses.

340 Ancient and Medieval Britain (3)
The history of Britain from 55 B.C. to 1485. Emphasis on the constitutional, institutional and cultural aspects of Roman, Celtic, Anglo-Saxon, Norman and Plantagenet Britain.

341 Tudor-Stuart England (3)
The history of England from the accession of Henry VII to the Glorious Revolution. Emphasis on the political, institutional, ecclesiastical and cultural aspects of the period of the Tudors and Stuarts.

342 History of England and Great Britain (3)
A study of the political, economic and social history of Great Britain from the later Stuarts to the present. Particular stress on the modification of the parliamentary system and the growth of economic and social democracy within Britain and upon the development of responsible political systems in the dependent territories.

350A Colonial Latin America (3)
A survey of the pre-Columbian cultures; the conquests by Spain and Portugal and the European background of these countries; the development of the socioeconomic, cultural, and governmental institutions in colonial life; the background of revolutions and the wars for independence.

350B Republican Latin America (3)
A survey of the Latin American republic since 1826, emphasizing the struggle for responsible government, socioeconomic, and cultural changes, and the role of U.S. foreign policy.

356 Africa to 1850 (3)
The history of tropical Africa from earliest times to the colonial era.

357 Africa Since 1850 (3)
A study of the impact of the colonial period upon the peoples of tropical Africa including a comparative analysis of the various systems of colonial administration; the factors contributing to the rise of African nationalism and the achievement of independence; and the problems encountered by these new nations.

365 Art of India (3)
(Same as Art 341)

383 History of California (3)
A survey of the political, economic, and social history of California from the aboriginal inhabitants to the present, tracing the development of contemporary institutions and the historical background of current issues.

386A American Social History 1750-1860
A social history of the United States to the Civil War with emphasis on reform movements, temperance, moral purity, women's rights, anti-slavery, spiritualism and their importance to the formation of a modern society.

386B American Social History 1865-1930 (3)
A social history of the United States from the Civil War with emphasis on reform, social organization and values. Attention will be given to the woman's movement, censorship, divorce, the child and the limits of reform movements in an organizational society.

399 Historical Methodology (3)
A study of historical knowledge in relation to general knowledge; an introduction to the plurality of approaches in the analysis of history through the social sciences and humanities. Special emphasis will be placed upon the application of theory in historical investigations and upon forms of historical communication. Required of all majors.

400 European Social and Intellectual History to 1500 (3)
A survey of the history of ideas from Antiquity to the Renaissance. Particular attention is given to the development of western thought, its foundations in Graeco-Roman and Judao-Christian tradition and its impact on the shaping of European society and culture.

401 European Intellectual History from 1500 to the Present (3)
The history of the competing ideas in European history from 1500 to the present which have entered into the formation of modern European institutions.

405 History of the Jews (3)
History of the Jewish people from the post-biblical period to the present. Emphasis on the literature of each period as well as the relationships which exist between the Jewish communities and the societies in which they exist.

407 War and Civilization (3)
The political and social implications of modern warfare, of the development of military technologies and of changing concepts of military organizations.

412A Ancient Near East—Mesopotamia (3)
A study of the political, socioeconomic, religious, and literary history of Mesopotamian culture from the rise of the Sumerian city-states to Alexander the Great, a period of over three millennia. This will include discussion of the Sumerians, Assyrians, Babylonians, Hurrians and Persians.

412B Ancient Near East—East Mediterraneans (3)
A study of ancient Egypt from early dynastic times in the third millennium B.C. to the conquest of Alexander the Great. The history of the Syro-Palestinian region will be studied in light of its migrations and international culture. A careful study of the Hebrews and their contributions to modern civilization will be included.

415A Classical Greece (3)
A study of the civilization of ancient Greece. This course traces the rise and flourishing of the classical city-states; considerable attention is devoted to the literary and philosophic contributions to our modern civilization.

415B Hellenistic Civilization (3)
A study of the Hellenistic synthesis and the new patterns in government, the arts and sciences, philosophy and literature that appeared between the Macedonian conquest and the intervention of Rome.

417A Roman Republic (3)
A study of the development of Roman social and political institutions under the republic.

417B Roman Empire (3)
A study of Roman imperial institutions and culture. Attention is also given to the rise of Christianity.

419 The Byzantine Empire (3)
An historical study of the East Roman Empire from Constantine to the Ottoman conquest of 1453. Special attention to institutional aspects of Byzantine society: church, state, the economy, law and culture.

421A History of the Christian Church to 1025 (3)
This course traces the Christian Church from its origins in the apostolic preaching through the Middle Ages in both the East and West.

421B History of the Christian Church from 1025 to the Present (3)
This course studies the western church as an institution from 1025 to the present. Orthodoxy, Catholicism and Protestantism are presented in historical perspective.

423A Medieval Europe, 300-1000 (3)
The genesis of European society from the decline of Rome to the age of the Vikings. Attention is given to the emergence of western Europe; to the barbarian migrations which culminated in the Carolingian Empire; and to Roman, Germanic and Celtic influences in early medieval civilization.

423B Medieval Europe, 1000-1400 (3)
A topical approach is employed with particular attention given to Normandy and the Norman Conquest, technology and social change, Romanesque and Gothic art and Scholasticism.

425A The Renaissance (3)
The history of Europe from 1400 to 1525 with emphasis upon the beginnings of capitalism, the beginnings of the modern state, humanism, the pre-Reformation and the church on the eve of the Reformation.

425B The Reformation (3)
The history of Europe from 1525 to 1648; deals with the Protestants and Catholic Reformations; the religious wars; the price rise; royal absolution; the rise of science.

426 Rise of Modern Europe, 1648-1763 (3)
Prerequisite: History 110B. European diplomatic history and the balance of power from 1648 to 1763. Attention is given to the social and philosophical developments of the period.

427 Europe in the Era of the French Revolution and Napoleon (3)
A survey of European history from 1763 to 1815. Emphasis is placed on the politics, society, and culture of the Old Regime, the influence of the Enlightenment, the impact of the French Revolution on Europe, and the establishment of French hegemony by Napoleon.

428 19th-Century Europe (3)
Europe from 1815 to 1914. An examination of the political, economic, social, and cultural trends in European history from the Congress of Vienna to the outbreak of World War I. Special attention is given to the emerging forces of nationalism, liberalism, socialism, and secularism.

429 Europe Since 1914 (3)
Survey of events from the beginning of World War I to the present. Special emphasis given to the economic, political, social, diplomatic, and intellectual trends of 20th-century Europe.

430A History of Science: Ancient to Renaissance (3)
An examination of the origin and development of western science and its role in culture from the third millenium B.C. through the beginnings of the Scientific Revolution of the 16th and 17th centuries. The hellenic, hellenistic and later medieval periods will receive special attention.

430B History of Science: Copernicus to the Present (3)
A study of the development of science from the 16th century to the present. Particular

emphasis will be placed on the scientific revolutions of the 17th and 20th centuries. The interaction between science, technology and culture will be discussed in some detail.

432 Germany Since 1648 (3)

The evolution of Germany from the Peace of Westphalia to the present. Emphasis is placed on political, social, economic, diplomatic and cultural trends in the 19th and 20th centuries.

434A Russia to 1890 (3)

An analysis of the historical developments from the establishment of the Russian state at Kiev through the great reforms, the revolutionary movement and reaction of the 19th century. Emphasis is placed upon the shaping of contemporary Russia.

434B The Russian Revolutions and the Soviet Regime (3)

An evaluation of the 1905 and 1917 revolutions and the subsequent consolidation of power under the Communist regime. Chief emphasis is placed upon the continuity and change in Russian social, political, cultural institutions and foreign policy effected by the impact of Marxist-Leninist-Stalinist ideology.

436 The Balkans (3)

The Balkan peoples from the Middle Ages through the Ottoman Conquest to the present. Emphasis is placed on the role religion, nationalism, and communism have played in the development of modern Balkan consciousness.

437 East Europe (3)

The political and social history of the central East European peoples.

439 History of Spain (3)

Development of Hispanic civilization from the earliest times to the present.

450 Change in Contemporary Latin America (3)

An analysis of political, social and economic change in present-day Latin America.

451 The Andean Nations (3)

The social history of Ecuador, Peru, Bolivia and Chile.

452A Brazil to 1889 (3)

The development of Brazil from the beginning of the colonial period through the overthrow of the Brazilian monarchy in 1889. The emergence and development of a "colonial" economy and the contribution of the African, Amerindian, and Portuguese to Luso-Brazilian civilization.

452B 20th-Century Brazil (3)

The historical development of Brazil from 1889 to the present. Equal attention is given to social, economic and cultural trends and to the nation's political evolution. Approximately 40 per cent of the course focuses on Brazil after 1945.

453A Mexico to 1910 (3)

A history of Mexico from the pre-Columbian period to 1910. The course stresses the Indian heritage, the impact upon the native civilizations of the Spanish Conquest and the blending of Hispanic institutions with those of the first Mexicans.

453B Mexico Since 1910 (3)

A study of the background of the Mexican Revolution of 1910 and the revolution itself from 1910 to 1921 stressing the political, economic, and social features; special attention will be paid to the Revolution as the first of the great upheavals of the 20th century.

455 Contemporary Africa (3)

African history since 1945. Problems preceeding independence, postindependence, internal and external problems concerning economics, politics, boundaries, pan-Africanism, apartheid, racial conflicts and others.

456 History of West Africa (3)

Major themes of West African history, including development of legitimate trade and states, colonialism, nationalism and post independence achievements and problems.

458A Southern Africa from Earliest Times to the 20th Century (3)

A study of the culture and history of the indigenous peoples of southern Africa; and the development and impact of European interests in this area with particular emphasis on the history of South Africa to the Union of 1910.

458B Southern Africa in the 20th Century (3)

A survey of 20th-century developments in the Union (Republic) of South Africa, Central Africa (the Rhodesias and Nyasaland) and the Portuguese colonies with emphasis on the political, economic and social ramifications of race relations.

460 Problems of the Contemporary Far East (3)
A study of the post-World War II history of East, South and Southeast with emphasis upon problems of nationalism, communism and economic development.

462A History of China (3)
Chinese history from ancient times to the middle of the 17th century, with special attention to the development of society, thought, economy and political institutions.

462B History of China (3)
Chinese history from the middle of the 17th century to the 1950s. A study of China's internal developments and foreign intrusion, with special attention to the rise of modern Chinese nationalism and intellectual developments in the Republican period, as well as the attempts at modernization and the triumph of communism.

462C China Since 1949 (3)
History of China from 1949 to the present. A study of the Communist Party, political institutions, ideology, economic modernization and foreign relations of China.

463A History of Japan (3)
A study of the social, political, and economic history of Japan until 1868, with emphasis upon the Tokugawa era.

463B History of Japan (3)
A study emphasizing the rise of the modern Japanese state, Japanese imperialism and the postwar era.

464A History of Southeast Asia to 1850 (3)
A study of Southeast Asia since early historical times to the establishment of the colonial empires of the West in the mid-19th century.

464B History of Southeast Asia, 1850-1945 (3)
A study of Southeast Asia under the impact of the imperialism and the effects of the Pacific War on the European empires.

464C History of Contemporary Southeast Asia (3)
A study of Southeast Asia since the Pacific War to the present. Emphasis will be placed on the problems of the area and American involvement in Southeast Asia.

465A History of India (3)
A survey of the history of the Indian subcontinent from ancient times to the fall of the first Islamic empire in India, 1526. In addition to political developments, the course includes an examination of evolving religious institutions: Hinduism, Buddhism, class and caste.

465B History of India (3)
A survey of the history of the Indian subcontinent from the beginning of the Mughul Empire, 1526 to the Indian Mutiny of 1857. The course includes an examination of European intrusions and the crystallization of British supremacy in India.

465C History of India (3)
A survey of the history of India from 1857 to 1947 emphasizing India's struggle for independence.

466A The Arab Ascendancy (3)
Events transpiring in the Middle East from the rise of Islam to the Mongol invasions of the 13th century; the impact of Islamic civilization upon Middle East society.

466B Islamic Imperial Age (3)
The post-caliphal period with emphasis on the Mongol invasions of the Middle East and their effects; early modern Muslim empires—Ottoman, Safavid and Moghul—up to A.D. 1800.

467 The Middle East in the 19th Century (3)
Western penetration of the Middle East and the reaction to it, modernization, the growth of nationalist movements and revolutionary disturbances ending with World War I.

468 Middle East in the 20th Century (3)
A study of the social, political and economic changes taking place in the Middle East primarily since World War I. Where possible, the Middle East will be treated as a whole and viewed through a topic-oriented approach.

469 Intellectual and Cultural History of the Middle East (3)
Major Muslim achievements in the social and natural sciences, belles-lettres, theology and philosophy, art and architecture from the advent of Islam to the 20th century.

470 American Colonial Civilization (3)
Prerequisite: History 170A or consent of instructor. This course analyzes the creation of

societies in English North America from 1607-1754, stressing the emergence of economic, social and political patterns and structures in a maturing Anglo-American culture.

471 The United States from Colony to Nation (3)

Prerequisite: History 170A or consent of instructor. This course analyzes and describes the social, economic, political and intellectual developments in 18th century America, stressing the Anglo-American imperial problems leading to the revolution, the origins of American nationalism, the social structure of the new nation, the formation of the Constitution and the rise of a party system.

472 Jeffersonian Themes in American Society, 1800-1861 (3)

Prerequisite: History 170A or consent of instructor. Analyzes Jeffersonian values and their impact upon the social, political and cultural life of the nation during the era of their greatest relevance.

473 Democracy on Trial 1845-1877 (3)

Prerequisite: History 170A or consent of instructor. The study of America's "great national crisis" and the impact of slavery, civil war and national reconstruction upon the democratic process of the republic.

474 The United States and Industrial Organization (1876-1914) (3)

The organization of American industry and its impact upon American life. Special consideration is given to the populist and progressive reform movements.

475 America Comes of Age, 1914-1945 (3)

A multi-topic analysis of major trends in U. S. domestic policy, foreign policy, economy and society from World War I through World War II. Course will concentrate on conflicting values and ideals of domestic policy and U. S. role in world affairs.

476 Age of Power, Affluence and Anxiety Since 1945 (3)

Multi-topic analysis of U. S. History from 1945 to the present stressing the interrelationship of foreign policy, economic prosperity, domestic tensions and protest movements.

479 The Urbanization of American Life (3)

The historical development of urban life in America with special emphasis on the colonial town, the western town and the industrial city.

481 Westward Movement in the United States (3)

A survey of the expansion of the United States population and sovereignty from the eastern seaboard to the Pacific, colonial times to 1900, and a history of regional development during the frontier period.

482A History of Business in American Society (3)

The course explores the interaction of social and economic factors upon each other in the development of American society. Special attention is given to the role of business and labor in economic change. The first semester covers the development of a colonial economy and the early national economy.

482B History of Business in American Society (3)

The course continues to explore the interaction of social and economic factors upon each other in the development of American society beginning with the "takeoff stage of economic development" and ending with contemporary America. Special attention is given to the role of business and labor in economic change.

483 American Religious History (3)

Prerequisite: upper division standing. The vitality and creativity of American religious life and the proliferation of religious organizations as the result of the transplanting of European Christianity and its modification in the new environment.

484A American Constitutional History to 1865 (3)

Prerequisite: History 170A, English and colonial origins, the growth of democracy, the slavery controversy, and the sectional conflict as they reflect constitutional development.

484B American Constitutional History from 1865 (3)

Prerequisite: History 170B. Constitutional problems involved in the post-Civil War era, the expansion of business, World War I, the New Deal, World War II, and civil rights in the postwar era.

485A United States Foreign Relations to 1900 (3)

A comprehensive survey of the foreign relations of the United States from the beginning of the nation until 1900. Particular attention is given to bases of policy, critical evaluation of major policies and relationships between domestic affairs and foreign policy.

485B United States Foreign Relations from 1900 (3)
Relations from 1900 to the present. An analysis of the rise of the United States as a world power in the 20th century with special emphasis on the search for world order and the diplomacy of the atomic age.

486A United States Cultural History (3)
A study of the social and intellectual development of the United States from the Puritans to the Civil War.

486B United States Cultural History (3)
A study of the social and intellectual development of the United States from the Civil War to the present.

487A History of Politics in American Society (3)
This course traces political developments from the Colonial Period to the end of the Civil War. Its primary focus is upon political patterns of behavior, institutional development and the response of the American political system to changing social demands and needs.

487B History of Politics in American Society (3)
This course traces political developments from Reconstruction to Lyndon Baines Johnson. Its primary focus is upon political patterns of behavior, institutional development and the response of the political system to changing societal demands and needs.

488A American Negro From Slavery to Jim Crow (3)
A history of black Americans from African backgrounds through the era of slavery and the Civil War to the post-Reconstruction era.

488B American Negro Since 1890 (3)
History of black Americans from Booker T. Washington to present, stressing both their culture and role in American life and the issues involved in their relations with other segments of the population in various regions.

489 The Mexican-American in the Southwest (3)
Historical role of the Mexican-American in the Southwest stressing the cultural uniqueness, contributions, with special emphasis upon migration, education, and economic changes since 1945.

490 Senior Research Seminar (3)
Directed research seminar with class discussions applied to specific topics and areas as schedule and staff allow. Designed to give students experience in original research and writing. Required of all history majors.

491 Proseminar in Special Historical Topics (3)
Intensive study of trends, phenomena, themes or periods of history involving occasional lecture, discussion, directed reading, and student research.

492 Community History (3)
A study of the historical development of communities in general, and of the Orange County area in particular. Special emphasis on techniques of gathering and processing local historical data, including oral interviews and other archival materials.

493 Oral History (2)
Utilization of tape recorded interviews to document significant events in 20th-century history. Training will be given in interviewing techniques, tape recording interviews and historical editing of the typed transcripts of interviews. May be repeated for a total of six units if student wishes to pursue a different emphasis.

494 Special Research Techniques (3)
Introduces student to specialized techniques applicable to a particular field of historical research, such as the use of nonliterary resources, quantitative methods, etc. Designed to provide experience in unusual kinds of original historical research.

495 Colloquium in History (3)
Interpretation and analysis of significant documents and works of history aimed at broad synthesis and mastery of major interpretations in an area. Involves extensive directed reading and discussion. Themes will vary according to instructor.

498 History Internship (3)
The internship program offers students community work experience directly related to the history academic program. The interns gain a more complete education by working, usually without pay, outside the university for 10 hours each week of the semester. This course may only be used in the upper division elective section of the major.

499 Independent Study (1-3)
Open to advanced students in history with consent of department chair. May be repeated for credit.
501 Seminar in the Content and Method of History (3)
Prerequisite: consent of instructor.
505 Seminar in Recent Interpretations in History (3)
Prerequisite: consent of the instructor.
520 Seminar in European History (3)
Prerequisite: consent of the instructor.
550 Seminar in Latin American History (3)
Prerequisite: consent of the instructor.
560 Seminar in Afro-Asian History (3)
Prerequisite: consent of the instructor.
570 Seminar in American History (3)
Prerequisite: consent of the instructor
585 Seminar in the History of United States Foreign Relations (3)
Prerequisite: consent of the instructor.
590 History and Historians (3)
Prerequisite: consent of instructor. A study of the writings, personalities, and philosophies of representative historians from Herodotus to the present.
598 Thesis (3 or 6)
Prerequisite: consent of instructor. May be repeated for credit.
599 Independent Graduate Research (1-3)
Open to graduate students in history with consent of department chair. May be repeated for credit.

DIVISION OF LIBRARY SCIENCE

FACULTY
Doris Banks
Division Director

Al Baker, Dorothy Currie, Chester Gough, Joseph Palmer, Michael Sadoski, Patrick Sanchez, Taverekere Srikankaiah (Kanti)

PART-TIME
Harriett Covey, Herbert Hoffman, Raymond Holt, Carolyn Johnson, Ruth Nycum, Harry Rowe, Kathryn Tucker, Shirley Woods

MASTER OF SCIENCE IN LIBRARY SCIENCE

The Division of Library Science provides graduate education for librarianship with a primary focus on the basic principles of library service. The program encompasses a coordinated plan of graduate studies, which emphasizes the foundations of library science together with a specialization such as school, public, academic and special librarianship. These studies provide background for employment as librarian as well as serve for incentive for further intellectual growth and as preparation for further academic work.

Prerequisites
An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures).

A student who meets the requirements for conditionally classified graduate standing, as well as the following requirements, may be admitted as a classified graduate upon the development of an approved study plan: (1) an academic major or equivalent; (2) completion of one year's employment in a library with responsibilities satisfactory to the advisers or successful completion of the upper division course, Library Science 400, Introduction to Bibliographic Research, or its equivalent; (3) satisfactory performance on the aptitude test of the Graduate Record Examination; (4) letters of recommendation from two qualified persons; and (5) satisfactorily complete an interview.

Study Plan

The Master of Science in Library Science requires a minimum of 24 units of approved graduate work in library science plus six units of approved work for graduate credit in an area of concentrated study and either completion and acceptance by the faculty of the Division of Library Science of a written thesis, a project, or successful performance in a comprehensive examination.

Six units of required study shall be seminars on library topics, such as indexing and abstracting, theories of bibliographic control, information systems, and six units shall be electives in an area of concentration.

Prior to completion of the degree program the student will be required to demonstrate reading capability in one foreign language, either by evidence of two years' college or university work in the language or by passing a reading facility examination. The student will also be expected to demonstrate proficiency in basic computer programming and applications, either by evidence of completion of a course such as Quantitative Methods 265, Computer Programming and Applications, or Quantitative Methods 289, Computer Science for the Social Sciences or by passing an examination.

Each student will develop an individual program of studies in consultation with an adviser from the Division of Library Science.

See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin*.

School Librarianship Specialization

The courses for the credential program and the foundation courses for the M.S.L.S. are Library Science 500, 501, 502, 503 and 504. The addition of three units in multimedia or instructional materials such as Library Science 540, 541 or 525 and six units of electives such as Library Science 537, selection and use of materials for children and young adults, Comparative Literature 314, The Oral Tradition in Literature, and English 433, Children's Literature, and 90 hours of supervised fieldwork in the school library would meet the requirements for specialized preparation applicable to the standard teaching credentials. This will authorize a teacher to serve as a school librarian. The minimum coursework required for the specialized preparation is 24 units and the minimum for the master's degree with a specialization in school librarianship is 30 units.

LIBRARY SCIENCE COURSES

314 The Oral Tradition in Literature (3)

(Same as Comparative Literature 314)

400 Introduction to Bibliographic Research (3)

A study of literature searching for advanced research problems including bibliographic form and documentation. Exploitation of the information content of library card catalogs, trade bibliographies, indexes, abstracts and reference literature. Abstracting, annotating and critical reviewing are touched.

500 Principles of Librarianship (3)

Prerequisite: graduate standing or consent of instructor. Consideration of libraries in contemporary society. History of libraries, development of objectives of library service, identification and definition of user communities and their needs, survey of professional associations, interrelationships within library organization.

501 Library Collection Development (3)

Prerequisite: Library Science 500. The principles of a library acquisitions program developed from an examination of methods of bibliographic control. Publishers and publishing and other factors of the book trade and their influence on the development of an efficient order department.

502 Organization and Operation of Libraries (3)

Prerequisite: Library Science 500. An introduction to administrative theories and principles and their implications and applications to managerial activities in all kinds of libraries.

503 Organization of Information for Retrieval (3)

Theory and principles of classification, indexing, subject headings and cataloging and a survey of systems for storing and retrieving information. Preferred to be taken concurrently with Library Science 504 as early as possible in the study plan. (2 hours lecture, 2 hours activity)

504 Theories of Readers' Services (3)
A study of the history, theory and principles of reference service and information retrieval, of national and trade bibliographical tools, and of specialized reference tools; the identification of requesters' needs, and the analysis of research techniques in special subject areas. (2 hours lecture, 2 hours activity)

505 Research in Librarianship (3)
Prerequisite: three of the 500-level required courses. The scientific method and social science research methodology applied to library and information problems, focusing on library research and its accomplishments and evaluations of current research activities.

520 Seminar on Systems Analysis in Libraries (3)
Prerequisite: Library Science 500 or consent of instructor. Analytical techniques drawn from systems analysis and industrial engineering applied to technical processing, circulation control, acquisitions and the development of library service models.

521 Seminar on Information Systems (3)
Prerequisite: Library Science 500 or consent of instructor. Examination of information systems in business and corporate, scientific and governmental applications. Designs of local, national and international services are developed in theoretical models according to measured needs.

522 Seminar on Current Problems in Technical Processing (3)
Prerequisite: Library Science 503 or consent of instructor. Implications of current trends in automation and cooperative systems viewed in the light of changing needs for library service and for information.

523 Seminar on Indexing and Abstracting (3)
Prerequisite: Library Science 503 or consent of instructor. Investigation of the theoretical and functional aspects of the approaches to the sources of information by individual research efforts in various fields. Current practices of commercial, governmental and society sponsored programs.

524 Seminar on Theories of Bibliographic Control (3)
Prerequisites: Library Science 503 and 504 or consent of instructor. Studies in the theoretical bases of systems for the organization and retrieval of information in all forms.

525 Seminar on Information and Instructional Materials (3)
Prerequisites: Library Science 500 and 501 or consent of instructor. Focuses on organizing and implementing media programs of wide application. Special attention to problems, organization of materials, physical environment, federal support programs and modern technology. Includes field trips to outstanding media centers in the area.

526 Seminar on Selected Topics (3)
Prerequisite: graduate standing or consent of instructor. Discussion of contemporary issues in library service such as libraries of the future, library service for the disadvantaged, intellectual freedom. Topics chosen will be described and announced to library science majors and in local library associations and institutions. May be repeated.

527 Seminar on Library and Society (3)
Prerequisite: Library Science 500 or consent of instructor. Task oriented group case study involving the investigation of one library's structure and its relationship with its clientele. The focus is on group process, an analog for professional study group and committee action.

530 Introduction to Information Science (3)
Basic introduction to the nature of information science and technology. Fundamental concepts of information handling; analysis and design of information systems; evaluation of retrieval effectiveness in library systems.

531 Data Processing for Library Applications (3)
Prerequisite: graduate standing. The devices and methods of the technology of data processing applied to particular library functions with a management system approach underlined throughout. The management and planning of automation projects is stressed.

532 History of Libraries and Information Media (3)
Prerequisite: graduate standing. Historical survey of the formation of libraries, from the beginnings in the archival collections of ancient Mesopotamia. The varieties of books, records and documents which have constituted library collections, and the varying importance of libraries in succeeding ages.

533 Non-Book Information Handling (3)
Prerequisites: Library Science 503 and 504 or consent of instructor. The selection, cataloging, retrieval and use of the many types of documents, films, recordings and other forms of printed and produced information carriers in the various library service entities. Both alphabetic and coded information sources are considered.

536 Scientific and Technical Information (3)
Observation and evaluation of current techniques in special libraries for obtaining, announcing and distributing printed, near-print and non-printed materials. Development of a model system for improved information services.

537 Selection and Use of Materials for Children and Young Adults (3)
The examination of selection aids used to evaluate print and non-print materials, the construction of collection objectives and selection policies, and the development of programs and services for young people.

538 History of Books and Printing (3)
Historical survey of the many written communication devices. North American picture writing, Mesopotamian clay tablets, wax tablets, leather and papyrus books of the classical world through medieval manuscripts to modern phototypesetting and photo-offset.

539 Library Problems: Selected Topics (3)
A course concerned with the role of the library/media center in contemporary education. It consists of a survey of current literature which requires regular class participation, following a structure to be established by the class.

540 Development of Prototype Material (3)
A course designed as an overview for persons that will be involved in the assessment, evaluation, production and use of various media used in instruction. The course is concerned with the process of message design, media choice, and production.

541 Principles of Library Instructional Media (3)
Prerequisite: Library Science 540. The principles of mediated materials in libraries for individual use and for classroom instruction. Selection, evaluation, and use of mediated materials with emphasis on media characteristics and behavioral objectives as they relate to information retrieval.

550 Literature of Selected Subjects (3)
Prerequisites: Library Science 400 or equivalent and 504. A study of the information resources including reference aids in various distinct fields of knowledge, such as humanities, social sciences, maps, law. May be repeated.

574 Problems in Government Documents Information (3)
Examination and use of the official publications of the United States, international organizations and Great Britain. Includes discussion of acquisition, organization and reference use of these publications.

597 Project (3)
Prerequisite: graduate standing and consent of division director. Preparation and completion of an approved project.

598 Thesis (3)
Prerequisite: graduate standing and consent of division director. The writing of a thesis based on original research, library study or an educational project, and its analysis and evaluation.

599 Independent Graduate Research (1-3)
Prerequisite: graduate standing and consent of division director. May be repeated for credit.

749 Fieldwork School Libraries (2)
Prerequisite: completion of or concurrent enrollment in all of the 24 units required for the credential. Consists of 90 hours of field experience in a school library or media center supervised by a credentialed librarian. Enrollment requires preliminary filing and approval.

DEPARTMENT OF LINGUISTICS

FACULTY
Alan Kaye
Department Chair

Geraldine Anderson, David Feldman, James Santucci, Peter Solon

Linguistics is the scientific study of language—its nature and development, its universal

properties, its diversified structures and their dialectal variants, its systems of writing and transcription, its cultural role in the speech community, and its application to other areas of human knowledge. As such, it is concerned with the multiple aspects of human communicative behavior which encompasses thought, symbolization, language, meaning, acoustics, perception and the physiological processes of utterance and audition.

The interdisciplinary aspects of this study are reflected in the organization of the program which offers a core of general linguistics courses and draws upon linguistically-related courses in other departments.

BACHELOR OF ARTS IN LINGUISTICS

This program is designed for students with an exceptional interest in and aptitude for the study of the systems of human communication. It enables the undergraduate student to understand the essential relationships between language and thought and language and culture; to gain familiarity with the structure of foreign languages as well as English; to observe several types of linguistic structures; and to become conversant with the historical study of language and formal techniques and theoretical foundations of linguistic analysis. The program will enable the student with linguistic and philological interests to grasp the scope of the field and to determine more accurately the most meaningful concentrations in graduate study.

Language Requirement

One year of a non-Indo-European language, ancient language or classical language subject to the approval of the adviser.

Lower Division Requirements

Linguistics 106 Language and Linguistics (3)
Anthropology 202 Introduction to Cultural Anthropology (3)

Upper Division Requirements (minimum of 30 units)

317 Course in a modern foreign language (3)
Linguistics 351 Introduction to Linguistic Phonetics and Phonology (3)
Linguistics 406 Descriptive Linguistics (3)
Linguistics 410 Language and Culture (3)
Linguistics 430 Introduction to Historical Linguistics (3)

Three electives (or more) from the following:

Education 312 Human Growth and Development (3)
Education 380 The Teaching of Reading (3)
English 302 Introduction to English Language (3)
English 303 Structure of Modern English (3)
English 490 History of the English Language (3)
French, German, Russian or Spanish 400 course (3)
French, German, or Spanish 466 course (3)
Linguistics, any undergraduate course other than those listed as required above
Mathematics 304 Mathematical Logic (3)
Mathematics 305 Elements of Set Theory (3)
Philosophy 368 Symbolic Logic (3)
Philosophy 450 Seminar in Philosophy of Language (3)
Physics 405 Acoustics (4)
Psychology 415 Cognitive Processes (3)
Quantitative Methods 364 Computer Logic and Programming (3)
Quantitative Methods 486 Automata Theory (3)
Quantitative Methods 487 Artificial Intelligence (3)
Speech Communication 304 Message Reception and Analysis (3)
Speech Communication 340 Speech Science (3)
Speech Communication 341 Introduction to Phonetics (3)

Students must consult with an adviser in linguistics before establishing their individual programs of study. Other courses in the university may be taken as an elective with the permission of the adviser.

MASTER OF ARTS IN LINGUISTICS

The M.A. in Linguistics is designed for students who have exceptional interest in and aptitude for the study of the systems of human communication, reinforced by undergraduate

study in linguistics and allied areas, such as foreign languages, English language, anthropology, speech communication and related areas in psychology and philosophy. It enables the graduate student to study in depth the position and function of human communication systems in the development of civilization; to understand more fully the essential relationships between thought, language and culture; to deepen mastery of the structure of foreign languages as well as English; to work intensively with several types of linguistic structures with special attention to non-Indo-European languages; and to increase expertise in the historical study of language and formal techniques and theoretical foundations of linguistic analysis.

The core courses of the program are devoted to an in-depth consideration of descriptive, historical and applied linguistics. The remainder of the program combines advanced work in the theory of phonological; morphological and syntactical analysis; articulatory and experimental phonetics; semantics; lexicology; dialectology; language typology; and field methods, in which the procedures of the linguist working under field conditions are demonstrated by the analysis of several languages elicited from informants. A variety of approaches to descriptive analysis and several theoretical points of view including generative grammar, transformational analysis and prosodics are presented. A series of courses on the structure of individual languages, both ancient and modern, provides opportunities for applying the general principles of structural analysis and for establishing linguistic data by elicitation from informants and analysis of written records. General courses in comparative linguistics and comparison within individual language families review methods of establishing genetic relationships among languages. The geographical diffusion of linguistic features and problems of language contact are studied by examining areal groupings of genetically unrelated languages. The relationship between linguistics and other disciplines and the application of the techniques, findings, and insights of that science to such activities as language teaching are treated in interdisciplinary courses and seminars.

The aim of the graduate program in linguistics is to provide thorough and well-balanced training for practice and research in the several areas of linguistic studies and to prepare qualified students for careers in the communication sciences and allied disciplines.

Admission to Graduate Standing: Conditionally Classified
An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures).

Admission to Graduate Standing: Classified
A student who meets the requirements for conditionally classified graduate standing, as well as the following requirements, may be admitted as a classified graduate upon the development of an approved study plan: a major in linguistics consisting of 24 upper-division semester credit hours, or equivalent, in the field, with grades testifying to above-average scholarship. Those having degrees with other related majors may be admitted if they have completed the following courses or their equivalents. These prerequisites may be fulfilled concurrently with graduate courseowrk in the program.

Linguistics 351 Introduction to Linguistic Phonetics and Phonology (3)
Linguistics 406 Descriptive Linguistics (3)
Linguistics 410 Language and Culture (3)
Linguistics 430 Introduction to Historical Linguistics (3)

Knowledge of one foreign language is required (equivalent of FL 317 course). Students without coursework in a foreign language may demonstrate proficiency by a score of average or better on the MLA-ETS Proficiency Examination for Advanced Students. Work toward fulfillment of this requirement may be taken concurrently with graduate work in linguistics.

Modifications of certain prerequisite requirements may be permitted in exceptional circumstances.

Study Plan Course requirements *Units*

Coursework in descriptive and historical linguistics 13
Linguistics 501 Research Methods and Bibliography (1)
Linguistics 505 Phonological Analysis (3)
Linguistics 507 Grammatical Analysis (3)

Linguistics 508 Theories of Syntax (3)
Linguistics 530 Historical Linguistics (3)

Coursework selected from any one of the following six areas of subspecialization, including other courses in the university with the approval of the adviser ... 9

Applied Linguistics
English 302 Introduction to English Language (3)
English 303 The Structure of Modern English (3)
English 570 Graduate Seminar: Language Studies (3)
Foreign Languages Ed 520, Advanced Seminar in Applied Linguistics (3)
French 466 Introduction to French Linguistics (3)
French 599 Independent Graduate Research (1-3)
German 466 Introduction to German Linguistics (3)
German 599 Independent Graduate Research (1-3)
Linguistics 305 American Dialects (3)
Linguistics 403 Speech and Language Development (3)
Linguistics 409 Anthropological Linguistics (3)
Linguistics 411 Bilingualism (3)
Linguistics 412 Sociolinguistics (3)
Linguistics 443 Principles of Teaching English to Speakers of Other Languages (3)
Linguistics 529 Graduate Seminar: Linguistic Ontogeny (3)
Linguistics 565 Graduate Seminar: Major Language Families (3)
Linguistics 575 Graduate Seminar: Current Issues in Linguistics (3)
Linguistics 584 Linguistics and Reading (4)
Linguistics 596 Internship in Applied Linguistics (3)
Linguistics 599 Independent Graduate Research (1-3)
Spanish 466 Introduction to Spanish Linguistics (3)
Spanish 467 Dialectology: Current Trends in Modern Spanish (3)
Spanish 468 Spanish-English Contrastive Analysis (3)
Spanish 599 Independent Graduate Research (1-3)

Anthropological Linguistics
Anthroplogy 599 Independent Graduate Research (1-3)
Linguistics 407 California Indian Languages (3)
Linguistics 408 The Uralic Languages (3)
Linguistics 409 Anthropological Linguistics (3)
Linguistics 411 Bilingualism (3)
Linguistics 412 Sociolinguistcs (3)
Linguistics 565 Graduate Seminar: Major Language Families (3)
Linguistics 575 Graduate Seminar: Current Issues in Linguistics (3)
Linguistics 592 Field Methods (3)
Linguistics 593 Graduate Seminar: Linguistic Typology (3)
Linguistics 595 Problems in Field Linguistics (3)
Linguistics 599 Independent Graduate Research (1-3)

Analysis of Specific Language Structures
French 466 Introduction to French Linguistics (3)
German 466 Introduction to German Linguistics (3)
Spanish 466 Introduction to Spanish Linguistics (3)
French 500 Graduate Seminar: Advanced Structure and Style (3)
German 500 Graduate Seminar: Advanced Structure and Style (3)
Spanish 500 Graduate Seminar: Advanced Structure and Style (3)
French 510 Phonology (3)
German 510 Phonology (3)
Spanish 510 Phonology (3)
French 530 Historical Linguistics (3)
German 530 Historical Linguistics (3)
Spanish 530 Historical Linguistics (3)
French 520 Old French (3)
English 480 Seminar in Old English (3)
English 570 Graduate Seminar: Language Studies (3)
English 599 Independent Graduate Research (1-3)

Spanish 599 Independent Graduate Research (1-3)
French 599 Independent Graduate Research (1-3)
German 599 Independent Graduate Research (1-3)
Linguistics 407 California Indian Languages (3)
Linguistics 408 The Uralic Languages (3)
Linguistics 532 Indo-European Linguistics (3)
Linguistics 565 Graduate Seminar: Major Language Families (3)
Linguistic 575 Graduate Seminar: Current Issues in Linguistics (3)
Linguistics 592 Field Methods (3)
Linguistics 595 Problems in Field Linguistics (3)
Linguistics 596 Internship in Applied Linguistics (3)
Linguistics 599 Independent Graduate Research (1-3)

Experimental Phonetics
Linguistics 402 Advanced Phonetics (3)
Linguistics 540 Seminar in Experimental Phonetics (3)
Linguistics 575 Graduate Seminar: Current Issues in Linguistics (3)
Linguistics 599 Independent Graduate Research (1-3)
Physics 405 Acoustics (4)
Speech Communication 543 Major Problems in Speech Pathology and Audiology (3)
Speech Communication 599 Independent Graduate Research (1-3)

Communication and Semantics
Anthropology 599 Independent Graduate Research (1-3)
Linguistics 375 Introduction to Philosophy of Language (3)
Linguistics 409 Anthropological Linguistics (3)
Linguistics 411 Bilingualism (3)
Linguistics 412 Sociolinguistics (3)
Linguistics 417 Introduction to Psycholinguistics (3)
Linguistics 504 Graduate Seminar: Semantics (3)
Linguistics 515 Graduate Seminar: Psycholinguistics (3)
Linguistics 529 Graduate Seminar Linguistic Ontogeny (3)
Linguistcs 575 Graduate Seminar: Current Issues in Linguistics (3)
Linguistics 584 Linguistics and Reading (4)
Linguistics 599 Independent Graduate Research (1-3)
Philosophy 450 Seminar: Philosophy of Language (3)
Speech Communication 599 Independent Graduate Research (1-3)

Disorders of Communication
Linguistics 403 Speech and Language Development (3)
Linguistics 417 Introduction to Psycholinguistics (3)
Linguistics 515 Graduate Seminar: Psycholinguistics (3)
Linguistics 529 Graduate Seminar: Linguistic Ontogeny (3)
Linguistics 540 Seminar in Experimental Phonetics (3)
Linguistics 575 Graduate Seminar: Current Issues in Linguistics (3)
Linguistics 599 Independent Graduate Research (1-3)
Speech Communication 441 Speech Pathology: Nonorganic Disorders (3)
Speech Communication 443 Speech Pathology: Organic Disorders (3)
Speech Communication 463 Audiology (3)
Speech Communication 543 Seminar: Major Problems in Speech Pathology and Audiology (3)
Speech Communication 563 Seminar in Audiology (3)
Speech Communication 599 Independent Graduate Research (1-3)

Coursework in a related field	6
Linguistics 597 Project (2)	2
Total	30

A minimum of 15 units in 500-level courses is required. Also, satisfactory completion of written and oral comprehensive examinations will be required at the conclusion of the program.

The examinations may be repeated only once.

For further information, consult the graduate coordinator of the Department of Linguistics.

See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin.*

LABORATORY FOR PHONETIC RESEARCH

See description on page 21.

LINGUISTIC COURSES

106 Language and Linguistics (3)

A general introduction to the field of human communication. Specific topics include the nature of language, its origin and development; language in culture; the system of language; and language and thought.

207 Linguistic Typology (3)

Prerequisite: Linguistics 106, its equivalent or consent of instructor. An introduction to the typological classification of the languages of the world. Attention will be given to both earlier and contemporary classificatory systems.

301 Sanskrit (3)

An introduction to the Sanskrit language, emphasizing the acquisition of reading fluency. The *devanagari* script, phonology, morphology and syntax will be examined along with relevant points on Hindu culture and on the place of Sanskrit in the development of the Indo-European language family.

302 Sanskrit (3)

Prerequisite: Linguistics 301 or equivalent. Continuation of 301, concentrating on the intensive and extensive reading of Sanskrit texts. Special attention will be given to paleographic techniques and graphemics.

303 Sanskrit: Intensive Reading (3)

Prerequisite: Linguistics 302, its equivalent or consent of instructor. Designed to offer intensive training and experience in the reading and interpretation of classical Sanskrit and to further acquaint the student with the linguistic structure of the language.

304 Sanskrit: Intensive Reading (3)

Prerequisite: Linguistics 303, its equivalent or consent of instructor. Continuation of 303, concentrating on the following readings: *Upanisads, Bhagavad Gita,* the *Manava Dharma Sastra* and *Nalopakhyanam.*

305 American Dialects (3)

(Same as English 305)

351 Introduction to Linguistic Phonetics and Phonology (3)

Introduction to the nature and structure of sound systems in language, with a practical survey of analytic methods, phonetics, phonemics, distinctive features, acoustic and articulatory phonetics.

365 Introduction to Major Language Families (3)

A general introduction to the linguistic history and present structure of the world's major language families. Each semester a different language family will be studied and analyzed in terms of its synchronic and diachronic phonology, morphology, syntax and semantics.

366 Areal Linguistics (3)

Prerequisite: Linguistics 365 or consent of instructor. Introduction to the analysis and interrelationships among languages spoken in specific geographical regions regardless of their historical divergences. Each section will concentrate on a different language area.

375 Introduction to Philosophy of Language (3)

(Same as Philosophy 375)

402 Advanced Phonetics (3)

(Same as Speech Communication 402)

403 Speech and Language Development (3)

(Same as Speech Communication 403)

406 Descriptive Linguistics (3)

Introduction to the nature of human linguistic behavior. Phonological, morphological, and syntactic structures of languages are examined through the use of techniques developed for the description of such structures.

407 California Indian Languages (3)
(Same as Anthropology 407)
408 The Uralic Languages (3)
(Same as Anthropology 408)
409 Anthropological Linguistics (3)
(Same as Anthropology 409)
410 Language and Culture (3)
(Same as Anthropology 410)
411 Bilingualism (3)
Prerequisite: Linguistics 406 or equivalent. The study of the personal and social development of bilingual communities as reflected in the conflict between the language of the home and the language of the community.

412 Sociolinguistics (3)
Prerequisite: Linguistics 406 or equivalent. The study of social dialects in relation to the surrounding communities. Topics include social stratification, acculturation, language maintenance, standardization, language planning and language change.
417 Introduction to Psycholinguistics (3)
(Same as Psychology 417)

443 Principles of Teaching English to Speakers of Other Languages (3)
(Same as Foreign Languages Education 443)
475 Seminar: Current Issues in Linguistics (3)
Prerequisites: Linguistics 406 and 410, their equivalents, or consent of instructor. An intensive exploration of the latest research and development in linguistic theory, technique and methodology.
499 Independent Study (1-3)
Supervised projects in linguistics to be taken with consent of department chair as a means of meeting special curricular problems. Selection of topic to be studied varies with needs of the students enrolled. May be repeated for credit.

501 Research Methods and Bibliography (1)
Prerequisites: graduate standing and Linguistics 406, or equivalent. Introduction to principal books, periodicals, and collections in general linguistics, specific languages and related fields; techniques of preparing research papers and field reports in linguistics. To be taken concurrently with Linguistics 597.
504 Seminar: Semantics (3)
(Same as Speech Communication 504)
505 Phonological Analysis (3)
Prerequisite: Linguistics 351 and Linguistics 406 or consent of instructor. Study of various kinds of phonological systems that occur in languages. Emphasis on practical problems in the phonetic and phonemic analysis of selected language data. (Same as Anthropology 505)

507 Grammatical Analysis (3)
Prerequisite: Linguistics 406 or consent of instructor. The study of word formation and sentence construction in a variety of languages. Application of immediate constituent, tagmemic, and transformational analysis to selected linguistic data. (Same as Anthropology 507)

508 Theories of Syntax (3)
Prerequisite: Linguistics 507 or consent of instructor. Intensive and practical study of contemporary theories of grammar, with special emphasis on transformational, generative, logical and electromechanical bases and techniques of utterance analysis. (Same as Anthropology 508)
515 Graduate Seminar: Psycholinguistics (3)
Prerequisites: Linguistics 406 and 417 or equivalents. An examination of the behavioral, conceptual, motivational and social aspects of language, emphasizing recent developments in information theory, behavioral theory and linguistic theory as applied to human communication. (Same as Psychology 515)
529 Graduate Seminar: Linguistic Ontogeny (3)
Prerequisites: Linguistics 406 or consent of instructor. An intensive examination of the

development of language and linguistic systems in the human species and in the individual from the viewpoint of contemporary linguistic analysis and theory.

530 Historical Linguistics (3)
Prerequisite: Linguistics 430, its equivalent, or consent of instructor. The history of language, also including principles and techniques for the historical study and classification of individual languages and language families, writing systems, lexicostatistical methods and linguistic geography.

532 Indo-European Linguistics (3)
Prerequisites: Linguistics 406 and 430, their equivalents, or consent of instructor. Linguistic analysis of Proto-Indo-European. Attention will be given to its later development and spread.

540 Seminar in Experimental Phonetics (3)
(Same as Speech Communication 540)

565 Graduate Seminar: Major Language Families (3)
Prerequisite: Linguistics 406, its equivalent, or consent of instructor. The linguistic history and present structure of one of the world's major language families with collateral attention given to the relationships between the language family. May be repeated for credit.

575 Graduate Seminar: Current Issues in Linguistics (3)
Prerequisite: Consent of instructor. An intensive exploration of the latest research and development in linguistic theory, technique and methodology. May be repeated for credit.

584 Linguistics and Reading (4)
(Same as Education 584)

592 Field Methods (3)
Prerequisite: Consent of instructor. Methods of analysis and description of language structures. Data elicited from informants will be analyzed and described. Controlled study of an informant's language. (Same as Anthropology 592) May be repeated for credit.

593 Graduate Seminar: Linguistic Typology (3)
Prerequisites: Linguistics 406 or consent of instructor. Techniques, methods and criteria of comparing languages, dialects, or historical stages of languages and classifying them in terms of the basic elements of linguistic form which they represent. May be repeated for credit.

595 Problems in Field Linguistics (3)
Prerequisite: Linguistics 592 or consent of instructor. Advanced work in the methodology for determining the grammar of a previously unknown language through the use of a native informant.

596 Internship in Applied Linguistics (3)
Prerequisite: Linguistics 443 or consent of instructor. Designed to acquaint students with the practical application of linguistic theory to second language learning, particularly at the community college level. Individual supervision is provided by the faculty and cooperating individuals. Interns meet with the instructor by arrangement. May be repeated for credit.

597 Project (2)
Preparation and completion of an approved project. To be taken concurrently with Linguistics 501.

599 Independent Graduate Research (1-3)
Prerequisites: graduate standing and consent of department chair. May be repeated for credit.

METEOROLOGY

(Offered by the Department of Earth Science and the Department of Geography)

See departmental descriptions for the following courses:

Earth Science
210 Introduction to Meteorology (3)
330 Hydrology, Meteorology and Oceanography (4)
430 Advanced Studies in Meteorology and Oceanography (2)

Geography
323 Weather and Climate (3)
423 Physical Climatology (3)

DEPARTMENT OF PHILOSOPHY

FACULTY
L. Merrill Ring
Department Chair

Ernest Becker,* John Cronquist, David Depew, Craig Ihara, Gloria Rock, J. Michael Russell, Stephen Simon, Richard Smith, Frank Verges, Marjorie Weinzweig

BACHELOR OF ARTS IN PHILOSOPHY
The major in philosophy is designed to provide the undergraduate student with (1) information about the achievements of the world's outstanding philosophers in the analysis and resolution of philosophic issues, and (2) some measure of skill in analyzing and resolving such issues as they arise in his own areas of interest. Course requirements in philosophy are designed to provide both breadth and depth in exploring and analyzing philosophic concerns.

Requirements for the Major
1. A minimum of 36 units in philosophy.
2. *Required courses* (15 units):
   Philosophy 290 (3)
   Philosophy 291 (3)
   Philosophy 300 (3)
   Philosophy 301 (3)
   Philosophy 499 (3)

3. *Area requirements* (12 units, all of which must be upper division): Nine units from areas I, II and III (to include courses in at least two of these areas); three units from area IV:
   Area I—Ethics, Aesthetics, Value Theory: 310, 311, 345, 365, 444, 445
   Area II—Metaphysics, Epistemology: 370, 420, 425, 430, 440, 470
   Area III—Logic, Philosophy of Science: 368, 369, 375, 384, 385, 435, 468, 475
   Area IV—History of Contemporary Philosophy: 305, 323, 380, 497, 498

4. *Seminar requirement:* Three units to be met by any senior seminar not used to fulfill area requirements. (Senior seminars in philosophy are numbered between 444 and 498)

5. *Electives:* 6 units of philosophy courses, upper- or lower-division, which have not been used to meet requirements 2-4, above.

Recommended Work
A program in philosophy profits greatly through the study of literature, psychology and the social sciences. Students of philosophy are advised to supplement their studies in philosophy with coursework offered in these fields. Philosophy majors are urged to acquire proficiency in a foreign language.

Preparation for Graduate School
Students who are planning to attend graduate school in philosophy are urged to include in their programs, besides the required courses, as many as possible of the following:

Philosophy 310 and 444, Ethics
Philosophy 368 and 369, Logic
Philosophy 375, Philosophy of Language
Philosophy 380, Analytic Philosophy
Philosophy 420, Metaphysics
Philosophy 430, Epistemology
Philosophy 440, Philosophy of Mind

* University administrative officer

Transfer Credit
Work done at other institutions may be counted toward the major, subject to the rules of the university and the following departmental rules: (1) only senior seminars can fulfill the seminar requirement; (2) only upper-division work can fulfill upper-division requirements; (3) *in no case can more than six units of lower-division work taken at another institution count toward the major requirement of 36 units.*

MINOR IN PHILOSOPHY
Requirements for the Minor
1. A minimum of 21 units in philosophy.

2. A minimum of 12 upper-division units in philosophy.

3. A minimum of nine units from among the following courses: Philosophy 290, 291, 300, 301.

PHILOSOPHY COURSES

For more detailed course descriptions, consult the course guide which is available each semester at registration time in the Philosophy Department office.

100 Introduction to Philosophy (3)
An introduction to the nature, methods and some of the main problems of philosophy. Designed for freshmen and sophomores. Not a prerequisite for advanced courses.

101 Contemporary Moral Issues (3)
A critical inquiry in which philosophical techniques are brought to bear on such issues as the justification of civil disobedience, the morality of war and revolution, the nature and justification of violence, the legal enforcement of morality, and women's liberation.

110 Comparative Study of the World's Great Religions (3)
A study of man's religious impulse as viewed from the philosophical standpoint. An attempt will be made to analyze and to compare religious experience as expressed in Christianity, Judaism, Islam, Buddhism, Hinduism, etc. (Same as Religious Studies 110)

210 Logic (3)
Analysis of the various forms given to propositions and the basic requirements necessary for valid inference. Not recommended for philosophy majors or for students interested in mathematics or science. (See Philosophy 368)

250 People and Machines (3)
A conceptual investigation of ideas and activities which are pertinent to the notion of technology, e.g., determinism, causation, mechanism, the nature of thought and behavior (Same as Technological Studies 250)

290 History of Philosophy: Greek Philosophy (3)
The origins of Western philosophy in ancient Greece, and its development to the time of Socrates, Plato and Aristotle.

291 History of Philosophy: Medieval Philosophy (3)
Scholastic philosophy and its precursors in ancient thought.

300 History of Philosophy: Rationalism and Empiricism (3)
The rationalism of Descartes, Spinoza and Leibniz, and the empiricism of Locke, Berkeley and Hume.

301 History of Philosophy: Kant and the 19th Century (3)
The empiricistic and rationalistic influences on Kant, followed by a study of the major trends in 19th-century philosophy.

305 Contemporary Philosophy (3)
A survey and analysis of the main trends of 20th-century philosophy. Emphasis on such trends as pragmatism, linguistic analysis and existentialism.

310 Ethics (3)
An analysis of the problems of human conduct: motivation, valuing, norms, social demands and personal commitments.

311 Aesthetics (3)
An investigation into the conditions and the aims of art and aesthetic experience.

323 Existentialism (3)

An analysis of the meaning of existentialism in modern philosophy.

341 Assumptions of Psychotherapy (3)

An examination of some of the pecularily philosophical concepts and assumptions pertinent to the theory of psychotherapy, with emphasis on the Cartesian, the mechanistic and the deterministic assumptions of Freud.

343 Philosophy of Women's Liberation (3)

A critical examination of the basic value concepts and moral principles underlying such issues in the women's movement as: oppression of women, marraige as exploitation, sex stereotypes and femininity, sexuality, alternative family styles, the morality of abortion, and preferential hiring.

345 Political Philosophy (3)

Selected problems in political philosophy.

347 Selected Problems in Philosophy (3)

Significant contributions made to human culture through philosophic analysis. May be repeated with a different content for additional credit.

350 Oriental Philosophy (3)

A critical survey of major philosophical systems of India, China and Japan, including various schools of Buddhism, Confucianism and Taoism.

355 Legal Philosophy (3)

An examination of theories about the nature of various legal institutions and processes, and an analysis of the concept of law and important subsidiary concepts.

360 Philosophy of History (3)

A study of the metaphysical and the logical problems of history.

365 Social Philosophy (3)

An analysis and appraisal of theories about the nature of various social, political and legal institutions, and of arguments about what these institutions ought to be.

368 First Course in Symbolic Logic (3)

The recognition and construction of correct deductions in the sentential logic and the first-order predicate calculus.

369 Second Course in Symbolic Logic (3)

Prerequisite: Philosophy 368 or equivalent. Continuation of the study of the recognition and construction of correct deductions in the full first-order predicate calculus with identity and the calculus of descriptions. Detailed examination of axiomatized deductive systems of propositional calculus.

370 Philosophy of Religion (3)

An examination of the role of philosophy in shaping theological doctrine, in critically evaluating religious experience, in proving the existence of God, and in considering the issues of atheism and the existence of evil.

373 Philosophy in Literature (3)

Exploration of philosophical themes in literature. Emphasis on recent American novels, although British and continental authors will also be read and discussed.

375 Introduction to the Philosophy of Language (3)

An introduction to the major issues in semantical theory: truth, meaning, analytic-synthetic, semiotics. (Same as Linguistics 375)

380 Analytic Philosophy (3)

Prerequisite: six units in philosophy or consent of instructor. A detailed investigation of selected works of such 20th-century analytic philosophers as Russell, Moore, Wittgenstein, Strawson, Ryle and Quine.

382 Marx and Marxism (3)

An introduction to the writings of Marx and his followers in their philosophic aspect. Emphasis on theories of human nature, society and intellectual activity; conceptual tools for the analysis of phenomena; sources; and followers, critical or dogmatic.

384 Philosophy of the Natural Sciences (3)

Space, time and relativity; quantum mechanics, causality and real existence; laws, theories and models; topics in the history of science. Some facility in either mathematics or philosophy is presupposed. (Same as Physics 384)

385 Philosophy of the Social Sciences (3)

Methodological problems about psychology, sociology, anthropology, economics, political science and history. Objectivity and value judgments in social science; emergence; ex-

planation; reductionist and functionalist accounts. Some acquaintance with the social sciences is presupposed. (Same as Social Sciences 385)

399 Directed Study (1-3)

Prerequisite: approval of the department. Supervised individual study as an elective by philosophy majors or other students. May be repeated for credit with different content. May not be used to replace the 499 requirement for majors.

420 Metaphysics (3)

Prerequisite: six units in philosophy or consent of instructor. An examination of such philosophical problems as freedom and determinism, mind and body, time and becoming, causation, deity, substratum, personal identity.

425 Introduction to Phenomenology (3)

Prerequisite: six units in philosophy or consent of instructor. An investigation into the historical background and basic viewpoints which have provided a framework for philosophical research and study in the writings of Husserl, Heidegger, Sartre, and Merleau-Ponty.

430 Epistemology (3)

Prerequisite: six units in philosophy or consent of instructor. An investigation of the concepts of knowledge, belief and certainty, and a study of representative theories concerning man's knowledge of the external world, the past, and other minds.

435 Philosophy of Science (3)

Prerequisite: six units in philosophy or consent of instructor. An investigation of some logical features of scientific procedure, such as the problem of induction.

440 Philosophy of Mind (3)

Prerequisite: six units in philosophy or consent of instructor. Basic problems relating to the analysis of the concept of mind and such related issues as behavior, consciousness, and voluntary action.

442 Creativity: Psychophilosophic Theories (3)

Prerequisite: three units in philosophy or consent of instructor. Perspectives on the origins, the nature and the significance of creativity.

444 Seminar in Ethical Theory (3)

Prerequisite: six units in philosophy; Philosophy 310 recommended. Examination of alternative analyses of such concepts as right action, goodness, duty, and the justification of ethical beliefs. May be repeated with different content for additional credit.

445 Seminar in Value Theory (3)

Prerequisite: Philosophy 310 or consent of instructor. An investigation into the conditions, modes, levels, and criteria relevant to any systematic view of valuing.

450 Seminar in Oriental Philosophy (3)

Prerequisite: Philosophy 350 or consent of instructor. A detailed examination of some major figure or school in Indian, Chinese or Japanese thought. May be repeated with different content for additional credit.

457 Seminar in Ancient Philosophy (3)

Prerequisite: Philosophy 290 or consent of instructor. A detailed study of some major ancient philosopher, such as Plato or Aristotle, or of some school of ancient philosophy, such as stoicism. May be repeated with different content for additional credit.

465 Seminar on Law and Morals (3)

Prerequisite: consent of instructor. A critical examination of important concepts which bear on questions of responsibility in both law and morals. Such concepts include will, intention, freedom, negligence, recklessness, ignorance, mistake, act and cause.

467 Seminar in Continental Rationalism (3)

Prerequisite: Philosophy 300 or consent of instructor. A detailed examination of the works of some major rationalist, such as Descartes, Spinoza or Leibniz, or some school or phase of continental rationalism. May be repeated with different content for additional credit.

468 Seminar in Advanced Symbolic Logic (3)

Prerequisite: Philosophy 369 or equivalent. Detailed examination of axiomatized systems of deduction covering such areas as the propositional and predicate calculi and alternative systems of logic; topics in philosophical logic. May be repeated with different content for additional credit.

470 Seminar in Metaphysics (3)

Prerequisite: Philosophy 420 or 430 or 440, or consent of instructor. Detailed examination of some single concept, such as identity, person, time, causality, substance, understan-

ding, reality; or of some cluster of issues, such as thought and reality, freedom and determinism.

475 Seminar in the Philosophy of Language (3)

Prerequisite: six units in philosophy or consent of instructor. A detailed examination of problems in the theory of meaning and formal semantics.

477 Seminar in British Empiricism (3)

Prerequisite: Philosophy 300 or consent of instructor. A detailed study of some major British empiricist, such as Locke, Berkeley, or Hume, or of some school or phase of British empiricism. May be repeated with different content for additional credit.

487 Seminar in Modern Philosophy (3)

Prerequisite: Philosophy 301 or consent of instructor. A detailed study of some major modern philosopher, such as Kant, Hegel, Nietzsche or Mill, or of some aspect of modern philosophy (before 1900). May be repeated with different content for additional credit.

497 Seminar in Contemporary Analytic Philosophy (3)

Prerequisite: Philosophy 305 or 380 or consent of instructor. A detailed study of some work or works of such 20th-century analytic philosophers as Russell, Moore, Wittgenstein and C. I. Lewis. May be repeated with different content for additional credit.

498 Seminar in Existentialism and Phenomenology (3)

Prerequisite: six units of philosophy, including Philosophy 323 or 425, or consent of instructor. A detailed study of major contemporary continental philosophers such as Husserl, Heidegger, Sartre and Merleau-Ponty. May be repeated with different content for additional credit.

499 Independent Study (1-3)

Prerequisite: approval of the department. Such study is designed to develop greater competency in research. May be repeated for credit. No more than three units may be taken with any one adviser in any one semester.

DEPARTMENT OF POLITICAL SCIENCE

FACULTY

Barbara Stone
Department Chair

Sidney Baldwin, John Bayes, Charles Bell, Michael Brown, Keith Boyum, Vincent Buck, Ann Feraru, Julian Foster, Barry Gerber, Philip Gianos, Harvey Grody, Gary Guertner, Dale Holt, Bernard Hyink, Karl Kahrs, Albert Liston, John Purcell, Ivan Richardson,* John Shippee, Vera Simone, Sandra Sutphen, Bruce Wright, Jon Yinger

ADVISEMENT

Undergraduates

Students are strongly urged to see one of the department's undergraduate advisers during their first semester at Cal State Fullerton. This is particularly important for community college transfers. *Failure to do so may delay graduation.*

Graduates

Students must see either their political science or public administration adviser during their first semester of study. (See section on graduate programs.)

Prelaw

Political science has been a traditional choice of majors for a large number of law school-bound students.

Curricular advice and information on a variety of activities are available from the prelaw adviser, including advice about specific law schools, law school entrance requirements (grades and Law School admission tests), the Prelaw Society, the Legal Clinic, prelaw internship and other activities.

BACHELOR OF ARTS IN POLITICAL SCIENCE

The undergraduate major in political science prepares students for teaching, government employment on the local, state and national level; foreign service, graduate work in political science, law school, or leadership in civic and political activities. Political science is also of value to prospective special librarians and journalists.

*University administrative officer

Students interested in public administration, and in preparing for careers in the public service, may concentrate in that area. In consultation with members of the public administration faculty, they may design study plans which include opportunities for cooperative (work-study) arrangements.

There is no specific program within political science for prelaw-oriented majors. Law-oriented students, however, may properly include such courses as Public Law and the Judicial Process in a course of study within the major.

Students should consult the department prelaw adviser for more specifics.

Unit and Course Requirements

The major consists of 30 units of political science of which at least 24 units must be in the upper division, plus 12 upper division units in related departments taken with the approval of the adviser. These 42 units are in addition to those meeting the general education requirements. Majors are required to take appropriate upper division courses in other disciplines usually in the social sciences (e.g., anthropology, economics, geography, history, psychology, sociology, statistics and philosophy). Related credit may be given only when specifically approved in writing by a department adviser.

All majors are required to take Political Science 100, American Government, or its equivalent. This course does not apply toward the 30 units required of the major, but it may apply toward the student's general education requirements. In addition to Political Science 100, there are other prerequisites for many of the 400-level courses offered by the department; therefore, the student should plan in advance to meet course requirements, (e.g., public administration courses require Political Science 320, Politics, Public Administration and Policy, as a prerequisite in addition to Political Science 100).

For current information regarding the Department of Political Science, the student is advised to consult the departmental bulletin (PS), which is issued each semester.

INTERNSHIPS

The department offers several internships designed to give the student experience in applying political science knowledge to specific problems. At present these are in international relations (Political Science 495); prelaw (Political Science 496); (Political Science 497) for students interested in public administration; and politics (Political Science 498).

For details, see page 21 of this catalog.

INTENSIVES (RESEARCH PROSEMINARS)

Students who want to concentrate their study on a special topic or problem are urged to take at least one of the six-unit intensive classes. Combining lectures/discussion with applied research, these courses enable the interested student to become involved in a specific subject. See catalog description of Political Science 311, 316, 321, 331, 336, 341, 346, 351 and 376.

TEACHING MINOR IN POLITICAL SCIENCE

The teaching minor is composed of 21 units of political science, in addition to those meeting the general education requirements.

MASTER OF ARTS IN POLITICAL SCIENCE

This degree is planned for students interested in advanced graduate work toward the doctoral degree in political science, for the professional improvement of high school and community college teachers, government employees, personnel in the military services and for individuals interested in civic and political leadership.

Prerequisites

An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures).

A student who meets the requirements for conditionally classified graduate standing, as well as the following requirements, may be admitted as a classified graduate upon the development of an approved study plan: completion of an undergraduate degree with a grade-point average of 3.0 or more in courses in the major field. If the major field was not political science or another social science, the student must have a GPA of 3.0 both in the

major and in any upper division social science courses taken. A student whose GPA is less than 3.0 may appeal to the departmental graduate committee for waiver of this requirement, if the combined score on the GRE aptitude test is 1,000 or more.

Study Plan
A student must design a study plan of 30 units of coursework, subject to the approval of his M.A. committee (as part of the requirements for admission to classified status). At least 18 of these units must be in political science, of which 15 units must be 500- level courses. East student selects a major and minor area of interest such as American politics, comparative politics, international relations, political theory, public law and public administration. Seminars are to be taken in areas selected. Political Science 506 must be taken during the first two semesters in the program.

A student has the option of (1) writing a thesis (3-6 units), with an oral examination required, or (2) taking comprehensive written and oral examinations. In the latter case, a project (3-6 units) may be included on the student's study plan.

No more than nine units of postgraduate work taken prior to classified standing may be applied to student's master's degree program.

Thesis
A chairman and two other members of a student's thesis committee shall be selected by the student in consultation with the graduate advisory committee.

A thesis shall include an oral examination which covers the subject matter of the thesis as well as a general knowledge of the discipline, particularly the student's major and minor fields.

Comprehensive Examinations
Comprehensive examinations shall include written and oral tests in a student's major area of concentration, minor area, and the scope and theory of the discipline. All three sections must successfully be passed or the entire examination must be retaken.

A student who does not pass the written portion is ineligible to take the oral test.

A student is entitled to retake the examinations only once if he fails in the initial effort.

Research Skills
Each student in the M.A. in Political Science program must demonstrate one of the following:

1. Reading knowledge of a foreign language. Students who have successfully completed at least one semester (or its equivalent) of academic work where his/her instruction in such work was in a language other than English will be assumed to have completed the language requirement. Other students may complete this requirement by passing an examination.

2. Proficiency in quantitative research skills; Including data analysis, research design, computer application. Mastery of these skills is to be demonstrated by successful completion of an examination administered by the departmental research committee.

For advisement and further information, consult the M.A. in Political Science adviser. See also "The Program of Master's Degrees" and the *Graduate Bulletin*.

MASTER OF PUBLIC ADMINISTRATION

As a major gateway to a professional career in government and public affairs, the M.P.A. degree is designed to serve the following purposes:

1. To prepare students who wish to enter a "generalist career" in public administration, leading to such positions as city manager, county administrator, and general administrative officer in city, county, state, and national governments;

2. To strengthen the professional competence of those who are already embarked on careers in general or in specialized areas of public administration, such as budgeting and finance, personnel development, systems analysis, and relations with the public;

3. To assist functional specialists, such as those in urban planning, public works, public

welfare, law enforcement, education, community development, and other fields, who believe that they need a broader education in public affairs;

4. To provide academic study for more experienced or mature persons who wish to prepare themselves for second careers in public service;

5. To increase the administrative practitioner's understanding of the larger political system within which public administration takes place; and

6. To provide academic preparation for those interested in proceeding to the doctoral degree in public administration.

Prerequisites

An applicant must meet the university requirements for admission in conditionally classifiec graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures).

A student who meets the requirements for conditionally classified graduate standing, as well as the following requirements, may be admitted as a classified student upon the development of an approved study plan: (1) Completion of a minimum of 12 semester units of undergraduate coursework in the social sciences, six semester units of which must have been upper division level; (2) Attainment of a grade-point average of 3.0 or better in upper-division courses in the major field, or completion of nine units of adviser-approved coursework with a GPA of at least 3.0; (3) Completion of no more than nine semester units of adviser-approved coursework in this program.

Students with grade-point deficiencies in their baccalaureate work or students who have not satisfied the requirement of 12 units of social science coursework, but who have had extensive experience in public administration, may be classified in the program after they have demonstrated their capacity for doing advanced academic work by successfully completing nine semester units of approved coursework in this program with a grade-point average of at least 3.0.

Study Plan

The degree study plan must include a *minimum* of 30 semester units of adviser-approved coursework which meets the following requirements:

1. Nine units of required core coursework in public administration as follows:

		Units
Political Science 426	Administrative Research and Analysis*	3
Political Science 521	Seminar in Public Administration Theory	3
Political Science 526	Seminar in Administrative Behavior	3
Total		9

2. At least 15 units must be at the 500 level.

3. No more than six units from other institutions may be accepted for transfer credit.

4. Three units of credit in the public administration internship for students who do not have adequate public service experience.

5. Candidates for the M.P.A. degree must successfully pass a written comprehensive examination in public administration, but any candidate may, with the approval of the M.P.A. adviser, choose either the project (Political Science 597) or the thesis (Political Science 598) in lieu of the comprehensive examination. Both the project and the thesis earn three units of coursework each and include a final oral defense.

6. Normally, no more than nine units of postgraduate coursework taken prior to classified status may be applied to the master's degree program.

For further information, consult the M.P.A. adviser.

See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin*.

*Political Science 426 requires a course in statistics as a prerequisite or consent of instructor.

POLITICAL SCIENCE COURSES*

Political Science 100 or its equivalent is the prerequisite for all upper division political science courses; 300-level courses beginning with 310 may require concurrent enrollment in a research proseminar (See discussion of Intensives on page 305). See the departmental bulletin for details not provided in the course descriptions below.

100 American Government (3)
Explores people, their politics, and power focusing on contemporary issues, changing political styles and processes, institutions and underlying values contributing to the stability of the American political system. Satisfies state requirements in U.S. Constitution and California state and local government.

300 Contemporary Issues in California Government and Politics (3)
Analysis of contemporary issues in California government and politics, including regional, county, and community subdivisions. Emphasis on decision-making and costs of democracy; crisis in the cities, flight to the suburbs, and race relations. Comparisons will be made with other states and their subdivisions. Satisfies state requirement in California state and local government.

309 Introduction to Urban Politics (3)
The course focuses on metropolitan areas, both the inter city and suburbia. Emphasis is on political processes and topics include power in the city, the urban-suburban relationship, political fragmentation and the role of the national government in urban areas.

310 American Political Behavior (3)
Stresses American culture, social patterns, behavior as they relate to political interaction. To be taken in conjunction with Political Science 311 when offered by same instructor.

311 Research Proseminar in American Political Behavior (3)
Research concepts and techniques applied to an individual project in American political behavior. Offered only as companion course to Political Science 310.

315 American Political Process (3)
Stresses theoretical and analytic approaches to the study of structures, processes, and institutions in the American political system. To be taken in conjunction with Political Science 316 when offered by same instructor.

316 Research Proseminar in American Political Process (3)
Research concepts and techniques applied to an individual project in American political process. Offered only as companion course to Political Science 315.

320 Politics, Policy and Administration (3)
Public administration and the roles played by administrators in the formulation and execution of public policy. To be taken in conjunction with Political Science 321 when offered by same instructor.

321 Research Proseminar in Politics, Policy and Administration (3)
Research concepts and techniques applied to an individual project in public administration and policy analysis. Offered only as companion course to Political Science 320.

330 Comparative Political Analysis (3)
Compares patterns of political behavior and interaction in various political systems. Also analyzes the basis for making such comparisons. To be taken in conjunction with Political Science 331 when offered by same instructor.

331 Research Proseminar in Comparative Political Analysis (3)
Research concepts and techniques applied to an individual project in comparative political analysis. Offered only as companion course to Political Science 330.

335 Comparative Political Change (3)
A comparative study of sources and patterns of political change. To be taken in conjunction with Political Science 336 when offered by same instructor.

336 Research Proseminar in Comparative Political Change (3)
Research concepts and techniques applied to an individual project in comparative political change. Offered only as companion course to Political Science 355.

◊Prerequisite may be waived only with consent of instructor.

340 Political Philosophy (3)
Problems of evidence and validation in political studies. Distinction between empirical statements, value judgments and tautologies. Relationship of fact and value. Systematic approaches to the political philosophies of selected thinkers. Take in conjunction with Political Science 341 when offered by same instructor.

341 Research Proseminar in Political Philosophy (3)
Research concepts and techniques applied to an individual project in Political Philosophy. Offered only as companion course to Political Science 340.

345 Political Culture and Political Value (3)
Political values as they relate to aspects of political culture such as perceptions, attitudes and participation. To be taken in conjunction with Political Science 346 when offered by same Instructor.

346 Research Proseminar in Political Culture and Political Values (3)
Research concepts and techniques applied to an individual project in political culture and political value. Offered only as companion course to Political Science 345.

350 World Politics (3)
The global political system; institutions and processes of interaction among states and other international actors.

351 Research Proseminar in International Politics (3)
Research concepts and techniques applied to an individual project in international relations. Offered only as a companion course to Political Science 350.

352 American Foreign Policy (3)
An examination of United States' foreign policy since World War II emphasizing institutions and bureaucracies of foreign policy decision-making, military and national security policy, domestic sources of foreign policy, and changes brought about by detente with communist nations.

375 Public Law (3)
Nature and function of public law particularly within the Anglo-American political tradition. To be taken in conjunction with Political Science 376 when offered by same instructor.

376 Research Proseminar in Public Law (3)
Research concepts and techniques applied to an individual project in public law. Offered only as a companion course to Political Science 375.

400 Problems in American Government (3)
Examination of such problems as the role of the federal government regarding pollution, drugs and narcotics, (education, law enforcement). The seniority system in Congress; the role of lobbies, etc., using government reports, Congressional hearings, newspapers and journals of opinion.

405 Politics of Experience (3)
Prerequisite: consent of instructor. A senior research proseminar stressing the theory and application of simulation models, including decision-making, game theory and group encounter techniques with respect to politics. Individual and group research encounter techniques will be utilized.

406 Scope and Theory of Political Science (3)
A senior proseminar in political science. The nature of the discipline: approaches, tools, concepts and theories. Highly recommended for all political science majors planning to do graduate work.

407 Quantitative Methods in Political Science (3)
Introduction to quantitative research methods in political science. Includes introduction to computer data processing techniques and instruction in statistical measures employed in analyzing social science research data. Previous computer experience or background in statistics not required for this course.

410 Political Parties (3)
Prerequisite: consent of instructor. The structure and methods by which the political parties operate in the American political system with some comparisons to their structure and operation in other democratic societies.

411 Art of Administration (3)
Prerequisite: consent of instructor. An examination of public administration as "art" rather than "science." Features the reading of administrative novels and other fictional literature, and the review of films and other audiovisual media.

412 The Art of Politics (3)
Prerequisite: consent of instructor. An examination of politics as it is practiced and understood by practitioners of the art. A seminar which features guest lecturers.

413 Pressure Groups and Public Opinion (3)
The power and growth of farm, labor, business, and noneconomic pressure groups; interest group activity in Congress; administration and courts; public opinion and propaganda.

414 The Legislative Process (3)
The nature of the legislative process in Congress, state legislatures, city councils and county boards of supervisors. Stress is placed on process, policy and reform; the executive as chief legislator; interest groups; judicial and bureaucratic law making; and representation.

415 Political Behavior (3)
A behavioral approach to understanding how and why people behave politically. Topics include: the U.S. power elite, voting behavior, how children learn politics, an examination of the nature or nurture aspects of political behavior, and the role of ideology and personality.

416 The American Presidency (3)
A study of the growth of the office and power of the President. Emphasizing roles of the President as chief policy-maker, administrator, party and public opinion leader.

418 Public Policy Process (3)
Analysis of various public policy-making models and evaluation of their applicability to selected contemporary policy issues.

419 Administrative Organization and Process (3)
Prerequisite: consent of instructor. For students planning to enroll in graduate level public administration courses, but who have not had an introductory course in public administration. Topics, as organizational theory and practice, decision making, systems analysis, performance evaluation and administrative improvement.

420 Governing the Urban Community (3)
Study of ideas, institutions, interests in the governance of urban communities, specially emphasizing decision-making, problem-solving, and policy-making, and administrative institutions.

421 Public Finance Administration (3)
Prerequisite: Political Science 320 or 419. Role of finance administration and budgeting in determination of public policy. Relationship of assessment administration to governmental revenues and expenditures; principles and practices of cost accounting, treasury management, and capital budgeting.

422 Public Personnel Administration (3)
Prerequisite: Political Science 320 or 419. Growth and development of the civil service and the merit system; evaluation of recruitment procedures and examinations; analysis of such topics as position classification, salary structures, retirement plans, in-service training, employees organizations, and personnel supervision.

423 Regional Planning and Development (3)
Prerequisite: Political Science 320 or consent of instructor. Governmental policies, procedures, and agencies involved in planning and development of regions. Survey of regional problems and objectives, emerging views of regional planning, and investment allocation during development process.

424 Urban Planning and Development (3)
Prerequisite: Political Science 320 or consent of instructor. The origins and development of city planning; the legal bases and fundamental concepts of planning are defined; and the organization and administration of the planning activity are examined. The major elements of the general plan, zoning laws and administration, urban renewal, and capital programming are considered.

425 Comparative Public Administration (3)
Prerequisites: Political Science 320 or 419. Cross cultural comparison of public administration systems; application of different models of analysis to administrative institutions; bureaucracy; ecology of public administration in modernized and developing societies; and the role of public administration in nation-building.

426 Administrative Research and Analysis (3)
Prerequisite: Political Science 320 or 419. Concepts and methods employed in administrative research and analysis, with emphasis on organization and procedure surveys, performance evaluation techniques, administrative data sources and their uses, and report writing.

427 Metropolitan Politics and Administration (3)
Prerequisite: consent of instructor. The politics and administration of metropolitan area institutions of government, with emphasis upon their problems and alternative solutions.

428 Administrative Systems and Analysis (3)
Prerequisite: Political Science 320 or 419. Administrative systems and analysis in contemporary government, with emphasis upon systems planning and design, data processing, work flow, control systems, operations research, cost-benefit analysis and forms design.

429 Public Personnel Training (3)
Prerequisite: Political Science 422 or consent of instructor. Training methodology in public administration and affairs including exploration of the knowledge, problems, methods and institutions in the training of public personnel.

430 Government and Politics of a Selected Nation-State (3)
Prerequisite: Political Science 330 or consent of instructor. Analysis of the political institutions and processes of a selected nation-state. May be repeated for credit.

431 Government and Politics of a Selected Area (3)
Prerequisite: Political Science 330 or consent of instructor. Comparative analysis of the structures and functions of national political systems in a selected geographic area. May be repeated for credit.

440 Political Ideologies and Attitudes (3)
A comparative analysis of the content and historical evolution of modern ideologies such as liberalism, democracy, communism, socialism and fascism. The distinctive appeals of these ideologies will be explored for an understanding of their relationship to social and political change.

442 Problems of Democratic Political Thought (3)
Problems relevant to philosophies and theories of democratic political systems, with emphasis on American political thought.

443 The Theory and Philosophy of Marxism (3)
Prerequisite: Political Science 340. An analytical study of Marxist theory and philosophy from its pre-Hegelian roots to the present.

451 Problems in International Relations (3)
Prerequisite: Political Science 350. Study of selected problems in international politics and foreign policy, as specified by instructor. See department bulletin for subject focus each semester. May be repeated for credit.

452 Foreign Policy of a Selected Country or Group of Countries (3)
Objectives, capabilities, policy-making processes, and implementation of the foreign policies of a particular country or group of countries. Focus may be on United States, Soviet Union, Latin America or other countries or areas. May be repeated for credit.

455 Comparative Analysis of Foreign Policies (3) (Formerly 355)
Frameworks for analyzing the foreign policies of states domestic and external determinants of foreign policy actions; foreign policy decision-making institutions and processes, foreign policy objectives and instruments.

461 The United Nations and Other Public International Organizations (2)
Prerequisite: Political Science 350. Structure and functions of United Nations and various specialized and regional international organizations.

470 Judicial Process (3)
Prerequisite: Political Science 375 or consent of instructor. The nature, functions and roles of courts in the Anglo-American legal system; the nature, functions and roles of major participants in the American legal system, including judges, attorneys and citizens.

473 Seminar in Constitutional Law: Governmental Power (3)
Prerequisite: Political Science 375 or consent of instructor. Case studies, selected problems on the nature, sources and extent of governmental authority, typically involving social and economic regulation, state-national relationships, and relationships among legislative, executive and judicial branches of government.

474 Seminar in Constitutional Law: Civil Rights and Civil Liberties (3)
Prerequisite: Political Science 375 or consent of instructor. Case studies in selected constitutional rights and liberties, typically involving relationships between the individual and government which are affected in particular by the Bill of Rights and the 14th Amendment.

475 Administrative Law (3)
Prerequisite: Political Science 320 or 375 or consent of instructor. The study of 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.

476 International Law (3)
Prerequisite: Political Science 350 or 375 or consent of instructor. The sources and nature of international law; the law of war and peace; the rights and duties of nations in their international relationships, the World Court: purpose, problems, and prospects.

481 Politics Through Literature (3)
Uses the novel as a means of explicating political behavior in various nation-states.

485 Politics of Change (3)
Focuses on a specific cultural, religious, or ethnic interest group or on the impact of a particular ideology, movement or individual or political processes and behavior. Topics vary from semester to semester. May be repeated for credit.

490 Seminar in Selected Topics (3)
Seminar in selected topics to be announced on a semester basis. May be repeated for credit.

495 International Internship (3)
Prerequisite: consent of instructor. Students work 10 hours per week with officials of foreign governments located in the Los Angeles-Orange County area, usually consular officials. Individual supervision is provided by faculty and cooperating officials. Interns meet with instructor by arrangement.

496 Prelaw Internship (3)
Prerequisite: consent of instructor. Designed to acquaint students with the legal profession primarily in the public rather than private spheres. A supervised working commitment of 10 hours weekly with an assigned individual or organization.

497 Government Internship (3)
Prerequisites: public administration concentration and consent of instructor. Students work 15-20 hours per week as supervised interns in a public agency or related organization.

Supervision is provided by the faculty and cooperating agency. In addition to the job experience, interns meet in a weekly three-hour seminar.

498 Political Internship (3)
Prerequisites: political science concentration and consent of instructor. Students work 8-12 hours per week with elected officials or candidates for elective office. Individual supervision is provided by the faculty and cooperating individuals. Interns meet with instructor by arrangement. May be repeated for credit.

499 Independent Study (1-3)
Open to advanced students in political science with consent of department chair.

501 Readings in Political Science (3)
Prerequisite: consent of instructor. A seminar surveying the major works in the discipline of political science; strongly recommended for all students seeking an M.A. in Political Science or an M.P.A.

506 Seminar in the Scope and Theory of Political Science (3)
Prerequisite: consent of instructor. The nature of the discipline, approaches, tools, concepts and theories.

511 Seminar in American Politics (3)
Prerequisite: consent of instructor. A comprehensive examination of the political process in the United States.

515 Seminar in Political Behavior (3)
Prerequisite: consent of instructor. An intensive analysis of selected topics in political behavior.

520 Seminar in Public Finance Administration (3)
Prerequisite: consent of instructor. Study of selected topics in public finance administration.

521 Seminar in Public Administration Theory (3)
Prerequisite: consent of instructor. Study of the concepts, models and ideologies of public administration within the larger political system.

522 Seminar in Public Personnel Administration (3)
Prerequisite: consent of instructor. Study of selected topics in public personnel administration.

524 Seminar in Environmental Planning (3)
Prerequisite: consent of instructor. Specialized study of problems and issues in the physical and human environment of the urban community.

525 Seminar in Metropolitan Area Government (3)
Prerequisite: consent of instructor. Study of the different approaches to metropolitan areawide government, with special emphasis on interjurisdicitional conflict and cooperation and the roles of state and national governments.

526 Seminar in Administrative Behavior (3)
Prerequisite: consent of instructor. Concepts, functions and techniques of administrative leadership; group dynamics; decision-making; the organization and the individual.

527 Seminar in Comparative Public Administration (3)
Prerequisite: consent of instructor. Study of selected topics in comparative public administration.

528 Seminar in Public Administration and Policy (3)
Prerequisite: consent of instructor. Study of the interplay between public policy development and program administration.

529 Seminar in Administrative Management Theory (3)
Prerequisite: consent of instructor. Study of selected topics in organization and management theory.

531 Seminar in Comparative Politics (3)
Prerequisite: consent of instructor. A comparative study of political systems.

535 Comparative Political Parties (3)
Prerequisite: consent of instructor. Comparative analysis of the structure, behavior, and roles of political parties and party systems. An attempt to construct a theory of parties, based on the evidence of a number of national political parties.

540 Seminar Readings in Political Philosophy (3)
Prerequisite: undergraduate preparation in political theory or philosophy. Readings of selected classics in political philosophy. Politics from the perspective of normative political theory.

541 Seminar in Contemporary Political Theory (3)
An analysis of non-Marxist social and political theories of the late 19th and 20th centuries with emphasis on the disintegration of community, alienation and boredom, the rise of irrationalism, and social-psychological bases of totalitarian movements.

550 Seminar on Foreign Policy Formulation (3)
Prerequisite: consent of instructor. A study of various models of the foreign policy-making process. Emphasis will be on the interaction between domestic and international sources for policy formulation.

551 Seminar in International Relations (3)
Prerequisite: consent of instructor. Study of selected problems in international relations with emphasis on individual research and contributions within the framework of a seminar. May be repeated for credit.

571 Seminar in Public Law (3)
Prerequisite: consent of instructor. Study of selected topics in public law.
597 Project (3)
Prerequisite: consent of instructor.
598 Thesis (3-6)
Prerequisite: consent of instructor.
599 Independent Graduate Research (1-3)
Prerequisite: consent of department chair. May be repeated for credit.

DEPARTMENT OF PSYCHOLOGY

FACULTY
David Perkins
Department Chair

Robert Abbott, Frank Bagrash, Christopher Cozby, Ernest Dondis, Peter Ebersole, Margaret Fitch, Jara Krivanek, Deanna Kuhn, Richard Lindley, William Lindner, Carol Lindquist, Richard McFarland, Douglas Navarick, Russell Revlis, Michael Scavio, Louis Schmidt, Don Schweitzer,* William Smith, Edward Stearns, Joseph Thomas, George Watson, Arthur Webber, Geoffrey White, Stanley Woll

BACHELOR OF ARTS IN PSYCHOLOGY
The major in psychology consists of 36 units of lower and upper division work designed for students (1) who want a sound background in psychology as a science, (2) who want a basic understanding of human behavior as a supplement to some other major course of study, and (3) who wish to acquire a thorough undergraduate training in psychology in anticipation of graduate study.

Requirements for the Major

Lower Division

Psychology 101 Introductory Psychology (3)
Psychology 161 Elementary Statistics (3)
Psychology 202 Principles of Psychology (3)

Upper Division
A minimum of 27 units of upper division work is required for a major in psychology. Fifteen units are required as follows:
Psychology 302 Experimental Psychology: Learning and Motivation (3)

One of the following:
Psychology 303 Experimental Psychology: Sensation and Perception (3)
Psychology 304 Comparative Psychology (3)
Psychology 321 Physiological Psychology (3)

One of the following:
Psychology 331 Psychology of Personality (3)
Psychology 351 Social Psychology (3)
Psychology 361 Developmental Psychology (3)
Psychology 461 Group Psychological Testing (3)
Psychology 408 History of Psychology (3)

A minimum of 12 additional upper division units in psychology courses will be selected in consultation with the academic adviser. Not more than three units of Psychology 499, Independent Study, may be counted toward the major.

Each course counted toward the major must be completed with a grade of C or higher.

* University administrative officer

Recommended Related Courses
Courses from each of the following areas according to the student's interests: (1) social sciences; (2) physical sciences; (3) biological sciences; (4) mathematics; (5) humanities.

Students planning to do graduate work in psychology are advised to plan additional work in biological, physical, and computer sciences and to include at least a one-semester course in college mathematics. Undergraduate work in foreign languages is also recommended.

Departmental Honors
The Psychology Department also offers a sequence of honors courses for qualified students who wish to do advanced work in psychology. The first of these honors courses (Psychology 491) provides students with an opportunity to carry out research under the tutorial guidance of a faculty member. The second (Psychology 492) is a seminar in contemporary issues in psychology. Work on the research project and seminar participation will be evaluated for departmental Honors. Interested students should obtain further information and applications from the department office.

MASTER OF ARTS IN PSYCHOLOGY

The Master of Arts in Psychology is designed to broaden the student's knowledge in the major content areas of psychology and to develop skills in analyzing and carrying out research. The degree is useful for those intending to do advanced graduate work in psychology or to teach in a community college and for those seeking careers in a variety of community positions.

Prerequisites

Students must meet the university and school requirements for admission in graduate standing as conditionally classified and with the declared objective of this degree. Please see the section of this catalog on "The Program of Master's Degrees."

The requirements for classification in this program are:

1. Meeting the requirements for admission in graduate standing as conditionally classified.*

2. Completion of a bachelor's degree with a major in psychology *or* 24 units in upper division psychology. If the latter option is chosen, then the following courses must have been completed: one upper division psychology lab course; at least two courses from physiological psychology, perception, learning or motivation; at least one course in social psychology or psychological testing.

3. Completion of Psychology 408, History of Psychology, or equivalent, and Psychology 465, Analysis of Variance, or equivalent. Alternatively, these courses may be included on the graduate study plan as electives. In any case, a grade of B or better is required in these courses.

4. Completion of a baccalaureate degree with a 2.5 general average and a 3.0 average in psychology.

5. Satisfactory performance on the Aptitude Test of the Graduate Record Examination.

6. Development of an approved study plan.

Study Plan
The Master of Arts in Psychology requires a minimum of 30 units of approved graduate work in the major field, including the completion and acceptance by the Psychology Department Graduate Studies Committee of a written thesis.

The student, in consultation with an adviser on the staff of the Psychology Department, shall develop a program of studies which will be submitted to the Graduate Studies Committee of the Department of Psychology for approval.

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* Application to the program is not completed until a questionnaire (obtainable by mail from the graduate office of the Psychology Department) is completed and returned to that office. In addition, two letters of recommendation are required.

Course requirements for the M.A. in Psychology:	*Units*
Psychology 501A and 501B Proseminar in Psychology	3-3
Psychology 510 Experimental Design	3
Psychology 520 Seminar: Experimental Psychology	3
Psychology 521 Seminar: Personality *or*	
Psychology 522 Seminar: Developmental *or*	
Psychology 551 Seminar: Social Psychology	3
Psychology 598 Thesis	3-6
Elective upper division or graduate courses	9-12
(up to 6 units may be in related areas outside psychology)	
Total	30

Students are expected to complete Psychology 501A and 501B during the first two semesters of graduate work in psychology.

In order to be advanced to candidacy, a student is required to have completed 12 units on the study plan with a B average and must have received a grade of B or better in Psychology 408 or equivalent, Psychology 465 or equivalent, Psychology 501A, Psychology 501B, and Psychology 510. An oral defense of the thesis is required at the completion of the student's program.

For further information and a copy of the departmental admissions questionnaire, consult the graduate office of the Department of Psychology.

See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin.*

MASTER OF SCIENCE IN PSYCHOLOGY

Concentration in Clinical/Community

The Master of Science is an applied program designed to provide the students with the following specific knowledge, abilities and experience: a thorough grounding in the theories relevant to clinical and community psychology; the knowledge and understanding needed to be intelligent consumers of the relevant research literature; the background and expertise required to select, administer, score and interpret various diagnostic tests; a thorough knowledge of the techniques of individual and group therapy; practical, closely supervised experience in the conduct of individual and group therapy. The program is a terminal degree intended to prepare the student for paraprofessional or professional work in a variety of mental health settings.

Prerequisites

To be minimally qualified for admission in classified graduate standing in this program, the applicant normally must satisfy all of the following conditions:

1. Meet the general prerequisites for graduate work formulated and recommended by the university, which include a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see appropriate section of this catalog on admission of graduates for complete statement and procedures).

2. Completion of a bachelor's degree with a major in psychology *or* 24 approved units in upper division psychology. If the latter option is chosen, then the following courses must have been completed: one upper division psychology lab course; at least two courses in physiological psychology, perception, learning or motivation; at least one course in social psychology or psychological testing.

3. Completion of coursework in psychology with a grade-point average of 3.0.

4. Show acceptable performance on the Aptitude Test and Advanced Test of the Graduate Record Examination.

5. Submit complete and timely application materials.*

* Application to the program is not completed until the departmental application form and three letters of recommendation on the applicant's behalf are received by the department.

6. All other things being equal, consideration will be given to paid or volunteer clinical job experience.

7. Development of an approved study plan.

Those to be admitted to the program will be selected from among the qualified applicants at the sole discretion of the department's Graduate Studies Committee.

It may be possible for applicants who have minimal deficiencies in prerequisite requirements, as detailed above, but who are otherwise highly qualified, to be admitted in conditionally classified graduate standing, with provisions made for removal of deficiencies prior to the granting of classified standing. For further information, consult the graduate program adviser.

Study Plan

First Year	*Units*
Psychology 501A and 501B Proseminar in Psychology	3-3
Psychology 531 Individual Mental Testing	3
Psychology 540 Proseminar in Community Psychology	3
Psychology 542 Proseminar in Clinical Psychology	3
Psychology 544A and 544B Psychodiagnostics	3-3
Psychology 546 Behavior Therapy	3
Second Year	
Psychology 560 Individual Therapy Techniques	3
Psychology 562 Group Therapy Techniques	3
Psychology 564A and 564B Field Work Seminar	3-3
Psychology 566A and 566B Field Work	4-4
Total	44

It should be noted that faithful completion of the coursework, at whatever level of performance, is not sufficient to permit continuation in the program; both coursework and faculty judgment with respect to the student's effectiveness, professional and ethical behavior in dealing with potential clients must be satisfied. Once admitted, continuation in the program will be contingent upon satisfactory performance in all aspects of the program as judged objectively and clinically by the Clinical-Community Committee and the Graduate Studies Committee. In addition, the student must maintain a B average in all coursework and must receive a grade of B or better in Psychology 501A and 501B.

Following satisfactory completion of three semesters' coursework (34 units) the student will take a written comprehensive examination. Notice of intent to take the examination must be on file with the graduate adviser within two weeks of the first day of the final semester. A student is entitled to retake the examination only once if he or she fails in the first effort.

New students are admitted to the program in the fall semester. Those interested in applying should write the graduate secretary, Department of Psychology, for departmental application forms.

PSYCHOLOGY COURSES

101 Introductory Psychology (3)
General introduction to basic concepts and problems in psychology. Topics include perception, learning, cognitive processes, development, motivation, personality, abnormal behavior, physiological and social psychology.

161 Elementary Statistics (3)
Prerequisite: Math 120, or consent of instructor. Descriptive statistics, hypothesis testing, analysis of variance, correlational techniques.

202 Principles of Psychology (3)
Prerequisite: Psych 101. A course for psychology majors emphasizing the fundamentals of research methods as they apply to basic areas in psychology. Students will participate in conducting experiments and analyzing data. (2 hours lecture, 3 hours laboratory)

302 Experimental Psychology: Learning and Motivation (3)
Prerequisites: Psych 101, 161, 202 or consent of instructor. Selected theoretical and experimental investigations in learning, memory, thinking, problem solving and motivation. (2 hours lecture, 3 hours laboratory)

303 Experimental Psychology: Sensation and Perception (3)
Prerequisites: Psych 101, 161, 202 or consent of instructor. Selected theoretical and experimental investigations in sensory and perceptual processes, including vision and audition. (2 hours lecture, 3 hours laboratory)

304 Experimental Psychology: Comparative (3)
Prerequisites: Psych 101, 161, 202 or consent of instructor. Selected theoretical and experimental investigations in animal behavior, including humans. The interspecies comparisons of behavior and sensory, motor, endocrine, and neural structures. (2 hours lecture, 3 hours laboratory)

311 Educational Psychology (3)
Prerequisite: Six units in psychology. Application of psychological research and theory to the educative process. Major attention given to the problems of learning, individual differences, intellectual capacities and behavior.

321 Experimental Psychology: Physiological (3)
Prerequisites: Psych 202 or Bio Sci 101 or equivalent. Anatomy and physiology of the nervous system, role of neural and humoral agents in complex behavior. Relation between behavioral and biological processes. (2 hours lecture, 3 hours laboratory)

331 Psychology of Personality (3)
Prerequisite: Psych 101. Broad survey of research, theory and assessment techniques in the area of personality.

341 Abnormal Psychology (3)
Prerequisite: Psych 101. Dynamics, symptoms, causes, treatment and prevention of neuroses, psychoses, alcohol and drug addition, psychosomatic illnesses and character disorders.

342 Mental Health (3)
Prerequisite: Psych 101. An analysis of the concepts of mental health with emphasis upon positive factors in the individual, group and community which are conducive to improving mental health. Credit not given as part of psychology major.

350 Environmental Psychology (3)
Prerequisite: Psych 101 or consent of instructor. Survey of theory, research and method in the study of behavior-environment relationships. Study of the influence of such variables as population density and urban design on human behavior.

351 Social Psychology (3)
Prerequisite: Psych 101. Study of phenomena related to social behavior and the nature of group processes and influences. Topics include attitude formation and change, aggression, altruism, affiliation and socialization.

361 Developmental Psychology (3)
Prerequisite: Psych 101. Psychological and physical development of the person from birth through adulthood. Attention is given to theories, methods and research findings regarding the development of perception, cognition, learning, personality and social behavior.

391 Industrial Psychology (3)
Prerequisite: Psych 101. Study of psychological principles and techniques in industrial and business settings. Includes selection, placement, training, human factors, environmental influences, problems of people at work and consumer behavior.

401 Behavior and Sexual Identity (3)
Prerequisite: Psych 101, and 331 or 361, or consent of instructor. Developmental, physiological, personality and cultural approaches to sex role behavior in men and women.

408 History of Psychology (3)
Prerequisite: Senior standing. Survey of the development of psychology from early times to the present, emphasizing major traditions and conceptual issues.

411 Human Learning and Memory (3)
Prerequisite: Psych 302 or consent of instructor. Theoretical and experimental analysis of the acquisition, retention, and transfer of verbal and motor responses. Consideration of single vs. multiple memory storage systems and of the role of reward, information and motivation in human learning.

412 Psychology of Learning (3)
Prerequisite: Psych 302 or consent of instructor. Principles of learning according to the major theoretical systems. Critical evaluation of the theories and systems.

413 Perception (3)
Prerequisite: Psych 303 or consent of instructor. Psychological problems in perception.

415 Cognitive Processes (3)
Prerequisite: Psych 302, 303 or consent of instructor. Consideration of theory and research with respect to problem solving, thinking, concept learning, language, decision making and judgment, cognitive structure, cognitive development.

417 Introduction to Psycholinguistics (3)
Prerequisites: six hours of upper division work in psychology or linguistics, or consent of instructor. Survey and analysis of psychological and linguistic approaches to the study of language. Innate and learned aspects of language development, motivational and social aspects of language, symbolism, language disorders and universals. (Same as Linguistics 417)

431 Theories of Personality (3)
Prerequisite: Psych 331. Critical discussion and integration of traditional and contemporary theories of personality, including psychoanalytic, humanistic-existential, behavioral, trait and social interaction approaches.

441 Experimentation in Personality (3)
Prerequisites: Psych 331. Laboratory experience in personality research. Students will design and conduct experiments. Topics included creativity, projective tests as personality measures, experimental psychodynamics, personality structure and interpersonal judgment. Topics will vary according to preferences of students and instructor. (2 hours lecture, 3 hours laboratory)

451 Experimental Social Psychology (3)
Prerequisites: Psych 161 or equivalent, 202 and 351. Study of selected topics in social behavior, group processes and influences. Laboratory experiments in attitude formation and change; group processes such as communication, problem solving, and norm formation; interpersonal influence and perception. (2 hours lecture, 3 hours laboratory)

452 Interpersonal Processes (3)
Prerequisite: Psych 351 or Sociology 341, or consent of instructor. Theory and research on basic interpersonal processes (interpersonal judgment, communication, social performance, attraction and affiliation) and current models of interaction.

453 Attitude Formation and Change (3)
Prerequisite: Psych 351 or consent of instructor. An intensive study of the theories of attitude formation and change, stressing research methodologies and measurement strategies in this area. (2 hours lecture, 3 hours laboratory)

455 Small Group Process (3)
Prerequisite: Psych 351. Theories and methods of research used in the study of small group phenomena.

459 Individual Differences (3)
Prerequisite: Psych 161. The nature, extent and correlates of human individual differences with an emphasis on methodology.

461 Group Psychological Testing (3)
Prerequisite: Psych 161 or equivalent. Intelligence, aptitude, interest, and personality testing. Theory, construction, evaluation, interpretation and uses of psychological tests.

463 Experimental Child Psychology (3)
Prerequisites: Psych 161 or equivalent, 202 and 361, plus junior-senior standing. Study in depth of selected methodological techniques and tactics for investigating and interpreting child and developmental psychological phenomena. Laboratory experience in experimental investigation. (2 hours, 3 hour laboratory)

465 Analysis of Variance (3)
Prerequisite: Psych 161. Application of analysis of variance techniques to research design and evaluation of data.

466 Social Science Computer Applications (3)
Prerequisite: Quantitative Methods 289 or consent of instructor. The use of computers in psychology. Batch processing; interactive computing; on-line experimentation.

467 Correlational Methods (3)
Prerequisite: Psych 161. The theory and techniques of correlational analysis.

471 Behavior Modification (3)
Prerequisite: senior standing or consent of instructor. An exposition and evaluation of theory, research and techniques for modifying human behavior. Consideration of human behavioral, cognitive and emotional disorders. Lectures supplemented by four hours of laboratory experience per week in which students work with multiply-handicapped children.

475 Psychopharmacology (3)
Prerequisites: Psych 321 or 15 units of biological science. Basic principles underlying the use of drugs and related substances to modify experience and behavior. Historical and cultural variations in drug usage. Psychological, medical and social potentialities and limitations of these techniques.

476 Psychophysiology of Mental Illness (3)
Prerequisites: Psych 341 and either 475 or 321 or six units or biological science or consent of instructor. The genetic, biochemical and neurophysiological bases of schizophrenia, affective and neurotic disorders; drug therapy of mental illness; relation of somatic therapy to other forms of psychiatric treatment.

481 Survey of Clinical Psychology (3)
Prerequisites: Psych 331, 341 and 461. Development and contemporary aspects of the field. Methods, diagnosis, therapeutic techniques, research, and problems.

496 Student-to-Student Tutorials (1-3)
See page 85.

499 Independent Study (1-3)
Prerequisites: completion of at least one upper division laboratory course and consent of instructor. Individual library study or experimental investigation under direction of a staff member. May be repeated for credit.

501A Proseminar (3)
Prerequisite: graduate standing or consent of instructor. A course to prepare beginning graduate students for more advanced courses. Areas stressed are sensation and perception, physiological psychology and learning.

501B Proseminar (3)
Prerequisite: graduate standing or consent of instructor. A course to prepare beginning graduate students for more advanced courses. Areas stressed are operant conditioning, personality, social psychology, and abnormal psychology.

510 Experimental Design (3)
Prerequisites: Psych 161 and 465. Principles and methods of planning and carrying out systematic investigations on the behavior of complex organisms, interdependence of experimental design and statistical evaluation of results, and the opportunity for practice in formulation of testable hypotheses.

515 Psycholinguistics (3)
(Same as Linguistics 515)

520 Seminar: Experimental Psychology (3)
Prerequisites: graduate standing, Psych 465 and 501A. Study in depth of the data, methods, problems and current developments in sensation-perception; animal learning; human motor and verbal learning; thinking and problem solving; and motivation. May be repeated for credit.

521 Seminar: Personality (3)
Prerequisites: graduate standing and Psych 501B. An intensive study of central problems in personality. Intensive study of current problems and theories in these areas. May be repeated for credit.

522 Seminar: Developmental Psychology (3)
Prerequisites: Psych 361 and graduate standing. Provides students with a thorough advanced-level introduction to theory and research in developmental psychology.

531 Individual Mental Testing (3)
Prerequisite: Psych 461. Study of the major tests of intelligence. Emphasis on practical experience in administration, scoring and interpretation of these instruments.

540 Proseminar: Community Psychology (3)
Prerequisite: admission to the M.S. Clinical/Community program. A seminar in community psychology covering its historical and philosophical roots, theoretical framework, research within the area, and selected current practical applications.

542 Proseminar: Clinical Psychology (3)
Prerequisites: Psych 481 (or equivalent); admission to M.S. Clinical/Community program. A general proseminar in clinical psychology, covering broad theoretical considerations as well as their relationship to clinical practice in testing, diagnosis, ethics, and psychotherapy.

544A Psychodiagnostics A (3)
Prerequisite: Admission to the M.S. Clinical/Community program. A skills course in conducting diagnostic interviews, writing case histories, and giving and scoring objective diagnostic tests and relevant issues in testing assessment. (2 hours lecture, 3 hours laboratory)

544B Psychodiagnostics B (3)
Prerequisites: Admission to the M. S. Clinical/Community program and successful completion of Psychodiagnostics A. A laboratory course covering administration, scoring, and interpretation of traditional projective tests and relevant issues in testing assessment and research. (2 hours lecture, 3 hours laboratory)

546 Behavior Therapy (3)
Prerequisite: Psychology 471. An advanced course in behavior influence. The student will design and execute a project in a clinical setting. (2 hours lecture, 3 hours laboratory)

551 Seminar: Social Psychology (3)
Prerequisites: graduate standing and Psyche 501B. An intensive study of central problems and major theories in the field of social psychology. May be repeated for credit.

560 Individual Therapy Techniques (3)
Prerequisite: satisfactory completion of the first year's work in the M.S. in Clinical/Community Psychology program. A lecture and discussion class covering specific therapy techniques and general approaches to individual psychotherapy. Besides dealing with theoretical material, the student will be expected to question and discuss the material's practical application to the clients he is seeing in his field work.

562 Group Therapy Techniques (3)
Prerequisites: satisfactory completion of the first one and one-half years' work in the M.S. in Clinical/Community Psychology program. A lecture and discussion class covering specific techniques and general approaches to group psychotherapy. Beside dealing with theoretical material, the student will be expected to question and discuss the material's practical application to the clients he is seeing in his field work.

564A,B Field Work Seminar (3,3)
Prerequisite: satisfactory completion of first year's work in the M.S. in Clinical/Community Psychology program. A seminar and discussion class covering specific theoretical and applied problems arising from the student's field work experience. Must be taken concurrently with the appropriate field work course.

566A,B Field Work (4,4)
Prerequisites: Satisfactory completion of first year's work in the M.S. program in Clinical/Community Psychology. Supervised clinical work experience in various mental health agencies. Must be taken concurrently with the appropriate field work seminar. Minimum of 12 hours field experience per week.

598 Thesis (3-6)
Prerequisites: formal admission to candidacy and consent of instructor. The writing of a thesis based on a major study or experiment in psychology.

599 Independent Graduate Research (1-3)
Prerequisites: graduate standing and consent of instructor. Individual library study or experimental investigation under direction of a staff member. May be repeated for credit.

DEPARTMENT OF RELIGIOUS STUDIES

FACULTY
Donald Gard
Department Chair
Daniel Brown, Morton Fierman, Joseph Kalir, James Santucci

BACHELOR OF ARTS IN RELIGIOUS STUDIES
This program is designed to encourage students to acquire the intellectual tools and scholarly background required for a critical understanding of the forms and traditions of religion that have appeared in human culture.

Students in fields other than religion are encouraged to ask the questions which pertain to the real excitement at the boundary lines where the usual studies converge. The aim of each course is an open and nontraditional examination of ultimate questions as they apply to contemporary situations. The relevance of belief in both Eastern and Western civilizations for the cultural development of man is examined. An understanding of prejudice, war and other dimensions of religious value systems may be gained.

Major in Religious Studies
Six hours of introduction to world religions and six hours of a senior seminar in two semesters on contemporary religious issues are required.

In addition, the student will be asked to choose at least six hours of courses in lower or upper division studies from each of the following categories:

1. *The History and Sociology of Religion:* religion studied as a cultural phenomenon with the historical context; its development and controversies; religion and science; religion and economics; the sociology of religion
   Courses to be selected from:
   Art: 201A,B
   History: 412A,B, 417A,B, 425B, 466B
   Sociology: 458
   Anthropology: 421
   Religious Studies: 330, 331, 333, 334, 345A,B, 405, 406, 415, 416, 430, 445, 476, 480, 485, 486

2. *The Phenomenology of Religion:* religion as a human phenomenon; the psychology of religion; the philosophy of religion; religion and poetry, the arts.
   Courses to be selected from:
   Philosophy: 312, 323, 370
   Interdisciplinary Center: 402, 403, 404, 451
   Religious Studies: 343, 375, 376, 377, 431, 433, 434, 450, 459, 475, 477, 480, 481, 485, 486

3. *Comparative Religion:* a study of religious traditions and practices in Western and non-Western cultures: religious scriptures; comparative theology; major religious figures.
   Courses to be selected from:
   Interdisciplinary Center: 303, 422
   Religious Studies: 250, 280, 330, 331, 332, 333, 334, 360, 376, 415, 416, 430, 432, 435

Courses in other schools and departments may be acceptable upon consultation with the chair of the Department of Religious Studies.

Minor in Religious Studies
The minor in religious studies is composed of at least 20 upper division units in religious studies exclusive of the general education requirements. For further information, contact the department chair.

RELIGIOUS STUDIES COURSES

100 Introduction to the Study of Comparative Religion (3)
An introduction into the beliefs, thought-patterns and religious impact of prescientific people, especially those of the Australian aborigines, the African tribal communities, the North American Indians, the ancient Egyptians and Vedic Indians.

110 World's Great Religions (3)
Religious impulse as viewed from the philosophical standpoint. An attempt will be made to analyze and to compare religious experience as expressed in Christianity, Islam, Buddhism, Hinduism, Judaism, etc.

111 Problems in the History of Religious Thought (3)
Prerequisites: Philosophy 110 or consent of department chair. An examination of some of the perennial problems that have appeared in the religious traditions of both East and West.

200 Introduction to Christianity (3)
An examination of the Christian scriptures and their background in the light of modern exegesis with special emphasis on the Synoptic Gospels. The second half of the course will examine written creeds and liturgical formulae associated with the Orthodox, Roman and Protestant communions.

250 The Religion of Islam (3)
The religion of Islam, its background and main teachings: the rise of Islam, the caliphate, Islamic theology, teachings, institutions, mysticism and philosophy.

280 Sects and Cults (3)
Prerequisites: Philosophy 110 or Religious Studies 111 or consent of instructor. The origin, development and interrelations between Apollonian (Gnostic) and Dionysian sects in Western religion.

330 Judaism: From the Beginning to the Middle Ages (3)
The historical role of the religion of the Jews including the Genesis and the development of Judaism.

331 Judaism: From the Middle Ages to the Present (3)
The history and contemporary social significance of the religion of the Jews from the Middle Ages to the present, with emphasis upon contemporary Judaism. Special emphasis will be devoted to the distinctive characteristics of Orthodox, Conservative and Reform Judaism.

332 The Land of the Bible: Everyday Life in Old Testament Times (3)
How people lived in the Mediterranean world in the first century of the Christian era. To deepen the understanding and kindle the imagination of the readers of the Old Testament in the light of the staggering progress which has been made in Biblical archaeology during the course of the present century.

333 Hebrew Prophets (3)
Lectures and seminar discussions dealing with the cultural, historical, values of and contemporary application of Isaiah, Second Isaiah, Jeremiah, Ezekiel and the minor prophets. (Same as Comparative Literature 305)

334 Wisdom Literature (3)
The interpretation of values in Proverbs, Job, Ecclesiastes, Ecclesiasticus, the Wisdom of Solomon, Egyptian and Mesopotamian Wisdom writers as applied to the modern world.

335 Christianity and Judaism (3)
Differences and similarities between Christianity and Judaism. A study of the age of transition from Judaism to Christianity with an emphasis on their respective origins and destinies.

343 The Bible and Its Ethics (3)
The principal features of the ethics of the Bible, its significance, its problems and its meaning for our modern times. The ideals of the ethics of the Bible and its approach to the problems in our society.

345A History and Development of Christian Thought: The Beginning to 1274 (3)
The development of Christian thought from apostolic times to the death of Thomas Aquinas against the background of Old and New Rome, the Great Councils, the Middle Ages, and the marriage of faith and reason.

345B History and Development of Christian Thought: 1275 to the Present (3)
Prerequisite: Religious Studies 345A or consent of instructor. The development of Christian thought from the death of Thomas Aquinas to the present, against the cultural and philosophical background of the successive ages of scholasticism, the renaissance, baroque, reason and revolution, and the modern world.

360 Religious Thought of Islam (3)
The various theologies of Islam, especially the theology of Mohammad derived from the Qur'an. Influence of biblical monotheism on Islam. Orthodoxy versus Rationalism in early Islam as well as in other schools and thoughts.

375 Religion and the Cultural Crisis (3)
The role of religion in contemporary cultural crises and in history with such topics as the development of the family unit, sexual relationships and forms of worship.

376 Dimensions of Religion (3)
The great themes of religious thought viewed objectively and subjectively in history and in the present day are studied as a basis for understanding religious relevance and application. Seminar and discussion presentation.

377 Religious Symbolism and Mysticism (3)
Discussion of symbols and ideas inherent in religious thought. Use of Jungian theory. Topics covered are myth, centering, grounding, mandala, internal religious space, life and death, spiritual energy, mother god, father god, child, etc. Theoretical and practical applications.

378 Directions in Biblical Archeology (3)
A survey of the present state of Biblical archeology which plays such a prominent part in our time. What archeology is. The definition of Biblical archeology and an evaluation of its recent discoveries, including the Dead Sea Scrolls.

405 Indian Religions (3)
Discussion of all the major religions of ancient India. Special emphasis will be placed upon the Upanisads, Buddhism and Vedanta. May be repeated for credit.

406 Indian Religions (3)
Prerequisite: Religious Studies 405 or consent of instructor. Discussion of all the major religions of ancient India. Special emphasis will be placed upon the Upanisads, Buddhism and Vedanta. May be repeated for credit.

415 Religions of China and Japan (3)
Prerequisite: Religious Studies 111 or Philosophy 110 or consent of instructor. The major religions of China and Japan will be discussed with special emphasis upon Taoism, Buddhism and Confucianism. Chinese influence on Japan and the Japanese reaction to this influence, also will be discussed.

416 Religions of China and Japan (3)
Prerequisite: Religious Studies 111 or Philosophy 110, Religious Studies 415 or consent of instructor. The major religions of China and Japan will be discussed with special emphasis upon Taoism, Buddhism, and Confucianism. Chinese influence on Japan and the Japanese reaction to this influence, also will be discussed.

430 Rabbinic Literature: The Writings of Law and Lore (3)
The historical, sociological and cultural background of the beginnings of the Talmud. The Talmud as one basis of modern ethics. Special stress will be laid on: man as a moral being, free will, labor, justice, truth and truthfulness, peace, charity, parents and children, country and community.

431 Jewish Mythology, Religion and Mysticism (3)
Prequisite: Religious Studies 331 or consent of instructor. The principal features of Jewish mysticism, its inner significance, problems and meaning. An analysis of some of its most important phases. A new illustration of the function which Jewish mysticism has had at varying periods, of its ideals and of its approach to the various problems.

432 The Worlds of Martin Buber, "The Philosophy and Theology of Martin Buber" (3)
A detailed and critical study of Buber's views concerning relationship of man to God and man to man.

433 Myth and Legend in Ancient Israel (3)
Prerequisite: Religious Studies 330 or consent of instructor. Comparative folklore and mythology of the Old Testament. The myths and stories of the Old Testament.

434 The Psalms (3)
Major concepts in the Psalm Literature; structure, authorship and style of individual Psalms; historical, theological, intellectual and political backgrounds of the Books of Psalms; the significance of the Psalms for our time.

435 Old Testament Criticism (3)
The Old Testament, its development and a literary study of its contents.

436 Women in Jewish Tradition (3)
A study of the role of women in Jewish tradition, from Bible times until the present, with special attention to her contributions and influences upon Judaism.

445 Religion in Western Culture (3)
An examination of groups and individuals whose writings and ideas have been formative in the development of Western culture from classic times to the present.

450 Ritual and Symbol (3)
Prerequisites: Philosophy 110, Religious Studies 111 or consent of instructor. A study of the nature of ritual and symbol in our culture, taking into account the contributions of psychology.

459 Radical Catholicism: Its theology, philosophy, and social movements (3)
The key personalities, writings and movements involved with Radical Catholicism in the 20th century, including the Catholic Worker Movement, priest-workers in France, the Dutch Church, Latin-American liberation theology and antiwar activism in the United States.

475 Anxiety, Guilt and Freedom (3)
The distinction between psychiatry and religious methods of understanding basic human emotions will be examined together with an analysis of terms such as "authority", "God", "faith", "forgiveness", "sin", "error", "repentance", "sex" and "absolution".

476 The Holocaust: The Destruction of European Jewry 1933-1945 (3)
The ordeal of European Jewry during World War II as reflected in art, music, drama, fiction, poetry, historical, psychological and religious writing.

477 Philosophical Foundations of Religious Education (3)
Philosophical foundations of education and their impact on contemporary educational theory and practice in religious schools in the United States and courses in religion in public schools and colleges and universities.

480 Theology and Contemporary Life (3)
Prerequisite: Religious Studies 345 or consent of the instructor. An exploration of major theological issues and their relevance for contemporary social problems: God, nature, man, sin, revelation, reconciliation; culture and creativity, marriage and divorce, poverty, war, race, international relations, political and economic authoritarianisms.

481 Zoroastrianism (3)
Prerequisite: Philosophy 110. A detailed account of the life and teachings of Zoroaster as presented in the *Avesta*, with a discussion of its relationship to Judaism, Christianity and the Greek philosophers Heraclitus, Pythagoras, Plato.

485 Major Contemporary Religious Thinkers (3)
Prerequisites: Philosophy 110, Religious Studies 111 or the equivalent. A detailed and critical study of religious thinkers contemporary to the modern world. May be repeated with different content for additional credit.

486 Major Contemporary Religious Topics (3)
Prerequisites: Philosophy 110, Religious Studies 111 or the equivalent. An in-depth inquiry into modern topics of a religious nature related to social, political psychological trends. May be repeated with different content for additional credit.

499 Independent Study (1-3)
Supervised research projects in religious studies to be taken with consent of instructor and the department chair. May be repeated for credit.

DEPARTMENT OF SOCIOLOGY

FACULTY
John Bedell
Department Chair

Takenori Aso, Donald Baker, Tony Bell, Dennis Berg, Jonathan Brower, Carol Copp, Helaine Feingold, Margaret Fisher, Ronald Hughes, Perry Jacobson, Hilla Israely, Pat Lackey, Michael Mend, G. Nanjundappa, Rae Newton, Bartolomeo Palisi, Houshang Poorkaj, Lorraine Prinsky, Gerald Rosen, Libby Ruch, J. Rex Smith, C. Michael Stuart, J. Morgan Thomas, Clarence Tygart, Ernest Works, Troy Zimmer

BACHELOR OF ARTS IN SOCIOLOGY

The major in sociology provides knowledge about how groups, social positions and social ideologies affect people's behavior. This type of knowledge provides a good background for occupations in which people either supervise or help others, such as social work, government services business careers, and teaching. A B.A. in sociology prepares the student to do graduate work in sociology and related fields of study.

The major in sociology requires 36 units made up of 15 required units and 21 elective units. Twenty-seven units must be in upper division courses and there may be a total of nine lower division units. Majors may not take more than six units of Internship or six units of Independent Study; they may take a combination of the two for a total of nine units.

Sociology 201 is prerequisite to all sociology courses.

	Units
Required courses:	15
Sociology 201 Introductory Sociology (3)	
Sociology 203 Introduction to Sociological Analysis (3)	
This course is a prerequisite for Sociology 331A, 331B and 331X and should be taken prior to completion of the sophomore year.	
Sociology 331A,B Social Research Methods (3,3)	
This course must be taken in sequence or as Sociology 331X (6 units) and should be completed before the student becomes a senior.	
Sociology 481 Sociological Theory (3)	

TEACHING MINOR IN SOCIOLOGY

For teaching credential purposes a minor consists of 21 units in sociology, distributed as follows:

	Units
Sociology 201 (3)	
Sociology 202 or 411 or 413 or 431 (3)	
Sociology 341 or 451 (3)	
Sociology 477 or 480 or 481 (3)	
Electives in sociology (9)	
Total	21

MASTER OF ARTS IN SOCIOLOGY

The program for this degree provides advanced study in general sociology. It offers an opportunity to broaden one's knowledge of society. to strengthen skills or sociological analysis and to do research in depth in an area of particular interest. It may be used as preparation for study toward the doctorate in sociology, for community college teaching, participation in research or for a variety of positions in business and industry, corrections, the community or government.

Prerequisites

Students must meet the university requirements for admission to graduate standing. Please see the section of this catalog on "Admission of Post-baccalaureate and Graduate Students."

In order to be accepted as a conditionally classified sociology major, students must have a GPA of 2.5 or better in the most recent 60 units of college work and a GPA of 3.0 (B) or better for all work in sociology. A minimum of 18 upper division units in sociology is required, including the following courses or their equivalents:

Sociology 331A Social Research Methods (design, collecting data) *and*
Sociology 331B Social Research Methods (elementary statistics) *or*
Sociology 331X Social Research Methods (combines meterials covered in 331A,B)
Sociology 481 Sociological Theory

Courses in methods, statistics and theory must have been completed within the last five years prior to application.

Students will be accepted as conditionally classified sociology majors with either course or GPA deficiencies. Deficiencies must be corrected, however, within one year of admission to the program.

Students will be classified upon the fulfillment of the above prerequisites, and after an approved study plan has been developed.

Study Plan

The study plan for the degree must be approved by the student's adviser and must include the following:

	Units
I. Sociology 502, Research Process: Requires the completion of a research project, including such elements as theory construction hypotheses formation, sampling, survey construction, data collection and data analysis*	3
II. Core Requirements**	9
A. Sociology 530, Advanced Statistical Analysis. Prerequisite: Sociology 502. Advanced multivariate procedures, both inferential and correlational.	
B. Sociology 531. Advanced Methods and Measurements in Sociology. Prerequisite: Sociology 502. A critical analysis of basic problems of social research. Causal inferences, value bias and measurement, especially the construction of scales.	
C. Sociology 581, Theory. Examination of selected theories using the framework of the basic elements and key problems in constructing and evaluating sociological theories.	
III. Graduate seminars Three graduate seminars in sociology Courses are chosen consistent with the student's goals	9
IV. Related field, independent study/research, or graduate sociology	3
IV. One upper division or graduate course in sociology or related fields (excluding internships if qualifying alternative is other than thesis). May be in independent study. Course is chosen consistent with student's goals.	
V. Qualifying alternatives ***	6
A. Sociology 596, Community College Symposium: A six-unit course covering introductory sociology, social problems, and marriage and the family, with emphasis upon teaching preparations. An oral examination is included.	
B. Sociology 597, Project: Agency Placement (20 hours per week for one semester or 10 hours per week for two semesters.) Choice of this alternative will be limited by the availability of positions which meet the level of supervision and training for which credit may be given. Terminal evaluation will be an oral examination by the master's committee.	
C. Sociology 598, Thesis (Expected of all Ph.D. oriented students) To complete the requirements, the candidate must successfully defend the thesis in an oral examination by a committee.	
One of the above qualifying alternatives is chosen, consistent with the student's goals.	

For further details and advisement, please consult the graduate program adviser for the Department of Sociology. See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin.*

*Students must enroll in Sociology 502 their first semester in residence. The final examination in Sociology 502 will be developed by a standing committee of the Sociology Department. Student exams will be anonymous. This exam will be the screening exam. Successful completion of the screening examination (grade of A or B) is prerequisite to entering core courses, and prerequisite to advancement to candidacy. Students who do not successfully complete the examination will not be allowed to complete the graduate program. The exam may be taken no more than two times. No more than 12 units of graduate work (including Sociology 502) will count toward the master's degree until successful completion of the screening exam.

**Students must receive 3.0 average in core courses in order to complete the master's degree.

***Students will be limited to applying one qualifying alternative to their degree. More than one alternative may be taken subject to availability of positions in the community college symposium and agency placement alternatives. Registration in these courses is limited to students who have completed at least 18 units of work toward the M.A. degree. Those 18 units must include the nine units of successfully completed core requirements.

Incompletes are not to be used in computing eligibility to enter qualifying alternatives.

In the agency placement alternative, no credit will be given to students for their previous or current employment.

SOCIOLOGY COURSES

201 Introduction to Sociology (3)
A general introduction to the basic concepts of sociology, and the scientific study of human society. Among topics included are social interaction, culture, personality, social processes, population, social class, the community, social institutions and sociocultural change.

202 Social Problems (3)
Study of the extent, causes and consequences of a number of social problems, with emphasis on 20th-century America. Problems are viewed in the context of the changing society.

203 Introduction to Sociological Analysis (3)
Prerequisite: Sociology 201. A comprehensive introduction to the logical, conceptual and empirical foundations of a scientific analysis of human behavior. Emphasis on how the theoretical, empirical and statistical aspects of sociology are interrelated. These interrelationships will be applied to a few content areas in sociology.

300 Introduction to Social Welfare (3)
A survey of the history, philosophy and development of thought in social welfare; the social work methods (casework, group work and community organization); social work as a career objective; areas of social work practice; current availability of employment in the field and qualifications necessary.

331A Social Research Methods (3)
Prerequisite: Sociology 203 or consent of department. Research design and methods of gathering data, especially by interview and questionnaire, are emphasized. Among other topics are the role of theory in research, and sampling methods and problems. In addition, the student will be introduced to the techniques and equipment essential to data processing and analysis.

331B Social Research Methods (3)
Prerequisites: Sociology 203 and 331A, or consent of department. Elementary statistical analysis of social data is emphasized, with some consideration of problems of measurement and of the writing of research reports. (2 hours lecture, 2 hours activity)

331X Social Research Methods (6)
Prerequisite: Sociology 203, or consent of instructor. The content of Sociology 331A,B will be integrated. Students may take the course as a six-unit, one-semester course or as two consecutive courses of three units each. The content of this course is the same as Sociology 331A,B.

341 Social Interaction (3)
Inquiry into the social and sociopsychological dimensions of group behavior and the socialization of the individual. Social interaction and its impact on the individual and personality formation.

342 Experimental Social Psychology (4)
Prerequisite: Sociology 203. For sociology majors who are unfamiliar with the experimental method. Focus will be on substantive sociological topics that are amenable to laboratory and field experimentation, and the design of such experiments. Practical aspects of conducting an experimental inquiry will be stressed.

345 Sociology of Communication (3)
Study of the social processes involved in communicating with symbols—verbal, visual and "body-language"—in both interpersonal settings and the mass media.

348 Collective Behavior (3)
Characteristics of crowds, mobs, publics. Analysis of social movements and revolutions, their relation to social unrest and their role in developing and changing social organization.

360 Human Ecology (3)
Ecological approach to social phenomena. Analysis of ecosystem in terms of interdependencies involving population, environment, technology and organization; an examination of social and demographic characteristics of simple and complex societies.

361 Population Problems (3)
Population composition, growth and movement. Social factors affecting birth rates, death rates and migration. Attention is given to the population of the United States and to selected areas of the world.

362 Population Analysis (3)
The demographic measures and concepts of the three basic factors of the population growth, viz., fertility, mortality and migration will be discussed as far as it is feasible without assuming from the students the knowledge of mathematics beyond high school algebra.

371 Urban Sociology (3)
The population and ecology, patterns of growth, institutions, characteristic social interaction, values and problems of the urban community.

400 Sociological Internship (1-3)
Prerequisite: consent of instructor. Supervised field experience in community agencies and institutions permitting application of relevant sociological material in practical settings. Prerequisites vary depending on specific internship, but would require students with good academic records and course background relevant to specific internship.

401 Cycles in Man and Society (3)
Investigation of sociological, biological, economical and psychological research on biological and sociological cycles and its implication for the study of man in society. A synthesis of current research will be emphasized.

411 Criminology (3)
The extent, causes and control of criminal behavior. Includes study of the criminal law, causal factors and theories, correctional institutions, probation and parole, and preventive efforts.

413 Juvenile Delinquency (3)
Juvenile delinquency as a social problem. Sociological study of the causes of delinquent behavior, and programs of control, treatment and prevention.

414 Sociology of Public Health (3)
An introduction to the social and organizational context of health care in the American community: analysis of social forces, processes and relationships which influence or determine the nature of health service.

415 Sociology of Corrections (3)
Prerequisite: Sociology 411 or 413 or consent of instructor. Background for students interested in the study of specific social problems. The application of basic sociology to analyze current problems and programs in probation, parole and correctional institutions. Intended to provide a conceptual framework for students planning careers in the field of corrections.

416 Sociology of Alcoholism (4)
Prerequisite: Sociology 202. Successful completion of Sociology 451, 455 and 456 is advisable. Sociological analysis of alcoholism. The socioemotional causes and consequences of this type of drug addition.

425 Comparative Social Change (3)
Analyses of theories of change, current trends in modern society and methods of prediction of change.

430 The Individual, Society, and Prejudice (3)
The social psychology of intergroup prejudice. An analysis of research and theory on the dimensions, causes, consequences and reductions of intergroup prejudice.

431 Minority Group Relations (3)
Study of racial, national and religious minorities, especially in the United States. Includes study of discrimination, prejudice, different patterns of intergroup adjustment, and attempts to change group status.

432 Afro-Sociology (3)
To identify and analyze the sociological factors which have greatly influenced the Afro-American society; and to explore the sociological factors which have conditioned the black psyches, consciousness and rage.

436 Social Stratification (3)
Social class structures and their functions. Different styles of life; determinants of class status; vertical social mobility; change in class systems.

442 Small Groups (3)
Prerequisites: Sociology 341, 342, or consent of instructor. Theories, methodology, and studies in the area of small group research. Covers such topics as communication channels, coalition formation, group cohesion, leadership and conformity in groups.

444 Contemporary Japanese Society (1)
A sociocultural analysis of contemporary Japanese society with emphasis on structural and institutional changes.

449 Social Epidemiology (3)
Prerequisite: Sociology 331B or consent of instructor. Analysis of the relationship of disease distributions and patterns to the demographic, social and cultural characteristics of a population.

450 Sociology of Sex Roles (3)
A sociological analysis of the effect of traditional and nontraditional sexual stereotypes on attitudes and behavior within the family, the educational system, the economic system and the legal system.

451 Sociology of the Family (3)
The family as a social institution. Historical and cross-cultural perspectives; social change affecting marriage and the family; analysis of American courtship and marriage patterns; the psychodynamics of family life.

452 The Sociology of Education (3)
The examination of education as a social process and a social institution. Topics will include the relationship between education as a social process and a social institution. Topics will include the relationship between education and sociology, the social functions of education with emphasis on the socialization process, the school and the community, and the school as a social institution.

454 Sociology of Aging (3)
Analysis of aging as a social process, with emphasis on sociological theories of aging, problems of adjustment, demographic changes and policy issues.

455 Medical Sociology (3)
Consent of instructor and upper division standing. Designed to provide the student with a comprehensive sociological perspective for interpreting medicine and medical behavior.

456 Mental Illness (3)
Sociological analysis of the process of production, recognition, and treatment of those behaviors commonly defined as mental illness. Mental illness, its diagnosis, definition and treatment are viewed and analyzed as social processes.

458 Sociology of Religion (3)
Theoretical analysis of religion as a social institution in complex societies. The structure and functioning of religious organizations; roles and role relationships; types of religious organizations and leadership; the relationships of religion to other social institutions; religion and social change.

460 Sociology of Death and Dying (3)
Dying as a social process; functions of bereavement behavior; fear of death and dying; death related rituals, demographic aspects of mortality; American death acceptance-denial controversy.

463 Political Sociology (3)
Theoretical perspectives; nature of power and authority; social structure and political institutions; elites and decision making; social influences on political behavior; political movements.

464 Contemporary Social Issues (3)
Application of social conflict theory to the analysis of controversial social issues and contemporary revolutionary movements in the world today; including the conditions leading to the development of social protest; the ideologies, goals, strategies, and outcomes of revolutionary and reform movements.

465 Law and Society (3)
The law and lawyers in the context of human society. Law as formal social control, variations in legal systems, social change and selected areas of law, the legal profession.

466 Deviant Behavior (3)
An advanced course in which the wide range of behaviors socially defined as deviant are dealt with from a variety of theoretical perspectives. Behaviors covered include drug addition, sexual deviance, delinquency, alcoholism and mental illness.

467 Sociology of Sport (3)
Examines the nature, position, functions, and growing importance of sport in contemporary

industrial society. Particular emphasis given to the relationships between structure, variety, and extent of sport activity and other institutional sectors in society.

468 Sociology of Socialism (3)

Application of sociological concepts and theories to socialism in the modern world. Socialism as a social movement in Europe and America; the strategies, goals, ideologies of socialist political parties; a survey of the economic, social, and political structures of contemporary socialist societies.

469 Modern Marxism (3)

The political, economic, and social thought of the principal Marxist theorists since Marx and Engels especially in Europe and America. The relationship of the varied Marxist schools of thought to the social thought of Marx and Engels and to non-Marxist social thought. The sociology of knowledge approach to interpretation of Marxist social thought.

470 Sociology of Occupations (3)

Sociological analysis of work roles in technologically advanced societies. Career patterns, occupational recruitment, job mobility, organizational demands. The nature and development of the professions, their ideologies and images.

473 Formal Organizations (3)

A sociological analysis of organizations such as schools, hospitals, industries, prisons and government industries. Included are such topics as self-actualization and alienation, human relations, communication, leadership, conflicts within and between organizations and impact on democratic institutions and social change.

477 Social Organization (3)

The behavioristic approach of B. F. Skinner and exchange theory are used to analyze social relationships in small groups. Focus on interaction, equality and inequality, personal attraction and deviance.

481 Sociological Theory (3)

A comprehensive survey of the main school of sociological thought, both European and American, with emphasis on *systems* of theory, methodology of theorists, curltural change and social institutions.

482 Sociology of Knowledge (3)

The study of social distribution of attitudes, beliefs and values; the acquisition of attitudes; attitude change; and the structure and function of beliefs.

484 Using Computers in Sociology (3)

Prerequissisites: Sociology 203, 331A, 331B, 331X or consent of instructor. A course to provide basic competence in the use of "canned" statistical programs in data analysis. Special problems in research design and data preparation relevant to computer analysis will be explored.

485 New Research Perspectives—Secondary Analysis (3)

Prerequisites: Sociology 331A, 331B, 331X or consent of instructor. Introduction to the special area of secondary analysis in social research. Possibilities for exploration, replication and extension will be assessed. Problems relevant to data retrieval and computer analysis will be explored using data from both small and large studies.

494 Directed Readings in Sociology (1-3)

Prerequisites: upper division standing and 15 units of sociology completed. Readings in a specialized area are directed and supervised by a faculty member. Examination and individual conferences are required.

495 Senior Seminar (3)

Prerequisite: senior classification. Open to sociology majors who have had the upper division coursework in the area of the seminar. Emphasis in the seminar will depend upon the particular specialty and training of instructor.

498 Seminar in the Sociology of Health Services Organizations (3)

Prerequisites: Sociology 414. Sociology 455 is recommended. Analysis of the organization and problems of health service programs and institutions.

499 Independent Study (1-3)

Prerequisites: at least 12 hours of sociology and consent of adviser. Student selects an individual research project, either library or field. The student must take appropriate undergraduate prerequisites and enroll with an instructor whose recognized interests are in the area of the planned independent study. Conferences with the adviser as necessary, and the work culminates in one or more papers. May be repeated for credit.

501 Seminar: Selected Topics in Societal Structure and Process (3)
Prerequisite: consent of instructor. Analysis of a specialization within the study of society such as: socialization and personality; deviance; social change; institutional structure and process. May be repeated.

502 Research Process (3)
Requires the completion of a research project including such elements as theory construction, hypotheses formation, sampling, survey construction, data collection and data analysis.

511 Seminar in Crime and Delinquency (3)
Prerequisite: Sociology 411 or 413, or consent of department. Analysis of selected problems in the field of crime and delinquency with major emphasis upon independent investigation into the theoretical and research contributions on the causes, prevention and treatment of criminal and delinquent behavior.

530 Advanced Statistical Analysis (3)
Prerequisites: Sociology 331A,B or consent of instructor. Techniques most commonly utilized by sociologists but not covered in Sociology 331A,B are studied. The techniques deal primarily with multivariate analysis such as tests of significance, tests for interaction, measures of association, regression analysis and factor analysis.

531 Advanced Methods and Measurements in Sociology (3)
Prerequisites: Sociology 331A,B, or their equivalents, or consent of department. A critical analysis of basic problems of social research. Causal inferences, value bias and measurement, especially the construction scales.

533 Seminar in Intergroup Relations (3)
Prerequisite: Sociology 431 or consent of department. Analysis of relations among ethnic, racial and religious groups throughout the world. Analysis of processes leading to, sustaining, and associated with changes in relations among such groups.

541 Seminar in Social Interaction (3)
Prerequisite: Sociology 341 or consent of department. Advanced social-psychological study of social interaction, including sociological factors in personality development and analysis of primary group behavior.

542 Practicum in Sociological Experimentation (3)
Prerequisites: Sociology 342, 331A,B, or consent of instructor. Designed to meet needs of students who desire practical training in experimental sociology. Students in the seminar will design and conduct an experiment in all its phases, including selecting a testable hypothesis, designing the appropriate equipment, producing the data, analyzing the results, and preparing the final report.

551 Seminar in Family Interaction (3)
Prerequisites: graduate standing; Sociology 502 and 451 or consent of instructor. The family as a social institution. Roles, socialization and family interaction.

573 Seminar in Large Organizations (3)
Prerequisite: Sociology 473 or consent of department. The analysis of large organizations, their structural and operating characteristics and the relationships between the organization and its members.

577 Seminar in Social Organization (3)
Prerequisites: Sociology 477 or its equivalent and consent of department. A critical treatment of various theoretical approaches to the analysis of social organization. Specific areas of social organization.

581 Theory (3)
Prerequisites: Sociology 481 or equivalent and consent of department. Examination of selected theories using the framework of the basic elements and key problems in constructing and evaluating sociological theories.

596 Community College Symposium (6)
Prerequisite: consent of adviser. Introductory sociology, social problems and marriage and the family with emphasis upon teaching preparation. Includes an oral exam.

597 Project: Agency Placement (6)
Prerequisite: consent of adviser. Twenty hours per week for one semester or 10 hours per week for two semesters. Choice of this alternative will be limited by the availability of positions which meet the level of supervision and training for which credit may be given. Includes an oral exam conducted by a master's committee.

598 Thesis (3)
Prerequisites: acceptance as a candidate for the M.A. in Sociology, and approval of the topic. Individual research under supervision, reported in a thesis, and defended successfully in an oral examination conducted by a faculty committee. Must be taken two semesters for a total of six units.

599 Independent Graduate Research (1-3)
Prerequisite: consent of graduate adviser and department. Individual research on either a library or empirical project, with conferences with the adviser as necessary, culminating in one or more papers. May be repeated for credit.

DEPARTMENT OF SPEECH COMMUNICATION

FACULTY
Lee Granell
Department Chair
Ralph Beckett, Herbert Booth, Daniel Crary, Robert Emry, George Enell, Joyce Flocken, Kaye Good, Donald Kaplan, Lucy Keele, Patrick McDermott, Michael Metz, Max Nelson, E. Ray Nichols, Norman Page, Glydon Riley, Philip Schreiner, Arden Thorum

Coursework in the Department of Speech Communication investigates individual and group communication as a part of the larger process of human interaction. Such investigation analyzes past theories of communication and persuasion as well as contemporary communication practices in business, politics, religion and private life. It examines the essential qualities and varieties of oral language, the physiological production of speech, the nature and treatment of communicative disorders, and the means used to effect social control and to disseminate information.

The major in speech communication for the bachelor of arts degree requires a minimum of 36 units, at least 24 of which must be in 300- and 400-level courses.

Course programs are planned (1) to prepare students who seek a liberal arts emphasis in speech communication as a means for becoming intellectually independent citizens and consumers, (2) to prepare students who seek to become communication experts in business or government, (3) to prepare students who seek to apply communication skills in the ministry, law, business or other areas in which effective communication is basic, (4) to prepare students for graduate study, (5) to prepare students who seek a teaching credential, (6) to prepare students for hospital, clinic, community center and private practice in communicative disorders.

Major in Speech Communication with Emphasis in Communication Theory and Process

Lower division requirements (6-12 units):
A course in public speaking: Speech Communication 102
A basic course in logic and evidence: Speech Communication 235

Upper division requirements:

Core Courses:
A course in speech communication research: Speech Communication 300
A course in group process: Speech Communication 324
A course in persuasion: Speech Communication 334
An advanced course in argumentation: Speech Communication 335
A general course in communicative disorders: Speech Communication 342

Any three courses from among the following:
A course in organizational communication: Speech Communication 333
A course in dyadic communication: Speech Communication 336
A course in communication theory: Speech Communication 420
A course in rhetorical theory: Speech Communication 430
A course in rhetorical history: Speech Communication 434
A course in rhetorical criticism: Speech Communication 438
Electives in communication theory and process, adviser approved, to complete the major.

Major in Speech Communication with Emphasis in Communicative Disorders

Lower division requirements:

A course in public speaking: Speech Communication 102
A minimum of three units of electives selected from Speech Communication 120, 138, 202, 230, 235 (excluding Speech Communication 100)

Upper division requirements:

A course in speech communication research: Speech Communication 300
A course in persuasion: Speech Communication 334
A course in phonetics: Speech Communication 341
A general course in communicative disorders: Speech Communication 342
Courses in speech science: Speech Communication 343 and 344

An advanced course in communicative disorders: Speech Communication 441
A course in audiology: Speech Communication 463
Electives in communicative disorders, adviser-approved, to complete the required 36 units.

TEACHING AND SERVICE CREDENTIAL PROGRAMS

The programs leading to both teaching and service credentials are in a period of transition. Students should make appointments to see their advisers concerning these programs.

MINOR IN SPEECH COMMUNICATION

For those who wish to have a minor in the field, the following speech communication courses are appropriate:

102, Public Speaking
138, Forensics
230, Contemporary American Speakers
235, Essentials of Argumentation and Debate
324, Small Group Communication
333, Communication in Business and Industry
334, Persuasive Speaking
335, Advanced Argumentation
336, Interviewing: Theory and Process
342, Survey of Problems in Communication
420, Communication Theory
430, Classical Rhetorical Theory
434, American Public Address
437, Internship: Organizational Communication
438, Principles of Rhetorical Criticism
480, Rhetoric of Racial Dissent

Students desiring to pursue a minor in speech communication with application to a specific major are invited to consult with an adviser in the Department of Speech Communication.

MASTER OF ARTS IN SPEECH COMMUNICATION

This degree, with concentrations in communication theory and process or communicative disorders, is a coordinated program of graduate studies to provide incentive for intellectual growth, to contribute to improvement in teaching and professional advancement, and to provide a sound basis for continued graduate study in speech communication. The student is expected to demonstrate a high degree of intellectual competence and scholarly discipline, to evaluate critically, and to show mastery of his field of concentration.

Prerequisites

Applicants must meet the university requirements for admission in conditionally classified or classified graduate standing (see the section of this catalog on admission of graduates).

Conditionally Classified Standing

1. A student must possess a baccalaureate degree from an accredited institution with a major in speech communication consisting of no less than 24 upper division units of study. Students with baccalaureate degrees in fields other than speech communication must complete a minimum 24-unit program of adviser-approved studies supporting the area of

emphasis prior to admission to conditionally classified standing.
2. A minimum 3.0 GPA in all upper division work in the major is required.
3. Three letters of recommendation on departmental forms and a letter stating the applicant's professional objectives are required.

Classified Standing
1. Enrollment in Speech Communication 500 (Seminar in Speech Research).
2. Acceptance by the graduate advisory committee.
3. Completion and approval of a study plan of at least 30 units of advisory committee approved studies.
4. Successful completion of an oral qualifying examination to be taken prior to completion of no more than nine units of graduate studies approved by the student's graduate committee chair, and demonstration of effectiveness in initial graduate studies.

Study Plan
The degree study plan will include at least 30 units of advisory committee approved graduate studies, 15 units of which must be in 500-level courses. Each program will have at least 15 units in one of the areas of concentration; a core of six units, to include Speech Communication 500, Seminar in Speech Research, and Speech Communication 596, Non-Thesis Research, *or* Speech Communication 598, Thesis; and six units of adviser-approved supporting courses in related fields. A written comprehensive examination is required of all candidates.

For further information, consult the Department of Speech Communication.

See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin.*

SPEECH COMMUNICATION COURSES

100 Introduction to Personal Communication (3)
Investigation of the role and use of communication in modern society. Emphasis on the issues and occasions which prompt the individual to communicate orally and the ways he may evaluate those issues and prepare discourse so as to participate in meaningful dialogue regarding them. Student presentations required.

102 Public Speaking (3)
Theory and presentation of public speeches, including an analysis of determinants of comprehension and attitude formation; selection and organization of speech materials, development of delivery skills, and evaluation of message effectiveness. Student presentations required.

120 Meetings and Organizations (3)
The structure of organizations and the use of oral communication in meetings: management of and participation in groups, including use of parliamentary procedure and problem-solving techniques. Student presentations required. Non-majors in speech communication may repeat for credit.

138 Forensics (2)
Investigation and practice in the background, format procedures, and evaluation criteria of the various forensic events. Students must participate in at least two intercollegiate tournaments. May be repeated for credit. (More than 6 hours of classwork for each unit of credit)

200 Personal Communication (3)
The analysis of oral communication designed to relate rhetorical theory to interpersonal message development, interpretation and response. Student presentations required. Not open for credit to those who have completed Speech Communication 100.

202 Voice and Articulation (3)
Prerequisite: Speech Communication 100. Lecture: introductory study of voice and speech sound articulation processes and characteristics from the point of view of the speech sciences. Laboratory: student works toward development of flexibility in his own voice and articulation patterns.

230 Contemporary American Speakers (3)
Prerequisite: Speech Communication 100. Speeches of prominent figures are examined for motives, ideas and devices for managing discourse. Content analyzed to discover the extent to which the speeches reinforce or challenge traditional values.

235 Essentials of Argumentation and Debate (3)
Prerequisite: Speech Communication 100 or consent of instructor. Investigation of the forms and skills of debate in our society. Use of evidence and case construction are emphasized. Substantive and educational debate are considered.

300 Introduction to Research in Speech Communication (3)
Prerequisite: open only to speech communication majors. Designed to orient majors to the field of speech communication. Special emphasis is on understanding and using the body of professional literature in speech communication.

301 Speech for Teachers (3)
Prerequisite: Speech Communication 100 or graduate standing. Designed to help teachers to use speech and dramatized activities effectively in the classroom. The normal speech development of children is examined, and consideration is given to the identification and handling of speech, hearing and listening problems.

302 Communication With the Deaf (3)
The history of deaf education in the United States. Students will develop skills in manual communication, including finger spelling and sign language.

304 Listening: Message Reception and Analysis (3)
Prerequisite: Speech Communication 100 or 102. Examination of listening as a principal form in oral communication, including theory, self-development and procedures through which competence in reception, analysis and evaluation of messages can be improved. Attention is given to language as it affects the interpretation of messages and the relationships among individuals.

309 Quantitative Research Design (1)
General introduction to empirical research methodology in speech communication theory. Focuses on empirical/scientific approach to the study of speech communication with emphasis on design, control and hypothesis testing.

310 Introduction to Data Analysis (1)
Prerequisite: Speech Communication 309 or consent of instructor. General introduction to data analysis in speech communication research with emphasis on the application of commonly used statistics to hypothesis testing, and a consumer-oriented approach to the use of the computer as a practical research tool.

324 Small Group Communication (3)
Prerequisite: Speech Communication 100. Study and practice of the principles of group dynamics, interpersonal communication, and the process by which individuals work effectively in the solution of problems, share ideas, and become sensitive to the environment in which they work with others.

333 Communication in Business and Industry (3)
Prerequisite: Speech Communication 100. The nature and scope of internal communications in business and industry, with a view toward management's responsibility in overcoming the barriers to effective communication. Particular emphasis is given to the interview, conference, and briefing sessions.

334 Persuasive Speaking (3)
Prerequisite: Speech Communication 102 or equivalent. Investigation of the problems and techniques of a series of speeches directed toward a predetermined goal: emphasis on progressive use of persuasive materials.

335 Advanced Argumentation (3)
Prerequisite: Speech Communication 235 or consent of instructor. Argument as applied to advocacy; special attention is given to logic and evidence as related to analysis of significant issues.

336 Interviewing: Theory and Process (3)
Prerequisite: Speech Communication 333 or consent of instructor. Theory and process of communicative interviewing. Profit and nonprofit organizations in the community provide the settings for applying theory and gaining experience. Case analysis and simulation are also utilized.

338 Intercollegiate Forensics (2)
Directed activity in debate and other forensic events. Participation in intercollegiate competition is required for credit. May be repeated for credit. (More than 6 hours of classwork for each unit of credit)

341 Introduction to Phonetics (3)
Prerequisite: Speech Communication 100 or graduate standing. The analysis and classification of phonemes of American English; the use of the International Phonetic Alphabet; the various factors influencing articulation and pronunciation. Includes work in language laboratory.

342 Survey of Problems in Communication (3)
A survey of the subject matter and principles of communicative disorders, including the role of school personnel, classification of speech and hearing disorders. Observation, lecture, films and demonstrations are utilized.

343 Speech and Hearing Science, A (3)
Prerequisite: Speech Communication 100. The first course in speech and hearing science covers the following major units of study: normal embryology, basic neuroanatomy, basic neurophysiology, overview of the neurological basis of speech. (2 hours lecture, 3 hours laboratory)

344 Speech and Hearing Science, B (3)
Anatomy and physiology of the speech and hearing mechanisms, with emphasis on respiration, phonation, resonation, articulation and hearing. Normal functioning is stressed as a frame of reference for understanding disordered functioning. Laboratory experience.

402 Advanced Phonetics (3)
Prerequisite: Speech Communication 341. Advanced course in phonetics; provides intensive analysis of human speech sound production and narrow transcription. Sounds beyond the range of American English are considered. Students process taped materials and use instrumentation in laboratory experiences.

403 Speech and Language Development (3)
Prerequisite: Speech Communication 100 or graduate standing. Study of linguistic development and the psychological aspects of communication. Meets the language and speech development and disorders requirement for specialized preparation to serve as teachers of exceptional children. (Same as Linguistics 403)

420 Communication Theory (3)
Prerequisites: Speech Communication 300 and 324, or graduate standing, or consent of instructor. Examination of theoretical models and systems of the communication process as they relate to various types of institutional and interpersonal communication. Emphasis on means by which the process, including discussion forms and methods, may be analyzed or measured.

430 Classical Rhetorical Theory (3)
Prerequisite: six units of upper division public address courses to include 300. Examination of contributions of Greek and Roman rhetorical theorists, and 4th century B.C. to 300 A.D., together with investigation of selected practitioners of the art.

431 European Rhetorical Theory (3)
Prerequisites: Speech Communication 300 and 430. Review of European theorists, Cox to Whately, with special emphasis on the educational implications of each approach and the way in which each related to other academic disciplines.

432 Contemporary Rhetorical Theory (3)
Prerequisites: Speech Communication 300 and 430. Review of contemporary rhetorical theory with emphasis on the nature of persuasion as an important goal of communication.

433 British Public Address (3)
Prerequisite: six units of upper division public address courses. A rhetorical study of the times, issues, proofs, structure, and style of selected speeches on British political, social, and religious topics.

434 American Public Address (3)
Prerequisite: six units of upper division public address courses. A rhetorical history of the United States from the colonial period to the present. The influence of selected speeches and speakers on the development of American culture.

437 Internship: Organizational Communication (3)
Prerequisites: any two of the following courses: Speech Communication 324, 333, 336, 420 and consent of instructor. The application of conceptual and theoretical frameworks through which to view communication strategies of an ongoing organization as it adjusts to both internal and external environmental pressures. The student spends a specified number of hours per week working in the organization as well as participating in seminar activities. Application for internship must be submitted during the semester prior to enrollment.

438 Principles of Rhetorical Criticism (3)
Prerequisite: Speech Communication 430. To assist the student in developing a personal, consistent, and justifiable set of general criteria for the evaluation of public address, the course focuses on criticism as a consistent act in a variable context, historical modes of criticism, issues in rhetorical criticism, and experiences in criticizing.

441 Speech Pathology, A (3)
Prerequisites: Speech Communication 300 or graduate standing, 341, 342 or consent of instructor. Study of dysarticulation, language disorders and stuttering. Emphasizes therapy designs based on multivariant descriptions of the child or adult communicative disorders: developmental, emotional, social, and organic variables are included.

443 Speech Pathology, B (3)
Prerequisites: Speech Communication 300 or graduate standing, 341, 342, 343 and 344. Study of communicative disorders relative to laryngeal, oromaxillofacial, and nervous system dysfunction. Etiologic, diagnostic and management aspects are considered.

451 Diagnostic Methods in Communicative Disorders (3)
Prerequisites: Speech Communication 341, 342, 343, 344, 441 or consent of instructor. Provides the student with information about various diagnostic procedures that can be used by him and in consultation with members of related disciplines: psychologist, pediatrician, otologist, orthodontist, neurologist.

452 Therapeutic Procedures in Communicative Disorders (3)
Prerequisites: Speech Communication 300, 341, 342, 343 and 344. Lecture and supervised demonstrations, directed toward the provision of techniques and procedures for the treatment of communicative disorders.

453 The Speech and Hearing Clinician as a Counselor (3)
Prerequisites: Speech Communication 342, 441, 463 or consent of instructor. Understandings of the dynamics of interviewing, conferencing and counseling. Expected outcomes are these: effective use of numerous communication approaches in parent, family and client counseling; increased self-awareness; the guidance of those exhibiting communication disorders; and appropriate referral sources.

457 Workshop in Speech Problems—Aphasoid Child (3)
A two-week workshop for professional personnel who deal with the child with this problem. Attention is given to etiology, diagnosis and treatment.

458 Basic Clinical Practice: Speech Pathology and Audiology (3)
Prerequisites: Speech Communication 341, 342, 343, 344, 441, 451, and 452, senior or graduate standing and approved application prior to semester of practicum. Practice in the application of diagnostic and therapeutic care to children and adults exhibiting communicative disorders.

463 Audiology (3)
Prerequisites: Speech Communication 343, 344 or consent of instructor. The nature of auditory functioning, physical and psychological. A detailed consideration of anatomy, pathology and treatment. A survey of rehabilitative methods, facilities and equipment. Partially fulfills the state requirements for public school audiometrist.

464 Audiometry (3)
Prerequisite: Speech Communication 463 or consent of instructor. Equipment, methods and procedures used in assessing air conduction and bone conduction auditory thresholds in a variety of situations. Partially fulfills the state requirements for public school audiometrist.

465 Speech Reading and Auditory Training (3)
Prerequisites: Speech Communication 341, 463, or consent of instructor. Historical background of lipreading, methods used in the visual reading of speech, and auditory training techniques used in the rehabilitation of the aurally handicapped.

466 Advanced Audiometry (3)
Prerequisites: Speech Communication 463, 464 or consent of instructor. Advanced audiometric procedures involving site of lesion testing, special procedures with children, special procedures with pseudohypoacusis and general advanced techniques.

467 Hearing Aids: Evaluation and Use (3)
Prerequisites: Speech Communication 463, 464 and 466. Physical and acoustic characteristics and specifications of electronic amplification. History and philosophies of hearing aid evaluation and selection. Laboratory and clinical applications of evaluation and use of hearing aids.

499 Independent Study (1-3)
Open to upper division students in speech communication with the consent of department chair. May be repeated for credit.

500 Seminar in Speech Research (3)
Prerequisites: Speech Communication 300 or equivalent; admission to M.A. program. Examination of research design and methods used in historical, descriptive and experimental research in speech communication.

504 Seminar: General Semantics (3)
Prerequisite: Speech Communication 404. An in-depth study, analysis, interpretation and criticism of some of the major concepts of general semantics as a theoretical construct of the influence of language on human action and interaction and the relationship of these concepts to other fields of knowledge. (Same as Linguistics 504)

520 Seminar in Group Communication (3)
Prerequisites: Speech Communication 324 and 420. Critical analysis of significant literature and current research regarding intra- and intergroup communication.

525 Seminar in Organizational Communication (3)
Prerequisites: Speech Communication 324, 333 and 420 or consent of instructor. Critical examination of significant literature and current research regarding communication systems and practices within business and industry.

535 Seminar in Advocacy (3)
Prerequisite: Speech Communication 335. Critical analysis of significant texts and periodic literature relating to argumentation and advocatory discourse.

536 Seminar in Rhetorical Theory (3)
Prerequisite: Speech Communication 430. Analyses of selected rhetorical issues and treatises chosen to represent complementary or contrasting systems of rhetoric.

538 Seminar in Rhetorical Criticism (3)
Prerequisite: Speech Communication 438. Analysis of existing rhetorical critical methodologies, methods and practice in developing a critical methodology, and in-depth analysis of new forms of rhetorical criticism.

539 Special Topics in Public Address (3)
Prerequisite: consent of instructor. A critical analysis or in-depth investigation of a topic selected by the students and/or instructor. May be repeated for credit.

540 Seminar in Experimental Phonetics (3)
Prerequisites: Speech Communication 341 and 402 or consent of instructor; admission to M.A. program. Investigates experimental phonetics, the electromechanical analysis of speech, and laboratory techniques in physiological phonetics. Selected problems in physiological and acoustical analysis; use of laboratory instrumentation. (Same as Linguistics 540)

542 Neurophysiologic Bases of Speech and Language (3)
Prerequisites: 343, 344 and 443; admission to M.A. program. A systematic survey of mechanisms of the central and peripheral nervous systems underlying normal speech and language behavior.

543 Seminar: Major Problems in Speech Pathology and Audiology (3)
Prerequisite: admission to M.A. program. Selected problems in speech pathology and audiology approached through an investigation of the literature and clinical research.

544 Seminar in Aphasia: Diagnosis (3)
Prerequisites: Speech Communication 542 or consent of instructor; admission to M.A. program. Study of the etiology of aphasia, dysarthria, apraxia. Diagnosis of communication problems arising from brain-damage. Guest lecturers in the fields of aphasia, dysarthria, apraxia, stroke research, internal medicine.

545 Seminar in Aphasia: Therapy (3)
Prerequisites: Speech Communication 544 or consent of instructor; admission to M.A.

program. Eclectic study of the approaches to therapy with brain damaged adults who have sustained a communication deficit. Introduction to the interdisciplinary involvement required to work effectively with the adult in this category. Guest lecturers will include representatives from orthopedics, counseling, rehabilitation, social services, physical therapy, occupational therapy, vocational rehabilitation.

558 Intermediate Clinical Practice (2)

Prerequisite: Speech Communication 458 or equivalent. Intermediate clinical practicum in the on-campus Speech and Hearing Clinic for both children and adults exhibiting communicative disorders. Stressed are skills and procedures involved in diagnosis, therapy, report writing and record keeping.

559A Advanced Clinical Practice (2)

Prerequisites: Speech Communication 558 and approved application submitted prior to semester of practicum. Advanced clinical practice under supervision with children and adults having communicative disorders. This off-campus program takes place within hospitals, clinics, centers and other areas of rehabilitation. All aspects of communicative disorders, speech, hearing and language are involved.

559B Advanced Clinical Practice (2)

Prerequisite: Speech Communication 559A or consent of instructor. Additional advanced clinical practice, under supervision, in off-campus medical, clinical and community center facilities. All aspects of communicative disorders, speech, hearing, and language, are involved.

566 Differential Audiology (3)

Prerequisites: Speech Communication 463, 464, 466; admission to M.A. program. Examination and application of selected audiometric procedures designed to yield differential information as to site of auditory and cerebral lesion. Areas involved are sensory and retrocochlear. Procedures will include Bekesy, Impedance, audiometry, Tone Decay Test and other specialized audiological tests and batteries.

567 Seminar in Audiology (3)

Prerequisites: Speech Communication 463, 464, 466 or consent of instructor; admission to M.A. program. Investigation into a particular area or areas of audiology with selected problems. Emphasis upon research and contributions within the framework of the seminar.

570 Seminar in Communicative Disorders: Oromaxillofacial Dysfunction (3)

Prerequisites: Speech Communication 441 and 443; admission to M.A. program. An in-depth review of related anatomical and physiological classification systems as well as diagnostic, therapeutic, and research considerations utilizing a multidisciplinary approach.

571 Seminar in Communicative Disorders: Stuttering (3)

Prerequisites: Speech Communication 441 and 443; admission to M.A. program. Selected problems in stuttering approached through an investigation of the literature and experimental and clinical research.

572 Seminar in Communicative Disorders: Cerebral Palsy (3)

Prerequisites: Speech Communication 441, 443 and 542 or consent of instructor; admission to M.A. program. Selected problems in cerebral palsy approached through an investigation of the literature and experimental and clinical research.

573 Seminar in Communicative Disorders: Voice (3)

Prerequisites: Speech Communication 441, 443, 542 or consent of instructor; admission to M.A. program. Selected problems in voice approached through an investigation of the literature and experimental and clinical research.

574 Seminar in Commlunicative Disorders: Articulation (3)

Prerequisites: Speech Communication 441, 443, 542 or consent of instructor; admission to M.A. program. Selected problems in articulation approached through an investigation of the literature and experimental and clinical research.

575 Seminar in Communicative Disorders: Mental Retardation (3)

Prerequisites: Speech Communication 441, 443, 542 or consent of instructor; admission to M.A. program. Investigation of various classifications, etiologies, diagnostic and management programs including sociologic, vocational and psychologic factors as they relate to communicative disorders of the mentally retarded population.

576 Seminar in Communicative Disorders: Advanced Diagnosis (3)

Prerequisites: Speech Communication 441, 443, 542 or consent of instructor; admission to

M.A. program. Selected problems in advanced diagnosis approached through an investigation of the literature and experimental and clinical research.

596 Non-Thesis Research (3)

The investigation and reporting of an approved individual research study, under the supervision of the chairman of the student's advisory committee.

598A,B,C Thesis (2,2,2)

Prerequisite: Speech Communication 500. The selection, investigation, and written presentation of a selected problem in the field of speech.

599 Independent Graduate Research (1-3)

Prerequisites: graduate standing and consent of chair. Open to graduate students with consent of department chair. May be repeated for credit.

759 Public School Practicum in Communicative Disorders (4)

Prerequisites: concurrent registration in Speech Communication 760 and application approved prior to semester of practicum, 165 clock hours of clinical practice and graduate status. Experiences include working in small groups and in individual therapy sessions with speech and hearing handicapped children enrolled in regular school classes, participation in parent counseling conferences and conferences with school personnel including administrators, classroom teachers, and nurses. Planning of curriculum materials to integrate speech and hearing therapy with regular classroom instruction will be stressed. This meets the directed teaching requirements for the credential to teach speech and hearing handicapped in remedial classes. Restricted Credential as a Speech and Hearing Specialist.

760 Seminar: Speech and Hearing Service in the Schools (2)

Prerequisites: consent of instructor. Problems and challenges unique to the student clinician in the organization and management of the speech and hearing program in the school. Course includes study of the clinician's role, planning, scheduling, case finding, treatment program reporting and other responsibilities.

SPEECH COMMUNICATION EDUCATION COURSES

442 Teaching Speech in the Secondary School (3)

Prerequisite: admission to teacher education. Objectives, methods, and materials for teaching speech in secondary schools. Required, before student teaching, of students presenting majors in speech for the standard teaching credential.

449A Student Teaching in Speech Communication in the Secondary School (10)

See description under Division of Teacher Education.

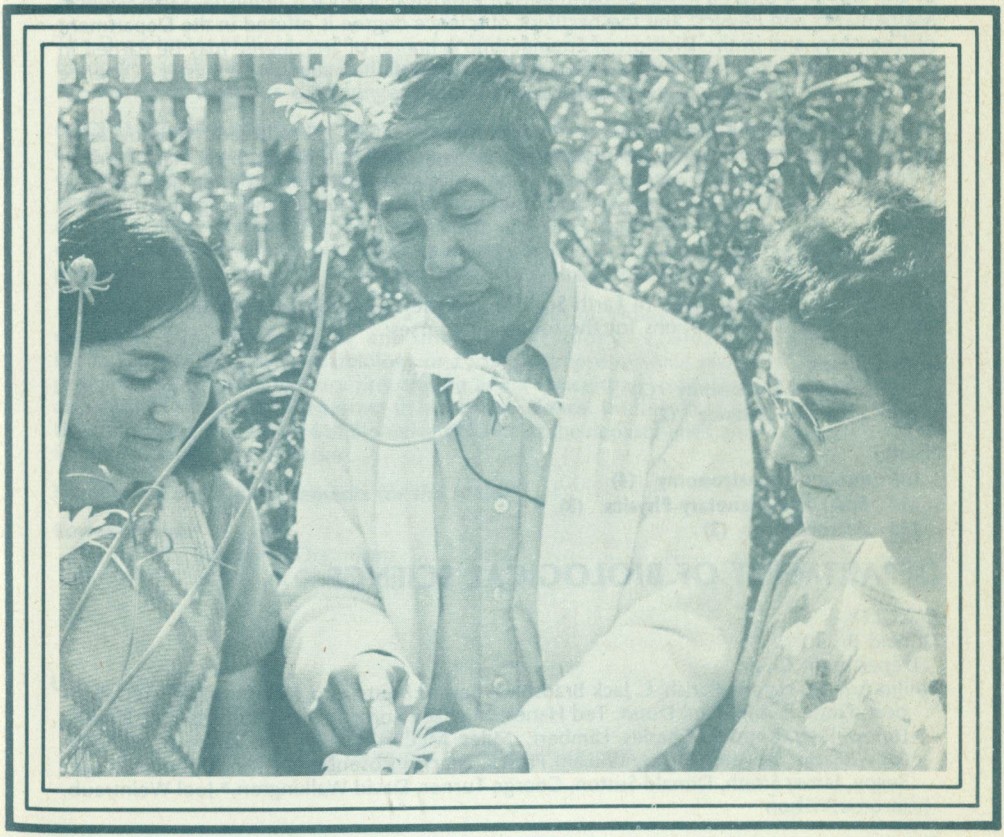
449B Student Teaching Seminar (2)

See description under Division of Teacher Education.

749 Student Teaching in Speech in the Secondary School and Seminar (6)

See description and prerequisite under Division of Teacher Education.

MATHEMATICS SCIENCE AND ENGINEERING



SCHOOL OF MATHEMATICS, SCIENCE AND ENGINEERING

Acting Dean: David L. Walkington
Acting Associate Dean: Floyd W. Thomas

The School of Mathematics, Science and Engineering is comprised of six departments (Biological Science, Chemistry, Earth Science, Mathematics, Physics and Science Education) and the Division of Engineering which includes three disciplines. (Civil Engineering and Engineering Mechanics, Electrical Engineering, and Mechanical Engineering). The bachelor of arts degree is offered in the Departments of Biological Science, Chemistry, Earth Science, Mathematics and Physics; and the bachelor of science degree is offered in the Department of Chemistry and in the Division of Engineering. A master of arts degree may be earned in the Departments of Biological Science, Chemistry and Mathematics, and a master of science degree in the Division of Engineering.

The school offers well-rounded programs allowing students to gain a breadth of knowledge and providing the necessary stimulus and coursework to begin in-depth specialization. In addition several curricula are interdisciplinary in design and present an integration of subjects most relevant to professions combining mathematics, science and engineering.

ASTRONOMY

(Offered by the Department of Earth Science and the Department of Physics)
See departmental descriptions for the following courses:

Earth Science
350 General Astronomy (3)
450 Planetary Science (2)

Physics
Introduction to Astronomy (4)
414 Solar and Planetary Physics (3)
415 Astrophysics (3)

DEPARTMENT OF BIOLOGICAL SCIENCE

FACULTY
Donald Bright
Department Chair
Phillip Adams, Natalie Barish, L. Jack Bradshaw, Bayard Brattstrom, Jack Burk, Calvin Davenport, Linda Dubin, Paul Dunn, Ted Hanes, Michael Horn, Takashi Hoshizaki, C. Eugene Jones, Judy Kandel, Charles Lambert, Miles McCarthy, Lon McClanahan, Kenneth McWilliams, Steven Murray, William Presch, Marvin Rosenberg, Alvin Rothman, Roger Seapy, James Smith, Donald Sutton, George Turner, David Walkington,* Joel Weintraub, Jerome Wilson

The Department of Biological Science offers a program leading to the Bachelor of Arts in Biological Science for students preparing to enter graduate and professional schools, for those preparing to teach, and for those preparing for careers in industry and government service.

It is the conviction of the faculty in biological science that the purposes of all these students can best be served by building their curricula on a core of courses fundamental to the science of biology. This core curriculum includes organismic biology, genetics, and cell and molecular biology.

* University administrative officer

In considering the curricula beyond this core of subjects, the faculty has agreed that the interest and goals of individual students can best be satisfied through individual advising rather than through prescribed programs. After discussion with their advisers, students will elect those upper division courses which will satisfy their individual interests and professional goals.

To qualify for a baccalaureate degree in biological science students must have a C average in all required related courses. No credit toward the major will be allowed for biological science courses in which a grade D is obtained. Courses taken under the Credit/No Credit grade option may not be applied towards the major.

Advanced students will be permitted to enroll in Biological Science 480, Advanced Topics in Biology, and Biological Science 499L, Independent Laboratory Study. All full-time upper division students are expected to attend the departmental seminars.

The Department of Biological Science also offers a curriculum for students majoring in other fields who wish a minor emphasis in biology; they should inquire at the department office for assistance. A minor is no longer required for a teaching credential.

BACHELOR OF ARTS IN BIOLOGICAL SCIENCE

One hundred twenty-four units include general education (see page 60), 36 units in biology courses, and supporting courses in physical sciences and mathematics are required for completion of the B.A. in Biological Science. The supporting courses must include one year of inorganic college chemistry including qualitative analysis with laboratory, two semesters of organic chemistry with laboratory, one semester of college calculus, and one year of college physics with laboratory;* a C average must be maintained in supporting courses.

A student with special interest in a particular field of biology may choose an "area of emphasis" in botany, cell and molecular biology, ecology, genetics, marine biology/oceanography, microbiology or zoology. Preprofessional programs for predental, premedical and preoptometry preparation and a concentration in medical technology are also available to students majoring in biological science. Interested students should consult the chair of the Department of Biological Science or the department's undergraduate adviser for more detailed information.

Minimum Course Requirements for the Major*

	Units	*Total Units*
Lower division		
Bio Sci 103 Biology of Organisms	5	
Bio Sci 104 Biology of Organisms	5	
	10	10
Upper division:		
Bio Sci 312 Genetics	3	
Bio Sci 315 Cell and Molecular Biology	5	
Electives 18 units, of which four units must be outside area of emphasis	18	
	26	26
		36

Students are strongly advised to complete Biological Science 103 and 104 as soon as possible and to complete Biological Science 312 prior to Biological Science 315.

Transfer students who have completed eight units of lower division biological science courses with laboratory will be considered to have completed the equivalent of the lower division core.

* Those students seeking careers in biology at the Ph.D. level and careers in medicine should take a full year of organic chemistry, a year of analytical geometry and calculus, quantitative chemistry and laboratory, and obtain a proficiency in one modern foreign language or advanced courses in computational sciences.

Teaching Credentials Requirements
Students enrolled in the program for secondary school science teaching credentials must take an approved program of courses which includes all of the requirements for the Bachelor of Arts in Biological Science except for a reduction of four of the 18 units of electives in biology. In addition, the student must take the following courses: Earth Science 101, Education-TE 440F, Education-TE 440R, Education-TE 440S, Science Education 312, Science Education 442, Science Education 449A, Science Education 449B.

MASTER OF ARTS IN BIOLOGY

The program for this degree is based on the assumption that modern science necessitates broad preparation through the master's level of training. It permits breadth of preparation and at the same time concentration in an area such as botany, microbiology or zoology. In design it offers sufficient breadth and depth to strengthen the student's academic understanding and improve his competence for (a) advanced graduate work toward the doctoral degree in biological science, (b) teaching at all levels—elementary, secondary and community college, (c) participating in research programs, (d) participating in various field service and conservation positions with both the state and national governments, (e) entering the field of public health service, or (f) technological work in the health sciences.

Admission Requirements
An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures). In addition to the university requirements for admission in conditionally classified graduate standing, acceptance for this program is contingent upon the following: (1) a B.A. in Biological Science or related area at Cal State Fullerton or other accredited institution with a grade-point average of 3.0 in biological science and a GPA of 2.5 in the related sciences, of mathematics, chemistry and physics; (2) acceptance by a thesis adviser; and (3) satisfactory scores on the GRE Aptitude test and the Advanced Biology test. Students with limited subject or grade deficiencies may be considered for conditional acceptance to the program. Conditionally classified graduate standing may be removed upon completion of nine units of adviser and graduate committee approved postgraduate studies in biology, mathematics, chemistry or physics, with a GPA of 3.0.

Students should achieve classified graduate standing as soon as they are eligible, since no more than nine units of graduate work taken before classification can be included on the study plan (see below) for the degree. A student who meets the admission requirements may apply for classified graduate standing, which includes the development of an approved study plan.

Advancement to candidacy for the M.A. in Biology will be granted after:
1. Completing 12 units of coursework on the study plan with a GPA of 3.0.
2. Thesis program selected and approved by student's thesis committee.
3. Approval by departmental graduate committee upon recommendation from the thesis adviser and committee.

Study Plan
A study plan includes 30 units of adviser-approved graduate work, at least 15 of which must be at the 500-level. All study plans must include Biological Science 599, Independent Graduate Research, and Biological Science 598, Thesis, and at least one departmental seminar. Six units must be outside the principal area. Required is a thesis or a published paper, or a paper accepted for publication, acceptable to the adviser and committee, covering a research problem. A final oral examination on the student's research is also required.

Supervising the work of graduate students requires the personal attention of advisers. To insure that advisers are available for new graduate students a graduate student is expected to complete the requirements for graduation within three years after classification.

Students who are graduate assistants should complete the classification step either prior to appointment or during their first semester of appointment. They must become classified before being reappointed.

For more detailed information or advisement, students should consult the chair of the Biological Science Department, or the graduate program adviser of the Biological Science Department. See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin*.

BIOLOGICAL SCIENCE COURSES

101 Elements of Biology (5)
An introduction to basic concepts in the study of living organisms and to the characteristics of the natural environment. One or more field trips required. (3 hours lecture, 6 hours laboratory)

102 Crisis Biology (3)
Presents to the student basic biological knowledge necessary for understanding our current environmental and health problems. With this information the ecology of man and his ecosystem is analyzed and biological problems are discussed. Designed primarily for the non-science major. (3 hours lecture)

103 Biology of Organisms (5)
An introductory study of the biology of bacteria, viruses, fungi, protozoa and micro-algae including a consideration of systematics, ecology, physiology and evolution. (3 hours lecture, 6 hours laboratory)

104 Biology of Organisms (5)
An introductory study of the biology of macro-algae, Bryophytes and vascular plants, invertebrates and vertebrates including a consideration of systematics, ecology, physiology and evolution. (3 hours lecture, 6 hours laboratory)

311 Human Reproduction - Biology and Social Change (2)
Prerequisite: one course college biology or consent of instructor. The anatomy and physiology of human reproductive systems; conception and contraception; pregnancy, embryonic development and birth; and changes in human sexual behavior occurring with social change. (2 hours lecture)

312 Genetics Lecture (3)
Prerequisite: one year of college biology or consent of instructor. The general principles and modern developments in the study of heredity. Course designed for biology majors: nonmajors see Bio Sci 313. To be taken prior to Bio Sci 315. (3 hours lecture)

312L Genetics Laboratory (1)
Prerequisite: Bio Sci 312. The use of a variety of organisms and methods for exploring basic principles of genetics. (3 hours laboratory)

313 Human Genetics (3)
Prerequisite: Bio Sci 101 or equivalent. Principles of heredity with emphasis on methods of analysis on interaction of genes and environment, and on gene populations in humans. No credit toward biology major (see Bio Sci 414). (3 hours lecture) (Same as Anthropology 313)

314 Human Issues In Genetics (1)
Prerequisite: one semester of biology. Ethical implications of medical decisions relating to the treatment of genetic defects, human experimentation and eugenics. (3 hours lecture and discussion per week for 5 weeks)

315 Cell and Molecular Biology (5)
Prerequisites: two semesters college biology, genetics and one semester organic chemistry. An introduction to the cell and cell organelles including a study of cellular macromolecules, their synthesis, function and integration into organelles. Topics include studies of modern data-gathering techniques and instrumentation, organellar function, bioenergetics, protein synthesis and gene function at the molecular level. (3 hours lecture, 6 hours laboratory)

316 Principles of Ecology (3)
Prerequisite: one year of college biology or consent of instructor. An introductory approach to ecosystems, community and population ecology. Basic principles of ecosystem functions are described and related to contemporary environmental problems. Students are provided with background for the advanced ecology courses. (3 hours lecture)

316L Principles of Ecology Laboratory (1)
Prerequisite: Bio Sci 316 (can be enrolled concurrently). Laboratory and field techniques used in ecological studies are taught. Student projects and one or more field trips required. (3 hours laboratory)

317 Impact Field Biology (4)
Prerequisite: Bio Sci 104 or equivalent. A study of the fauna and flora associated with natural, disturbed and contrived environments in Southern California. Emphasis on field recognition of species, evaluating biotic habitats, preparing biological surveys and assessing environmental impact. (2 hours lecture, 6 hours fieldwork)

318 Marine Biology (3)
Prerequisite: one semester of college biology or eqivalent, or consent of instructor. Physical and chemical aspects of the ocean environment as a background for the study of marine organisms and habitats. (3 hours lecture)

318L Marine Biology Laboratory (1)
Prerequisite: Bio Sci 318 or equivalent or consent of instructor (318 may be taken concurrently). Laboratory analyses of food cycles, communities and taxonomy and ecology of local marine algae, invertebrates and fish. (3 hours laboratory or fieldwork)

320 General Microbiology (4)
Prerequisites: one year of college biology and Chem 301A or consent of instructor. No credit for students with prior credit for Bio Sci 103. The study of morphology, growth, and physiology of bacteria and other microorganisms, and consideration of microbial interactions with other organisms including man. (2 hours lecture, 6 hours laboratory)

342 Plant Anatomy (4)
Prerequisite: Bio Sci 104 or one year of college biology or consent of instructor. The origin, development and maturation of leaves, stems, roots and flowers of vascular plants. (2 hours lecture, 6 hours laboratory)

344 Plant Morphology (4)
Prerequisite: one year of college biology or consent of instructor. A study of the modern concepts of plant morphology, including biochemical and morphogenetic considerations. (2 hours lecture, 6 hours laboratory)

352 Plants, Man and Life (3)
Prerequisite: one semester of college biology or consent of instructor. An examination of man's dependence upon and economic interest in plants throughout the world. Includes a discussion of the domestication of plants and the origin of agriculture. (3 hours lecture)

352L Plants, Man and Life Laboratory (1)
Prerequisite: Bio Sci 352 or consent of instructor (may be taken concurrently). Includes a discussion of the manufacture and use of economically important plant derivatives. A major portion of this course will be concerned with making many of these plant products. (3 hours laboratory)

353 Principles of Horticulture (2)
Techniques and principles of plant propagation and cultivation of various types of plants under laboratory, indoor, greenhouse or field environment. (2 hours lecture)

353L Principles of Horticulture Lab (1)
Laboratory for plant propagation and cultivation of various types of plants. (3 hours laboratory)

360 Biology of Human Sexuality (1)
The biology of the human reproductive system. Topics cover sexual differentiation, structure and function, fertility and infertility, coitus, childbirth, contraception and venereal disease. (3 hours lecture per week for 5 weeks)

361 Mammalian Anatomy and Physiology (4)
Prerequisite: one year of college biology or consent of instructor. Study of the structure and function of the human organism. No credit to students with prior credit (C or better) in a course in anatomy and/or physiology. Course designed for biology majors and related health sciences. Not open for credit to students with zoology emphasis, who should take Bio Sci 463. (2 hours lecture, 6 hours laboratory)

367 Insects and Man (3)
Insect biology and ecology; the effects of insects upon civilization past and present; control of insects and effects upon the environment; and the superiority of insects. No credit toward biology major. No credit toward biology major. (See Bio Sci 467) (2 hours lecture, 3 hours laboratory or fieldwork)

401 Biogeography (3)
Prerequisite: one year of college biology or consent of instructor. A study based on evolutionary patterns and mechanisms of distribution of plants and animals in the major habitats of the world with a consideration of current concepts and theories. (3 hours lecture)

403 Biosystematics (4)
Prerequisites: one year of college biology, and Bio Sci 316 or 404 and consent of instructor. An introduction to the principles and techniques of biosystematics, including evolutionary mechanisms, the species concept, taxonomic procedures and nomenclature. (2 hours lecture, 6 hours laboratory)

404 Evolution (3)
Prerequisite: one semester of college biology or zoology or consent of instructor. A study of evolution, including the history of evolutionary thought; origin of universe, earth and life; geological and paleontological history of the earth; evidences for evolution derived from comparative anatomy, embryology, genetics, zoogeography; mechanisms of evolution. (3 hours lecture)

404L Evolution Laboratory (1)
Prerequisite: Bio Sci 404 (may be taken concurrently). Laboratory and field exercises designed to explore the problems, patterns and process of evolution. (3 hours laboratory)

405 Developmental Biology (4)
Prerequisites: Bio Sci 315 or equivalent or consent of instructor. Either Bio Sci 312 or 464 recommended. Molecular and cellular processes involved in the development of organisms such as oogenesis, fertilization, cytokinesis-morphogenetic movements, and nucleocytoplasmic interactions. (2 hours lecture, 6 hours laboratory—discussion)

406 Biometry (4)
Prerequisites: Math 120, 130, or 150A; upper division standing in biological sciences. Introduction to experimental design, interpretation, and practical application of statistics to biological problems. (3 hours lecture, 3 hours laboratory)

407 Seminar in Human Sexuality (3)
Prerequisites: a course in college biology and upper division standing or consent of instructor. The biological-physiological bases of human sexuality as they relate to human sexual interaction and social change. (3 hours lecture/discussion)

409 Photobiology (4)
Prerequisites: organic chemistry and an upper division course in animal or plant physiology or consent of instructor. A study of the effects of light of different wavelengths and intensity on organisms and their organs. Also techniques on equipment calibration and light measurements. (3 hours lecture, 3 hours laboratory) (Same as Chem 409)

410 General Cell Physiology (4)
Prerequisites: one year of college biology and one semester of organic chemistry or consent of instructor. Characteristics of life at the cellular level; processes by which the cell obtains energy and material and forms new cell substances; organization of structures and enzyme systems within the cell. (2 hours lecture, 6 hours laboratory)

412 Population Genetics (3)
Prerequisite: Bio Sci 312 or 313. Theory and literature of genetic change in populations, primarily one-locus: maintenance of genetic variability, inbreeding, drift, migration and selection treated singly and in combination. Estimation of genetic parameters. (3 hours lecture)

413 Molecular Genetics (3)
Prerequisites: Bio Sci 312, 315 and Chem 301A,B. The organization, replication and function of the genetic material and informational macromolecules in organisms from the viruses to the higher plants and animals. Topics include: chromosomal structure and function, recombination, mutagenesis, genetic coding, protein synthesis and genetic aspects of development. (3 hours lecture)

413L Molecular Genetics Laboratory (1)
Prerequisites: Bio Sci 312, 315, 320 and concurrent enrollment in Bio Sci 413 or consent of instructor. Designed to give experience in the basic techniques of molecular genetics, including isolation, characterization and function of the information macromolecules. (3 hours laboratory)

414 Advanced Human Genetics (4)
Prerequisites: Bio Sci 312 and 315 or consent of instructor. Designed primarily for the science major. Principles of heredity with emphasis on methods of analysis, chromosomal aberrations, interaction of genes and on gene populations in humans. (3 hours lecture, 3 hours laboratory)

415 Neurobiology (3)
Prerequisite: upper division standing or consent of instructor. A survey of classical and modern concepts in neurobiology. The subject matter ranging from neurons to neuron circuits and brain function is approached from developmental, neurochemical, electrophysiological, and psychobiological viewpoints. (2 hours lecture, 3 hours laboratory)

416 Limnology-Fresh Water Ecology (4)
Prerequisites: one year college biology, and Chem 101B. Comparative physical, chemical and biological characteristics of inland waters and estuaries. (2 hours lecture, 6 hours laboratory or fieldwork)

417 General Oceanography (3)
Prerequisites: one year college biology, Chem 101A,B (may be concurrent) and Physics 211. Introduction to oceanography including the study of the extent of the oceans; the chemical nature of the sea; marine geology; causes and effects of currents and tides; and interrelationships of plants and animal life. (3 hours lecture)

418 Biological Oceanography (4)
Prerequisite: Bio Sci 417 or consent of instructor. Biological factors of the marine environment; physiological and ecological relationships; methods of sampling, identification and analysis. (3 hours lecture, 3 hours laboratory or fieldwork)

419 Marine Ecology (4)
Prerequisites: upper division or graduate standing in biological science and successful completion of Bio Sci 418 or 446 or 461 or consent of instructor. A course in the fundamentals of ecology embracing the aspects of the interrelations of organisms and their environment with emphasis on productivity, population dynamics, behavior and biological associations. (2 hours lecture, 6 hours laboratory or fieldwork)

420 Biology of Marine Plankton (4)
Prerequisites: Bio Sci 418, 446 and 461 recommended or consent of instructor. An introduction to the study of marine plankton, including a consideration of the taxonomy, basic biology and ecology of local forms. Emphasis on aspects of interrelations of planktonic plants and animals with their environment. (2 hours lecture, 6 hours laboratory or fieldwork)

423 Pathogenic Microbiology (4)
Prerequisites: Bio Sci 315; either 103 or 320. Study of the biology of infectious disease; mechanism of microbial pathogenicity; host defenses; mode of action of antibiotics and other antimicrobial agents; characteristics of specific pathogenic bacteria, fungi and viruses. (2 hours lecture, 6 hours laboratory)

424 Immunology (4)
Prerequisites: Bio Sci 315; either 103 or 320. A study of the cellular and molecular nature of the immune process. Emphasis is placed on the nature of antibodies and antigens, their role in immunity and the specificity of their reactions. The laboratory is designed to give the student a basic knowledge of the techniques of modern immunology. (2 hours lecture, 6 hours laboratory)

425 Pathobiology (4)
Prerequisites: anatomy and physiology, microbiology, biochemistry. Designed for students in the allied health sciences who are practicing their art or who have had at least a year's experience in the allied health field. A study of pathobiological processes including etiology, cytopathology, histopathology, gross pathology and epidemiology. (2 hours discussion, 2 hours laboratory, 2 hours activity, 2 hours fieldwork)

426 General Virology (3)
Prerequisites: Bio Sci 315; either 103 or 320. A comparison of bacterial, animal and plant viruses. A detailed study of viral structure and host-virus interaction in the viral replication process. (3 hours lecture)

426L General Virology Laboratory (1)
Prerequisite: prior completion or concurrent enrollment in Bio Sci 426. Experimental methods for studying bacterial and animal viruses, including techniques for growth and titration of infectious viral units and physical characterization of viral structures. (3 hours laboratory)

432 Microbes and Food Production (2)
Prerequisite: Bio Sci 103 or 320 for grade option; none for C/NC option. The ancient and modern processes of making cheese from milk, wines from fruits, breads and beers from grains—these and other transformations depend on microorganisms. Studied will be the microbes involved and the mechanisms by which their activities transform the unstable raw materials into more desirable products. (Total of 15 hours lecture, 45 hours laboratory and field trips)

433 Microbes and Food Processing Problems (2)
Prerequisite: Bio Sci 103 or 320 for grade option; none for C/NC option. Food spoilage and food intoxication caused by microorganisms are serious problems in many methods of food preservation. Studied will be the microbes involved in these problems, and the methods used in the detection and prevention of the problems. (Total of 15 hours lecture, 45 hours laboratory and field trips)

436 Advanced General Microbiology (4)
Prerequisites: Bio Sci 315; either 103 or 320. An advanced treatment of the growth, physiology and structures of the microorganisms, with emphasis on study of the free-living bacteria, yeasts and molds. (2 hours lecture, 6 hours laboratory)

439 Microbial Ecology (4)
Prerequisites: Bio Sci 315; either 103 or 320. The interaction of microbes and their environment; the influence of physical and chemical factors on the distribution and activities of microbial populations; the effects of microbes on the living and nonliving environment. Basic principles of microbial enrichment, selection and succession. (2 hours lecture, 6 hours laboratory)

441 Plant Taxonomy (4)
Prerequisite: one year college biology or consent of instructor. An introduction to the study of classification and evolution of vascular plants with an emphasis on the flowering plants. (2 hours lecture, 6 hours laboratory; field trips required)

443 Plant Ecology (4)
Prerequisite: one year college biology. A study of environmental factors and their effect upon plants and their distribution. Includes field experience and a survey of plant ecological literature. (3 hours lecture, 3 hours laboratory; 1 or more weekend field trips per semester required)

444 Plant Physiology (4)
Prerequisites: one year college biology and one semester of organic chemistry or consent of instructor. A study of plant growth responses, mineral nutrition, photosynthesis and metabolism. (2 hours lecture, 6 hours laboratory)

445 Mycology (4)
Prerequisite: Bio Sci 103 or equivalent or consent of instructor. A study of the morphology, physiology, and ecology of fungi with emphasis on identification and ecological relationships. (2 hours lecture, 6 hours laboratory)

446 Phycology (4)
Prerequisite: one year college biology or consent of instructor. Biological aspects of marine and freshwater algae with an emphasis on comparative development, morphology, taxonomy and ecology. (2 hours lecture, 6 hours laboratory or fieldwork)

447 Medical Mycology (4)
Prerequisites: Bio Sci 320, 445, or consent of instructor. Diagnostic morphology and physiology of fungi pathogenic to man and animals. (2 hours lecture, 6 hours laboratory)

453 Advanced Plant Ecology (4)
Prerequisites: Bio Sci 443 and consent of instructor. A study of terrestrial ecosystem dynamics with emphasis on phytological experimental design, research methodology, and evaluation. (2 hours lecture, 6 hours laboratory or fieldwork)

460 Protozoology (4)
Prerequisite: college biology or zoology; an understanding of cellular physiology recommended. The biology of acellular animals will be considered in lecture/discussion, considering physiology, ecology, evolution; behavior, systematics and morphology. (2 hours lecture, 6 hours laboratory or fieldwork)

461 Invertebrate Zoology (4)
Prerequisite: one year of college biology or consent of instructor. Evolution, classification, morphological and physiological adaptations, and biology of invertebrate animals. Includes dissection, identification and observation of living animals. (2 hours lecture, 6 hours laboratory, or fieldwork)

462 Parasitology (4)
Prerequisite: one year of general biology or consent of instructor. A consideration of the symbiotic relationships existing at all levels of animal organization. Emphasis on the natural history, biology, physiology, ecology and laboratory recognition of symbiotic organisms. (2 hours lecture, 6 hours laboratory)

463 Comparative Vertebrate Anatomy (4)
Prerequisite: one semester of general zoology or biology or consent of instructor. A comparative study of the chordates, with emphasis on morphology and evolution of various organ systems from fish through mammals. Includes comparative dissection of numerous vertebrates. (2 hours lecture, 6 hours laboratory)

464 Embryology (4)
Prerequisites: Bio Sci 104, a year course in zoology or consent of instructor. Strongly recommended that the student has a thorough understanding of vertebrate anatomy. Development of animals with emphasis on comparative and experimental embryology. Laboratory includes a study of living invertebrate and vertebrate embryos. (2 hours lecture, 6 hours laboratory and discussion)

465 Animal Ecology (4)
Prerequisite: one year college biology or zoology; Bio Sci 316 recommended. A study of the factors that affect the distribution and abundance of animals. Emphasis on field techniques, statistical applications, and theoretical approaches. (2 hours lecture, 6 hours laboratory or fieldwork; 1 or more weekend field trips required)

466 Animal Behavior (3)
Prerequisite: one year of college biology or consent of instructor. An introduction to the current problems in animal behavior including sensory capacities, orientation, innate and learned patterns, and social behavior of invertebrates and vertebrates. (3 hours lecture)

466L Animal Behavior Laboratory (1)
Prerequisite: Bio Sci 466 (can be taken concurrently). Experiments in the analysis of behavioral patterns.

467 Entomology (4)
Prerequisite: one year of college biology or consent of instructor. Anatomy, physiology, evolution, and biology of insects and other terrestrial arthropods. Laboratory includes detailed dissection, collection, identification, and observation of living arthropods. (2 hours lecture, and 6 hours laboratory or fieldwork)

468 Comparative Animal Physiology (4)
Prerequisites: one year college biology, Chem 101A, 101B, and organic chemistry. A comparative survey of organ systems and physiological processes among invertebrate and vertebrate animals. (2 hours lecture, 6 hours laboratory)

469 Hematology (3)
Prerequisites: upper division standing and Chem 301A or equivalent. Theoretical and practical study of blood and hemopoiesis. Study of the functions and morphology of blood components in healthy and diseased states; hematological tests and factors affecting test reliability. (1 hour lecture, 6 hours laboratory)

470 Insect Survey Techniques (3)
Prerequisite: Bio Sci 467 or consent of instructor. Quantitative and qualitative insect population sampling techniques; insect identification. Inventory of the insect fauna of a selected study area. (1 hour lecture, 6 hours laboratory)

472 Comparative Histology and Technique (4) (Formerly 362)
Prerequisite: one year of college biology or consent of instructor. Theory and practice of the preparation of cells and tissues for microscopic study. (2 hours lecture, 6 hours laboratory)

473 Biomechanics (4)
Prerequisites: one year of college biology, Bio Sci 463, or consent of instructor. The physical forces which are operative on the anatomical design of animals will be examined. These will include special adaptation for locomotion and feeding. (2 hours lecture, 6 hours laboratory; 1 or more field trips required)

474 Natural History of the Vertebrates (4)
Prerequisite: one year of college biology or zoology, or consent of instructor. Natural history and ecology of the vertebrates including behavior, temperature and water regulation, migration and homing, echolocation, venoms, color and coloration. Laboratory and field emphasis on observation, identification, behavior, ecology and distribution of the vertebrates. (2 hours lecture; 6 hours laboratory or fieldwork; 1 or more weekend trips per semester required)

475 Ichthyology (4)
Prerequisite: a year of college biology, or consent of instructor. The systematics, evolution, morphology, physiology, ecology and behavior of fishes. Laboratory and fieldwork in the identification, ecology and behavior of fishes. (2 hours lecture, 6 hours laboratory or fieldwork; 1 or more weekend trips per semester required)

476 Herpetology (4)
Prerequisite: one year of college biology, or zoology, or consent of instructor. The biology, structure, physiology, ecology, distribution, evolution, and behavior of amphibians and reptiles. Laboratory and fieldwork in identification, collection, study of amphibians and reptiles. (2 hours lecture, 6 hours laboratory or fieldwork; 1 or more weekend trips per semester required)

478 Mammalogy (4)
Prerequisites: one semester of college biology, or zoology, or consent of instructor. The biology, structure, physiology, ecology, distribution, evolution and behavior of mammals. Laboratory and fieldwork in identification, collection, and natural history of mammals. (2 hours lecture, 6 hours laboratory or fieldwork; 1 or more weekend trips per semester required)

480 Advanced Topics in Undergraduate Biology (1-3)
Prerequisites: upper division students majoring in biology with consent of instructor. Designed to consider current topics, updating of concepts, recent advances and unification of the principles of biology. May be repeated for credit.

490 Biological Internship (4)
Prerequisites: one year each of college biology and college chemistry; upper division or graduate standing and consent of instructor. Designed to acquaint students with biological and ecological community problems. Students will be working in a laboratory setting with individuals from public and private concerns. May be repeated once for credit. (2 hours lecture/discussion, 6 hours laboratory)

499L Independent Laboratory Study (1-3)
Open to undergraduate students by consent of instructor with whom the student wishes to pursue independent laboratory study in biology. May be repeated for credit.

502 Seminar in Biology (3)
Open to graduate students only by consent of instructor. May be repeated for credit.

503 Seminar in Modern Concepts in Biology (3)
Investigation of major integrative themes in biological sciences and exploration of the ways in which these permeate all levels of biological thought. May be repeated for credit.

505 Seminar in Molecular Biology (3)
Selected advanced topics in molecular biology, such as macromolecular structure, thermodynamics in biological systems and molecular regulation of cellular activities. Open to graduate students and other qualified students by consent of instructor. May be repeated for credit.

510 Seminar in Physiology (3)
Selected topics within the area of Physiology. Open to graduate students and other qualified students by consent of instructor. May be repeated for credit.

512 Seminar in Genetics (3)
Selected advanced topics within the general area of genetics. Open to graduate students and to other qualified students only by consent of instructor. May be repeated for credit.

517 Seminar in Ecology (3)
Selected advanced topics within the general area of ecology. Open to graduate students and to other qualified students only by consent of instructor. May be repeated for credit.

518 Seminar in Marine Science (3)
Selected advanced topics within the general area of marine science. Open to graduate students and to other qualified students, only by consent of instructor. May be repeated for credit.

520 Seminar in Microbiology (3)
Selected topics in the areas of microbiology. Open to graduate students and other qualified students by consent of instructor. May be repeated for credit.

524 Seminar in Immunology (3)
Selected topics in immunochemistry, immunobiology and medical immunology. Open to graduate students and other qualified students by consent of instructor. May be repeated for credit.

540 Seminar in Botany (3)
Selected advanced topics within the general area of botany. Open to graduate students and to other qualified students by consent of the instructor. May be repeated for credit.

560 Seminar in Zoology (3)
Selected advanced topics within the general area of zoology. Open to graduate students and to other qualified students by consent of the instructor. May be repeated for credit.

580 Advanced Topics in Graduate Biology (1-3)
Prerequisites: graduate standing in biology and consent of instructor. Designed to consider current research topics, experimental design and problem solving in biological systems. May be repeated for credit.

598 Thesis (1-3)
May be repeated for a maximum of 6 units of credit.

599 Independent Graduate Research (1-3)
Open to graduate students only by consent of instructor with whom the student wishes to pursue independent study in biology. May be repeated for credit.

MARINE BIOLOGY/OCEANOGRAPHY COURSES

(See departmental course descriptions for the courses listed below)

Biological Science
- **318 Marine Biology (3)**
- **318L Marine Biology Laboratory (1)**
- **417 General Oceanography (3)**
- **418 Biological Oceanography (4)**
- **419 Marine Ecology (4)**
- **420 Biology of Marine Plankton (4)**
- **446 Phycology (4)**
- **461 Invertebrate Zoology (4)**
- **475 Ichthyology (4)**
- **518 Seminar in Marine Science (3)**

Earth Science
- **110 Introduction to Physical Oceanography (3)**
- **330 Hydrology Meteorology and Oceanography (4)**
- **430 Advanced Studies in Meteorology and Oceanography (2)**

MEDICAL BIOLOGY COURSES

(See departmental course descriptions for the courses listed below)

Biological Science

361 Mammalian Anatomy and Physiology (4)
423 Pathogenic Microbiology (4)
424 Immunology (4)
425 Pathobiology (4)
426 General Virology (3)
426L General Virology Laboratory (1)
445 Mycology (4)
462 Parasitology (4)
468 Comparative Animal Physiology (4)
469 Hematology (3)
598 Thesis (3)
599 Independent Graduate Research (3)

Chemistry

312 Quantitative Chemistry (4)
420 Clinical Chemistry (4)
421A,B General Biochemistry (3,3)
422A,B General Biochemistry Laboratory (2,2)

DEPARTMENT OF CHEMISTRY

FACULTY
Carl Prenzlow
Department Chair
David Bailey, Robert Belloli, John Bryden, Fred Dorer, Don Eden, Alfred Esser, Barbara Finlayson, Gene Hiegel, Harvey Janota, Karl Kadish, Andrew Montana, Glenn Nagel, L. Donald Shields,* Robert Spenger, Joseph Thomas, Carl Wamser, Bruce Weber, Patrick Wegner, W. Van Willis, Dorothy Pan Wong

The Department of Chemistry is on the approved list of the American Chemical Society.

The curriculum is planned to provide thorough instruction in the basic principles and concepts of chemistry for students who will (1) advance to graduate work in chemistry or biochemistry; (2) teach in the science programs of secondary schools; (3) seek employment in industry or government; (4) advance to medical or dental training or (5) pursue a chemistry degree or minor in support of a career in other areas such as physics, biology, psychobiology and business.

The department offers two baccalaureate degrees, the Bachelor of Science (B.S.) and the Bachelor of Arts (B.A.). The B.A. degree may be obtained with a biochemical emphasis.

To qualify for either a B.S. or a B.A. degree, students must have a C average in all courses required for a major including prerequisites in related sciences or mathematics. No credit toward the major will be allowed for specific major courses in which a grade of D is obtained.

Students are urged to consult regularly with the chemistry faculty about their programs.

BACHELOR OF SCIENCE IN CHEMISTRY

The Bachelor of Science degree is specifically recommended for students planning to go directly into industrial chemistry and for those who wish to do graduate work in physical, analytical, organic or inorganic chemistry. Students who complete this program and include an advanced course in instrumental analysis (such as Chemistry 411) and at least one upper division chemistry elective will qualify for certification by the American Chemical Society.

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* University administrative officer

The B.S. degree is also recommended for students planning to go directly into professional biochemistry and for students planning to attend graduate school in biochemistry or molecular biology. Curriculum differences, including biochemistry courses are explained in footnote 2 below.

Career Breadth Requirements for the B.S. Degree (12 units)

Students planning to obtain the B.S. degree must satisfy the career breadth requirements. These requirements may be met in either of two ways:

1. Students who plan to pursue graduate work in chemistry or related fields should obtain a reading knowledge of French, German or Russian since this is required by most graduate schools. This requirement is met by taking 12 units of one of these foreign language courses or by passing a challenge examination. These units may be used, in part, to satisfy general education requirements.
2. Students who do not intend to pursue graduate studies may elect the following option in place of foreign language courses: three units of computer science plus nine units of department approved electives. These electives are intended to further the students' career objectives and may not be used to satisfy requirements in general education.

Basic Chemistry Curriculum for a B.S. in Chemistry[1] [2]

Required courses in chemistry	*Units*	*Units*
General Chemistry (101A,B)	10	
Organic Chemistry (305A,B)	10	
Quantitative Chemistry (312)	4	
Inorganic Chemistry (325)	3	
Physical Chemistry (371A,B)	6	
Physical Chemistry Lab (441)	3	
Senior Research (495 or 499)	4	
Upper division elective	3	
Total Units	43	
Related areas		
Physics (225A,B,C, 226A,B,C)	12	
Mathematics (150A,B, 250, 281)	15	
Biological science	5	
Total units	32	
Total units in science and mathematics		75
General education units, including 6 units of English composition, but not including 13 units of science and mathematics (see general education requirements)		32
Elective units[1]		17
Total units for the B.S. in Chemistry		124

Suggested Eight Semester Program for a B.S. in Chemistry

First Semester (Freshman)

	Units
Chem 101A Gen Chem	5
Math 150A Anal Geo and Calc	4
Eng 100 or Eng 103 Composition	3
Gen education courses	4
	16

Second Semester (Freshman)

	Units
Chem 101B Gen Chem	5
Math 150B Anal Geo and Calc	4
Physics 225A, 226A Fund Physics	4
Eng literature or composition	3
	16

Third Semester (Sophomore)

Chem 305A Org Chem	5
Math 250 Inter Calc	4
Physics 225B, 226B Fund Physics	4
Gen education courses	3
	16

Fourth Semester (Sophomore)

Chem 305B Org Chem	5
Math 281 Lin Alg Dif Eq	3
Physics 225C, 226C Fund Physics	4
General education courses	3
	15

[1] Check with adviser to see if career breadth elective courses will be appropriate.

[2] Students wishing advanced preparation in biochemistry may substitute Chemistry 422A,B: Chemistry 423A,B and eight additional units of biology (three units must be upper division) in place of Chemistry 325, Chemistry 441, the required chemistry elective, and Mathematics 281.

Fifth Semester (Junior)

Chem 371A Physical Chem	3
Chem 312 Quant Chem	4
General education courses	3
Biological science	5
	15

Sixth Semester (Junior)

Chem 325 Inorg Chem	3
Chem 371B Physical Chem	3
Chem 411 Inst Anal	4
General education courses	6
	16

Seventh Semester (Senior)

Chem (495 or 499)	2
Chem 441 Phys Chem Lab	3
General education courses	3
Electives	8
	16

Eighth Semester (Senior)

Chem 495 (or 499)	2
General education courses	4
Electives	8
	14

Suggested Eight Semester Program for a B.S. in Chemistry Including Biochemistry Courses

First Semester (Freshman)

	Units
Chem 101A Gen Chem	5
Math 150A Anal Geo and Calc	4
Eng 100 or 103 Composition	3
General education courses	3
	15

Second Semester (Freshman)

	Units
Chem 101B Gen Chem	5
Math 150B Anal Geo and Calc	4
Physics 225A, 226A Fund Physics	4
Eng lit or composition	3
	16

Third Semester (Sophomore)

Chem 305A Org Chem	5
Physics 225B, 226B Fund Physics	4
Bio Sci 103 Bio of Org	5
General education courses	2
	16

Fourth Semester (Sophomore)

Chem 305B Org Chem	5
Physics 225C, 226C Fund Physics	4
Bio Sci 104 Bio of Org	5
	14

Fifth Semester (Junior)

Chem 371A Physical Chem	3
Chem 312 Quant Chem	4
Chem 423A, 422A Gen Biochem	5
Math 250 Inter Calc	4
	16

Sixth Semester (Junior)

Chem 371B Physical Chem	3
Chem 423B, 422B Gen Biochem	5
Bio Sci (upper div)	3
General education courses	4
	15

Seventh Semester (Senior)

Chem 495 (or 499)	2
General education courses	8
Electives	6
	16

Eighth Semester (Senior)

Chem 495 (or Chem 499)	2
General education courses	9
Electives	5
	16

BACHELOR OF ARTS IN CHEMISTRY

The Bachelor of Arts in Chemistry is offered for students who are planning careers which require a sound background in fundamental chemistry, but not the specialized training needed by a professional chemist or biochemist.

Option one in the B.A. program is particularly suited for those who plan to go into areas such as secondary education, technical sales, food processing, chemical patent law, forensic sciences and environmental law.

Option two in the B.A. program, which emphasizes biochemistry, is strongly recommended for any student who is preparing for admission to a school of dentistry, medicine, pharmacy or veterinary medicine. With suitable electives in the biological sciences, this option provides an excellent foundation for graduate school in molecular biology or for special training in medical technology or clinical chemistry.

One year of foreign language (German, French or Russian) is recommended for those going on to graduate work.

Chemistry Curriculum for a B.A. in Chemistry

Required courses in chemistry:	*Units*
Chem 101A,B General Chemistry	10
Chem 301A,B Organic Chemistry[1]	6
Chem 302 Organic Chemistry Laboratory[1]	2
Chem 312 Quantitative Chemistry	4
Chem 361A,B Physical Chemistry[2]	6
Chem 325 Inorganic Chemistry	3
Chem 495/499 Senior Research or Independent Study[5]	2
Upper Division Chemistry Lab[3]	3-4
Total	36-37

Prerequisite courses in related areas:

(May be used to satisfy the general education requirement in the natural sciences and mathematics.)

Physics (211A,B)[2] [4]
Physics (212A,B)[2] [4]
Mathematics (150A,B)[2]
Biological Science[5]
Computer science, such as Engineering 205[5]

General education units, including 6 units of courses which emphasize language skills and writing, such as English composition	45
Elective units[6]	42-43
Total required units for the B.A. in Chemistry	124

[1] Students may substitute Chem 305A,B (10 units)

[2] Physics 211A,B, Physics 212A,B and Math 150A,B are prerequisite for Chem 361A

[3] The following courses will satisfy this requirement: Chem 403, 411, 422A,B, 427, or 441.

[4] Students who are candidates For professional schools such as medicine and dentistry, graduate school in biology or a teaching credential in physical science should substitute Physics 225A,B,C, 226A,B,C (12 units). All other students are recommended to take Physics 312 (Modern Physics) as an elective.

[5] Three units of a computer science course and five units of biological science are prerequisites for either Chem 495 or 499.

[6] Generally includes 6-10 units of upper division chemistry or related sciences. These may satisfy the general education requirement in the natural sciences.

Secondary Teaching Credential

To qualify for a waiver from the Ryan Act Examination and to obtain a secondary teaching credential in the physical sciences, these changes in the above program must be met:

1. Students taking a teaching credential in this area need not take Senior Research or Independent Study (Chem 495/499).
2. Students are required to take Biological Science 103 and are recommended to take Biological Science 104.
3. Students are required to take 24 units of education courses plus the following science courses: Earth Science 101, Earth Science 103 and Engineering 205.
4. Students taking a teaching credential should substitute Science Education 312 for upper division chemistry laboratory requirement.

B.A. in Chemistry with emphasis in Biochemistry

Required courses in Chemistry:	*Units*
Chem 101A,B General Chemistry	10
Chem 301A,B Organic Chemistry[1]	6
Chem 302 Organic Chemistry Laboratory[1]	2
Chem 312 Quantitative Chemistry	4
Chem 361A,B Principles of Physical Chemistry[2]	6
Chem 423A,B General Biochemistry	6
Chem 422A,B Biochemistry Lab	4
Chem 495/499 Senior Research and Independent Study[4]	2
Total	40

Prerequisite courses in related areas:

(Satisfies the general education requirement in the natural sciences and mathematics)

Physics 211A,B[2] [3]	6
Physics 212B[2] [3]	2
Mathematics 150A,B[2]	8

Biology[4]	13
Engineering 205[4]	3
General Education units, including 6 units of English composition, but not including 13 units of science and mathematics	45
Elective units[5] [6]	39
Total required units for the B.A. in Chemistry with biochemistry emphasis	124

[1]Students may substitute Chem 305A,B (10 units)

[2]Physics 211A,B, Physics 212A,B, and Math 150A,B are prerequisites for Chemistry 361A,B.

[3]Students who are candidates for professional schools such as medicine and dentistry, or graduate school may substitute Physics 225A,B,C, Physics 226A,B,C (12 units). Physics 312 (Modern Physics) is suggested for other students.

[4]Three units of a computer science course, such as Engineering 205 and 13 units of biological science courses, including three units at the upper division level, are prerequisites for Senior Research, Chem 495, or Independent Study (Chem 499) in the biochemistry emphasis.

[5]Generally includes 6-10 units of upper division chemistry or related sciences. These may satisfy the general education requirement in the natural sciences.

[6]Chemistry 351 is not acceptable as an elective for the biochemistry emphasis.

MINOR IN CHEMISTRY

A minimum of 24 acceptable units of chemistry, including 14 units of upper division chemistry courses, excluding independent study, are required for a chemistry minor.

MASTER OF ARTS IN CHEMISTRY

The Master of Arts in Chemistry is designed to qualify students for more advanced work in chemistry, to provide preparation which will lead to responsible positions in industrial or government research and development laboratories, and to provide preparation for the effective teaching of chemistry in the high schools and community colleges.

The program provides fundamental courses at a level and depth commensurate with those taken during the first year of a doctoral program and provides an introduction to research and research methods.

Prerequisites

Students must meet the university and school requirements for admission in conditionally classified standing with the declared objective of this degree: a baccalaureate degree from an accredited institution and a gradepoint average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures).

A student who meets the requirements for conditionally classified graduate standing, as well as the following requirements, may be admitted as a classified graduate, upon the development of an approved study plan:

1. An undergraduate major in chemistry or have taken a combination of chemistry and other science courses which the department graduate committee deems to be adequate preparation.

2. A GPA of 2.5 in upper division chemistry courses.

   Qualifying examinations, administered by the department twice a year, are required of all students entering the program. Qualifying examinations are required in the areas of physical and organic chemistry, plus two from the areas of analytical, inorganic or biochemistry. The results of these examinations will be used to advise the student in developing the study plan.

   A student may be conditionally classified with certain subject deficiencies, but such deficiencies must be removed either (1) by committee-approved coursework with a grade of B or better, or (2) by passing the next qualifying examination. Proficiency in reading chemical literature in one approved foreign language must be demonstrated before advancement to candidacy.

Study Plan

The degree program consists of 30 units of graduate committee-approved coursework completed with a minimum grade-point average of 3.0. Each student will prepare a study plan in consultation with his research director. This plan must be approved by the graduate coordinator and the department graduate committee.

A. The following courses are required of all students: *Units*

Chem 505 Seminar in Chemistry 2

Chem 599	Independent Graduate Research	3 (minimum)
Chem 598	Thesis or Chem 597 Project	1-2

Study plans of students electing the Project alternative may contain no more than three units of Chem 599.

B. Each student is required to take at least two 500-level courses other than those listed above. A minimum total of 15 units of 500-level courses is required.

C. The courses in the study plan must include a minimum of nine units (not including Chemistry 505, 598, 599) in one of the following areas of specialization, including related areas: (1) analytical chemistry; (2) biochemistry; (3) inorganic chemistry; (4) organic chemistry; (5) physical chemistry.

D. In order to insure sufficient breadth and background, each student is required to take one course from each of the following groups if he has not passed (with a B or better) an equivalent course as an undergraduate. However, courses taken as an undergarduate cannot be applied to the 30 units required for graduation.

		Units
Group I—Chem 411	Instrumental Analysis	4
Chem 425	Advanced Inorganic Chemistry	3
Group II—Chem 423A	General Biochemistry	3
Chem 431	Advanced Organic Chemistry	3
Group III—Chem 450	Advanced Physical Chemistry	4
Chem 451	Quantum Chemistry	3

For further details or advisement, please refer to the graduate adviser of the Chemistry Department.

See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin.*

CHEMISTRY COURSES

100 Introductory Chemistry (4)

Prerequisite: one year of high school algebra. Fundamental principles of chemistry with emphasis placed on the chemistry of inorganic compounds. Does not apply as credit for majors in the physical or biological sciences or for minors in the physical sciences. *("G" sections in the schedules are for students who do not intend to take additional science courses, and "S" sections are for students who plan to continue careers in science and/or engineering) (3 hours lecture, 3 hours laboratory)*

101A,B General Chemistry (5,5)

Prerequisites: One year of high school algebra plus one of the following: one year of high school chemistry with a grade of "B" or better; Chemistry 100S with a grade of "C" or better; or passage of the Chemistry Placement Examination. High school physics strongly recommended. Intended for majors and minors in the physical and biological sciences. **A**—The fundamental principles of chemistry including stoichiometry, gas laws, solid and liquid states, changes of state, modern atom concepts, chemical bonding and chemical equilibrium with emphasis on quantitative acidbase chemistry. Laboratory: experiments applying elementary physical chemistry and volumetric quantitative analysis. (3 hours lecture discussion, 6 hours laboratory) **B**—Oxidation-reduction chemistry, introduction to chemical thermodynamics and chemical kinetics, discussions of the chemistry of representative and transition elements, and introductions to biochemistry, organic and nuclear chemistry. Laboratory: experiments concerning gravimetric and volumetric quantitative analysis, selected topics in qualitative analysis and inorganic preparations. (3 hours lecture discussion, 6 hours laboratory)

105 General Chemistry for Engineers (3)

Prerequisite: Chemistry 101A. Description the same as Chemistry 101B. Open only to engineering majors. Not open to students with credit in Chemistry 101B.

110 Man's Physical Universe (4)

(See course description under Physical Science)

300 Introduction to Organic and Physiological Chemistry (3)

Prerequisites: Chemistry 100 or equivalent. An introduction to organic chemistry and the

chemistry of the human body with emphasis on medical applications. Primarily for students in the nursing program.

300L Introduction to Organic and Physiological Chemistry Laboratory (1)

Prerequisites: Chemistry 100 or equivalent. The chemistry and properties of major classes of compounds in organic and biochemistry. Primarily for students enrolled in the nursing program.

301A,B Organic Chemistry (3,3)

Prerequisite: Chemistry 101B or equivalent. Chemistry 301B must involve concurrent enrollment in Chemistry 302B or 302. A course in organic chemistry designed for the non-chemistry major or for those seeking a B.A. in Chemistry. **A**—Fundamental concepts relating to carbon compounds with emphasis on structure and chemical bonding. Reactions of aliphatic and aromatic hydrocarbons, alkyl halide and alcohols, spectroscopy and reaction mechanisms. **B**—Reactions of ethers, carboxylic acids, aldehydes, ketones, amines and phenols. Chemistry and structure of polymers, fats, carbohydrates, amino acids and proteins. Recommended for biology majors and students planning to enter a paramedical profession.

302 Organic Chemistry Laboratory (2)

Prerequisite: Chemistry 301A or equivalent. Chemistry 302 (6 hours laboratory) must be taken concurrently with 301B. A course designed to give training in the basic techniques of the organic chemistry laboratory, including synthesis of typical aliphatic and organic compounds.

302A,B Organic Chemistry Laboratory (1,1)

Chemistry 302A (3 hours laboratory) must be taken concurrently with Chemistry 301A. Chemistry 302B (3 hours laboratory) must be taken concurrently with Chemistry 301B. A course designed to give training in the basic techniques of the organic chemistry laboratory, including synthesis of typical aliphatic and aromatic compounds. Students wishing to fulfill all of their organic chemistry laboratory requirement in a single semester should enroll in Chemistry 302.

305A,B Organic Chemistry (5,5)

Prerequisite: Chemistry 101B or equivalent. A comprehensive course in organic chemistry designed for the chemistry major. Emphasis in lecture and laboratory is placed upon modern theories of structure and reaction mechanism with applications of modern instrumental and spectroscopic methods. (3 hours lecture discussion, 6 hours laboratory)

309 Fundamentals of Physical Chemistry (3)

Prerequisites: Chemistry 101B, Mathematics 150B and one year of college physics. A short course in physical chemistry presenting topics in thermodynamics, kinetics, nonelectrolyte and electrolyte solution theory, changes of phase and related subjects with special applications to the life sciences. Does not fulfill major requirements for Chemistry majors. (2 hours lecture)

312 Quantitative Chemistry (4)

Prerequisites: Chemistry 101A,B (grade C or better) and at least one semester of organic chemistry lecture and laboratory, Physics 211A,B or 225A, B strongly recommended. Modern analytical chemistry including contemporary separation methods, nonaqueous quantitative chemistry, and introductions to instrumental methods of analysis in electrochemistry, absorption spectroscopy, and radiochemistry. (2 hours lecture discussion, 6 hours laboratory)

325 Inorganic Chemistry (3)

Prerequisites: Chemistry 101A,B, 305A,B, or equivalent. The chemistry of the main group elements and a brief introduction to transition metal chemistry.

351 Introduction to Biochemistry (4)

Prerequisites: one year of organic chemistry and five units of biology. A survey of the chemistry and metabolism of proteins, carbohydrates, lipids, hormones, in plants, animals and microorganisms. (3 hours lecture discussion, 3 hours laboratory)

361A,B Introduction to Physical Chemistry (3,3)

Prerequisites: One year of organic chemistry; Math 150A,B; one year of physics. Introduction to the theory and applications of thermodynamics, chemical equilibria, properties and solutions and electrochemical cells, kinetics, and macromolecules in chemical systems. Not applicable to the B.S. in Chemistry.

371A,B Physical Chemistry (3,3)

Prerequisites: Mathematics 250, one year of physics and Chemistry 101B. Chemistry 312

recommended. Equivalent courses may be substituted. A study of the fundamental laws and theories of chemistry. Thermodynamics, solutions, chemical and phase equilibria, electrochemistry, transport phenomena, introduction to atomic and molecular structure, rotation and vibration spectroscopy, statistical mechanics, kinetics are the major topics discussed. Discussions with emphasis on the use of fundamental principles to solve problems.

403 Analysis of Organic Compounds (3)

Prerequisites: one year of organic chemistry and Chemistry 312 or equivalents. Isolation and identification of organic compounds using chemical and instrumental techniques. (1 hour lecture discussion, 6 hours laboratory)

409 Photochemistry of Biological Systems (4)

Prerequisites: organic chemistry and an upper division course in animal or plant physiology or consent of instructor. A study of the effects of light of various wavelengths and intensities on organisms and their organs. Also techniques on equipment calibration and light measurements.

411 Instrumental Analysis (4)

Prerequisites: Chemistry 312, one year of organic chemistry and one year of college physics, 371B corequisite. Advanced topics in absorption and emission spectroscopy, nuclear magnetic resonance, electron spin resonance, mass spectrometry, gas chromatography, x-ray methods, electrochemistry and radiochemistry. (2 hours lecture discussion, 6 hours laboratory)

420 Clinical Chemistry (4)

Prerequisite: Chemistry 351 or equivalent. Principles of biochemistry and analytical methods applied to physiological fluids. This course cannot apply to the major in chemistry. (2 hours lecture, 6 hours laboratory)

421A,B Biological Chemistry (3,3)

Prerequisite: one year of organic chemistry or equivalent. Survey of major areas of biochemistry, including chemistry and functions of compounds of biochemical interest. Course emphasizes bio-organic mechanisms. Not aPplicable for a chemistry major.

422A,B General Biochemistry Laboratory (2,2)

Prerequisites: concurrent or prior enrollment in Chemistry 421A,B or 423A,B. Laboratory designed to illustrate the chemistry and metabolism of carbohydrates, nucleic acids, lipids, and proteins, to introduce techniques of enzyme chemistry and isolation, and to introduce the student to research methods. (6 hours laboratory)

423A,B General Biochemistry (3,3)

Prerequisites: Chemistry 305B, 312 and concurrent or prior registration in 371A. Recommended for chemistry majors. Survey of major areas of biochemistry, with emphasis on the structural chemistry and function of biomolecules, mechanisms of enzyme action and physical chemical approaches to the study of biopolymers and biochemical systems. Readings from current literature required.

425 Advanced Inorganic Chemistry (3)

Prerequisites: Chemistry 101A,B or equivalent, one year organic chemistry, Chemistry 325 and 371A,B. An introduction to the bonding, structure and reactivity of transition and lanthanide elements. Topics treated include molecular orbital and ligand field theory, classical metal complexes and organometallic chemistry of the transition elements.

427 Preparative Techniques (4)

Prerequisites: Chemistry 312 and 325, one year organic chemistry (concurrent enrollment acceptable) or equivalents. Laboratory exercises using advanced techniques and modern methods for the preparation and identification of chemical compounds. Readings in the current literature required.

431 Advanced Organic Chemistry (3)

Prerequisites: one year organic chemistry, Chemistry 371A and 371B. Theoretical aspects of organic chemistry with emphasis on the modern concepts of structure and chemical reactivity.

441 Physical Chemistry Laboratory (3)

Prerequisite: Chemistry 371A,B and 312. Laboratory exercises illustrating the physical principles of chemistry. (1 hour lecture discussion, 6 hours laboratory)

450 Advanced Physical Chemistry (3)

Prerequisite: Chemistry 371A,B or equivalent. An advanced study of classical ther-

modynamics followed by an introductory study of statistical mechanics and chemical kinetics.

451 Quantum Chemistry (3)

Prerequisite: Chemistry 371A,B. An introduction to the application of quantum mechanics. Postulates and theories approximation methods, the electronic structure of atoms and periodic system, molecules and the chemical bond, and introduction to group theory.

472 X-Ray Crystallography (4)

Prerequisites: Physics 225A,B, Mathematics 250, and one year organic chemistry, or equivalent courses. Morphological crystallography, crystal symmetry and crystallographic groups, X-rays and X-ray diffraction, the recording and interpreation of diffraction phenomena, and the analysis of crystal structures, including computer applications. (3 hours lecture, 3 hours laboratory)

480 Topics in Contemporary Chemistry (1-6)

Prerequisite: upper-division standing in chemistry. Selected areas of interest in chemistry will be discussed. May be repeated for credit.

490 Internship in Chemistry (1-4)

Prerequisites: senior or graduate standing in science and consent of instructor. Designed to acquaint students with applications of chemistry to problems in the community. Students will work in a laboratory setting in public and private concerns. Chemistry majors may take as career breadth requirement units.

495 Senior Research (1-3)

Prerequisites: three one-year courses in chemistry, senior standing and consent of supervising instructor before enrollment. Open only to students with a 3.0 GPA in chemistry. Introduction to the methods of chemical research through a research project carried out under the supervision of one of the Chemistry Department faculty. May be repeated for credit. Only 6 units may apply toward B.A. degree.

419 Independent Study (1-3)

Prerequisites: upper division standing and completion of two one-year courses in chemistry. Study of some special topic in chemistry, selected in consultation with the instructor and carried out under his supervision. May be repeated for credit. Only six units may apply toward B.A. degree.

505 Seminar (1-2)

Prerequisites: graduate standing and consent of department. Student presentations of recent contributions to the chemical literature. May be repeated for credit.

511 Theory of Separations (3)

Prerequisites: Chemistry 312, 371A,B and one year organic chemistry. The theory, application, and limitations of physical and chemical separation techniques.

512 Electroanalytical Chemistry (4)

Prerequisites: Chemistry 312, 371A,B and one year organic chemistry. Advanced topics in potentiometry, amperometry, electroanalysis, coulometry, conductometry, polarography, single and multiple sweep voltammetry, chronopotentiometry and chronoamperometry.

525 Radiochemistry (4)

Prerequisite: Chemistry 371A,B. Introduction to the theory of nuclear properties and phenomena; their detection and measurement; application of their technology to chemical experimentation.

528 Coordination Chemistry (3)

Prerequisite: Chemistry 425 or equivalent. A concise treatment of the structure and bonding of coordinating compounds, preparative methods and a survey of ligand.

531 Theorectical Organic Chemistry (3)

Prerequisites: Chemistry 431 and 550. The application of theoretical concepts to current topics of physical organic chemistry research.

535 Organic Synthesis (3)

Prerequisites: Chemistry 301A,B or 305A,B and 371A, B (concurrent enrollment acceptable). Methods of synthetic organic chemistry and their application to construction of organic molecules. Recent developments covered.

539 Chemistry of Natural Products (3)

Prerequisite: Chemistry 301B. Selected topics from the chemistry of the alkaloids, terpenes, steroids and a variety of other natural products of plant and animal origin. Discussions

included on the classification, structure elucidation, synthesis, biosynthesis and physiological activity of these compounds.

540 Chemistry of Proteins and Nucleic Acids (3)

Prerequisite: Chemistry 421B or 423B or consent of instructor. Chemical synthesis of macromolecules, Physical and chemical methods of determining the primary, secondary and tertiary structure, theories of structural organization and macromolecular interactions.

543 Physical Chemistry of Biological Macromolecules (3)

Prerequisites: Chemistry 309 or 371, 421 or 423, or consent of instructor. Discussion of the architecture, stability, and associative equilibria of proteins and nucleic acids in solution. Emphasis on hydrodynamic, electrophoretic, and spectrophotometric techniques.

544 Bioenergetics (3)

Prerequisite: Chemistry 421A,B or 423A,B; 309A or 371A or consent of instructor. Biochemical structure-function relationship in membranes; membrane isolation fractionation and reconstitution techniques. Discussion of membrane dependent energy transduction process (vision, photosynthesis, nerve excitation and oxidative phosphorylation).

545 Molecular Evolution (3)

Prerequisite: one year of biochemistry or consent of instructor. The evolution of proteins, nucleic acids and the genome including modern techniques for the study of the origin and evolution of life at the molecular level. The theoretical relationship of neo-Darwinian and non-Darwinian evolution, neutral mutations, gene amplification, construction of Phylogenetic trees, rates of molecular evolution, mathematical models, and design of new experiments will be emphasized.

546 Metabolism and Catalysis (3)

Prerequisite: Chemistry 421B or 423B or consent of instructor. Metabolic and biosynthetic reactions and their regulation. The kinetics and mechanism of enzyme-catalyzed reactions and the role of enzymes in physiological control mechanisms.

551 Quantum Mechanics (3)

Prerequisite: Chemistry 451. Elementary applications. Perturbation theory, collision problems, relativistic theory of the electron, theories of valence, complex compounds and complex crystals.

555 Chemical Kinetics (3)

Prerequisite: Chemistry 450 or consent of instructor. Analysis of reacting systems; theories of chemical kinetics; discussion of gas phase, liquid phase and surface reactions including recent developments.

561 Statistical Thermodynamics (3)

Prerequisite: Chemistry 450 or equivalent. A study of statistical mechanics and its application to chemical problems.

575 Theory of Spectroscopy (3)

Prerequisite: Chemistry 451 or equivalent. Group theory, symmetry mode, intensities and selection rules, selected topics from electronic spectra of atoms and molecules, UV, IR, NMR, ESR and Raman spectroscopy.

580 Topics in Advanced Chemistry (1-6)

Prerequisite: graduate standing in chemistry. Selected areas of current research interest in chemistry will be discussed. May be repeated for credit.

598 Thesis (1-2)

Prerequisites: an officially appointed thesis committee and advancement to candidacy. Guidance in the preparation of a project or thesis for the master's degree.

599 Independent Graduate Research (1-6)

Prerequisite: graduate standing in chemistry. May be repeated for credit.

DEPARTMENT OF EARTH SCIENCE

FACULTY

Margaret Woyski
Department Chair

Christopher Buckley, John Cooper, Neil Maloney, Prem Saint

The Department of Earth Science offers a program leading to the Bachelor of Arts in Earth Science. This program is designed to provide a broad foundation in the earth sciences to prepare students for (1) graduate work in one of the earth sciences; (2) teaching earth science in secondary and elementary schools; (3) employment in government and industry; (4) other major fields supported by an earth science minor; (5) an avocation and an awareness and understanding of the earth.

BACHELOR OF ARTS IN EARTH SCIENCE

Of the 124 units required for graduation, 40 are in earth science, 30-38 in related fields, 29 in general education courses (other than related fields) and 25-17 are undesignated.

All majors must complete a core of courses in the various areas of earth science. This core curriculum includes geology, hydrology, meteorology, planetary science, soils science and oceanography. Students will select additional advanced level courses in the areas of their interests and professional goals after consultation with their faculty adviser.

To qualify for the B.A. in Earth Science, students must have a C or better in all earth science courses required for the major; students must have a C average in required courses in related fields. A proficiency in a modern foreign language is recommended for students who plan to continue in graduate school. Proficiency in English composition is required. This requirement is normally met by passing a course in composition; the department may waive the requirement for students who consistently submit written work of superior quality.

Minimum Course Requirements for the Major

Core requirements: ..... *Units* 29

One introductory course
- 101 Physical Geology (4)
- 110 Introduction to Oceanography (3) and 180 Earth Science Lab (1)
- 120 Introduction to Earth Science (3) and 180 Earth Science Lab (1)

The following courses are required:
- 201 Earth History (3)
- 303 Rocks and Minerals (3)
- 320 Introduction to Paleontology and Stratigraphy (3)
- 360 Earth Tectonics (3)
- 380 Field and Laboratory Techniques (3)
- 330 Hydrology, Meteorology and Oceanography (4)
- 335 General Hydrology (3)

One course from the following:
- 300 Introduction to Astronomy (4)
- 350 General Astronomy (3)
- 370 Resources and Environment (3)
- 375 Engineering Earth Science (3)

Earth science electives 11

Four 400-level courses (8)
Advanced studies may be repeated for credit with consent of instructor.
Additional electives in earth science (3)

Total units required in earth science of which at least 24 must be upper division 40

Requirements in related fields (at least 10 courses). Courses in *related fields* will be tailored

to the career goals of the student and selected in consultation with his major adviser. *The student should consult his adviser immediately upon entering the major.*

These courses will include:
Mathematics 130 and 230 or 150A,B (250 and 281 recommended)
Physics 211 and 212A,B or 225 and 226A,B (C,D recommended)
Chemistry 101A,B
Biology 101 or 103 and 104 for teaching credential candidates
Geography 312 or another upper division physical geography course
Engineering 205 recommended
Science Education 312 for teaching credential candidates *or*
An additional course in the above related fields.

Credentials Program
Requirements for waiver of the comprehensive examination for a *teaching credential in physical science* include: Earth Science 101, 201, 303, 320, 330 or 340, 350, 360, 370, 380; Mathematics 130 and 230; Chemistry 101A,B; Physics 211 and 212A,B; Engineering 205; Biology 103 and 104; Geography 312; Science Education 312; professional education courses.

Recommended High School Preparation
Mathematics—four years, including trigonometry
Chemistry and/or physics
Modern foreign language—three years (German, Russian or French preferred)

Recommended Community College Preparation
Students are advised to satisfy the requirements in mathematics, chemistry, physics and biology as well as introductory earth science.

Suggested Program for a B.A. in Earth Science

First Semester	Units	Second Semester	Units
Earth Science 101	4	Mathematics 150A or 130	4
Mathematics 100	4	Biology 101 or 103	5
General education*	6	Chemistry 101A	5
	14		14

Third Semester		Fourth Semester	
Earth Science 201	3	Earth Science 303	3
Mathematics 150B or		Physics 211A or 225A	4
Biology 104	4/5	Engineering 205	3
Chemistry 101B	5	General education*	3
	12/13		13

Fifth Semester		Sixth Semester	
Earth science core	6	Earth science core	6
Physics 211B or 225B	4	Physics 225C or	
General education*	3	Mathematics 230	4/3
	13	General education*	3
			13/12

Seventh Semester		Eighth, Ninth and Tenth Semesters	
Earth science core	3	Earth science electives	12
Geography, upper division	3	Upper division electives	6
General Education*	3	General education*	6
Earth science electives	3	Electives	9
	12		33

*General education courses should include: English composition or communications (writing), American history, political science, another social science, and three courses in arts and humanities. In case of conflict with courses in related fields, the general education courses should be deferred.

MINOR IN EARTH SCIENCE

A minimum of 20 units are required for a minor, six of which must be upper division. The courses shall be selected by the student in consultation with his minor adviser. Prospective teachers should include courses in physical geology, earth history, meteorology, astronomy, oceanography, and rocks and minerals.

EARTH SCIENCE COURSES

101 Physical Geology (4)

An introduction to the nature of the planet earth, the genesis of rocks and minerals, erosion processes and their effects. Students may develop topics of interest as projects. (3 hours of lecture or discussion, 3 hours laboratory, 1 field trip, or equivalent)

110 Introduction to Physical Oceanography (3)

Prerequisite: high school physics or chemistry and algebra. An introduction to the physical, chemical, and geological nature of the oceans (3 hours lecture, 2 field trips)

120 Introduction to Earth Science (3)

Presents non-science majors with an understanding of the nature of our planet, its place in space, its atmosphere and oceans, its interior, and its changing surface. (1 field trip)

180 Earth Science Laboratory (1)

Prerequisite: Earth Science 120 or 110. A beginning course utilizing the practical tools of the earth scientist. Includes rock and mineral identification, fluvial and marine processes, landform recognition from topographic maps, geologic maps, air and space photographs. Laboratory is self-paced. (3 hours laboratory)

201 Earth History (3)

Prerequisite: Earth Science 101, 120 or consent of instructor. Evolution of the earth as interpreted from rocks, fossils and geologic structures. Plate tectonics provides a unifying theme for consideration of mountain building, evolution of life and ancient environments. (2 hours lecture, 3 hours laboratory, 1 or 2 field trips)

210 Introduction to Meteorology (3)

Prerequisite: high school physics or chemistry and algebra, or consent of instructor. The composition, structure, and circulation of the atmosphere including the origins of storms and other weather disturbances.

300 Introduction to Astronomy (4)

(Same as Physics 300)

303 Rocks and Minerals (3)

Prerequisite: Earth Science 101 and Chemistry 100S or consent of instructor. Basic concepts of mineralogy and petrology, rock and mineral identification, their geologic occurrence and origin, elements of crystal chemistry. (2 hours lecture, 3 hours laboratory)

304 Mineral Recognition (1)

Prerequisite or corequisite: Earth Science 303 or consent of instructor. Laboratory practice in recognition and identification of minerals and crystals. (3 hours laboratory)

305 Hand Specimen Petrology (1)

Prerequisite: Earth Science 303 or consent of instructor. Laboratory practice in recognition and classification of rocks. (3 hours laboratory)

310 Directed Readings in Earth Science (1-2)

Directed readings and/or directed investigations into various aspects of earth science. Topics may include the solar system, continental drift, evolution, weather, ancient life, oceanography, rocks and minerals, or geology of California. May be repeated for credit to a maximum of four units.

320 Introduction to Paleontology and Stratigraphy (3)

Prerequisite: Earth Science 201 or consent of instructor. Important invertebrate animal groups that occur as fossils illustrate taxonomy, morphology, evolution, paleoecology, and biostratigraphy. Stratigraphic principles and practices. Stratigraphic classification and rock assemblages. (2 hours lecture, 3 hours laboratory)

330 Hydrology, Meteorology and Oceanography (4)

Prerequisite: Earth Science 101 or 120. Basic concepts in the occurrence, movement and quality of water in the marine, terrestrial and atmospheric environments. Instrumen-

tation and methodology in hydrology, meteorology, and oceanography. (3 hours lecture, 3 hours laboratory)

335 General Hydrology (3)

Prerequisite: one semester of earth science or consent of instructor. Introduction to the principles governing the nature, occurrence and movement of surface water and groundwater. Practical techniques in evaluating rainfall/runoff relationship, floods, aquifer performance and water quality investigation. (2 hours lecture, 3 hours laboratory)

350 General Astronomy (3)

Prerequisite: Mathematics 130 or 150A and Physics 211A or 225A, or consent of instructor. Methods of astronomy, celestial motion, solar system, stellar types, galactic structure, theories of origin of the universe and solar system (Same as Physics 350)

360 Earth Tectonics (3)

Prerequisites: Earth Science 303, trigonometry, and Physics 211A or 225A, or consent of instructor. Introduction to the structure of the earth by an examination of experimental, field, and geophysical methods. Provides a broad view of structural geology, plate tectonics and geophysics (2 hours lecture, 3 hours laboratory)

370 Earth Resources and Environment (3)

Prerequisite: Earth Science 101 or consent of instructor. Occurrence and development of mineral deposits, energy and water resources. Natural hazards and man's interaction with earth processes. Criteria for resource and environmental planning and management.

375 Engineering Earth Science (3)

Prerequisites or corequisites: Earth Science 380, Mathematics 150A, Physics 211A, or consent of instructor. Engineering properties of rocks and soils; exploration techniques; analysis of earth science principles applicable to engineering problems, report preparation and professional responsibility. (2 hours lecture, 3 hours laboratory or field)

380 Earth Science Field and Laboratory Methods (3)

Corequisite: corresponding earth science core course or consent of instructor. Procedures involved in collecting geological, geophysical, meteorological, hydrological, astronomical, and/or oceanographical field and laboratory data. Written report is required. (1 hour lecture 6 hours laboratory or field)

403 Advanced Studies in Mineralogy and Petrology (2)

Corequisite or prerequisite: Earth Science 303 or consent of instructor. Crystallography, mineralogy, petrology, optical methods or geochemistry. Topics vary from semester to semester. May be repeated for credit with consent of instructor. (1 hour lecture, 3 hours laboratory)

410 Special Topics in Earth Science (2)

Prerequisites: a course in upper division earth science; junior or senior standing. Research concepts and techniques applied to an individual or small-group project which supplements the course-work in Advanced Studies in Earth Science. May be repeated for credit with consent of instructor.

415 Soil Science (2)

Prerequisite: Earth Science 303. The composition, evolution and distribution of soil types with field and laboratory examination of mineralogical, physical and chemical properties of soils for agriculture, structural and urban development applications. (1 hour lecture 3 hours laboratory)

420 Advanced Studies in Paleontology, Stratigraphy and Regional Geology (2)

Corequisite or prerequisite: Earth Science 320 or consent of instructor. Case histories illustrate sedimentary history, paleontological and stratigraphic principles and practices in different geologic periods and provinces. May be repeated for credit with consent of instructor. (1 hour lecture, 3 hours laboratory)

430 Advanced Studies in Meteorology and Oceanography (2)

Prerequisite: Earth Science 330 or consent of instructor. Seminar and laboratory studies in marine geology, meteorology and oceanography. Course content varies from semester to semester. May be repeated for credit with consent of instructor. (1 hour lecture, 3 hours laboratory)

435 Advanced Studies in Hydrology (2)

Prerequisites: Earth Science 303, 335 and 360, or consent of instructor. Advanced in-

vestigations in an elected field of hydrology including groundwater exploration, arid zone hydrology, regional hydrology or water quality surveys. May be repeated for credit with consent of instructor. (1 hour lecture, 3 hours laboratory)

450 Planetary Science (2)

Prerequisite: elementary physics, chemistry and astronomy, or consent of instructor. Nature and evolution of the moon and planets using data from manned and unmanned lunar and planetary missions. Topics include geology of the moon and Mars; planetary atmospheres; planetary interiors; properties, and origins of asteroids, comets, meteorites and tektites; and applications of planetary studies to the early history of the earth.

460 Advanced Earth Tectonics (2)

Prerequisite: Earth Science 360. Tectono-physics of the upper mantle with emphasis on gravity, magnetism and heat flow. Includes field studies, utilizing geophysical instruments. Course content varies from semester to semester. May be repeated for credit with consent of instructor.

470 Applied Earth Science (2)

Prerequisites: Earth Science 303 and 370 or consent of instructor. Application of earth science in fields such as engineering, groundwater, soil science, environmental planning and mineral deposits. Content varies semester to semester. May be repeated for credit with consent of instructor. (1 hour lecture, 3 hours laboratory)

480 Advanced Earth Science Field and Laboratory Methods (2)

Prerequisite: senior standing. Earth science core courses in subject matter to be investigated. A senior level field and lab course serving as the culmination of the individual student's earth science emphasis. Topics may include oceanographic, meteorologic, geologic or other earth science field and laboratory investigations. Under minimum supervision students will fulfill the course requirements with a report or representation.

490 Earth Science Internship (4)

Prerequisite: junior or senior standing in earth science. Earth science work experience, salaried or volunteer, with industry, government or private agencies. Student intern will be supervised by faculty adviser as well as by his employer. (1 hour of seminar plus work experience)

496 Earth Science Tutorials (2)

Prerequisite: 20 units in earth science. Supervised experience in earth science teaching through tutoring or through assisting in laboratory or field classes.

499 Independent Study (1-3)

Independent study of a special topic selected in consultation with instructor and carried out under his supervision. May be repeated for credit.

DIVISION OF ENGINEERING

FACULTY

Eugene Hunt
Division Chair
Richard Brock
Chair, Civil Engineering and Engineering Mechanics
Jack Kemmerly
Chair, Electrical Engineering
James Rizza
Chair, Mechanical Engineering

George Chiang, George Cohn, Munir El-Saden, Jesa Kreiner, Sundaram Krishnamurthy, Young Duck Kwon, Timothy Lancey, Charles Medler, Peter Othmer, Irene Petroff, Dindial Ramsamooj, Chennareddy Reddy, Edward Sowell, Floyd Thomas, Jr.,* Jesus Tuazon, Mahadeva Venkatesan

The Division of Engineering offers programs at the undergraduate and graduate levels. At the undergraduate level the division prescribes certain engineering courses combined with those of other academic departments and schools of the university as a program of 132 semester units leading to the Bachelor of Science degree in Engineering. At the graduate

* University Administrative Officer

level the division offers the Master of Science degree in Engineering based on an approved sequence of 30 semester units of coursework. In the graduate program, specific options in major fields are offered.

BACHELOR OF SCIENCE IN ENGINEERING

The undergraduate program is accredited by the Engineers' Council for Professional Development. The objective of the undergraduate engineering program is to form a broad base of science, mathematics, social science, humanities and engineering science—coupled with a specialization in an area of concentration. Students are thus prepared to enter directly into engineering practice or to continue further education at the graduate level.

The heart of the engineering program is a core which includes courses in mathematics, physics, chemistry, basic engineering sciences, social sciences and the humanities and provides a firm basis for more specialized knowledge at an advanced level. During the first 2½ years of study all students in engineering take the same program emphasizing the interrelationship of the primary engineering subjects which form the broad background required of modern-day engineers. During the junior and senior years, a student chooses a minimum of 27 units of technical electives to complete his program with enough specialization in an area of emphasis to initiate a successful engineering career.

The program of 132 semester units presumes that the entering student brings a high school preparation which includes geometry, trigonometry and two years of algebra and one year of physics or chemistry. Students deficient in mathematics physics or chemistry must take special preparatory courses, i.e., Mathematics 100, Precalculus Mathematics, or equivalent, and Chem 100, which will not carry credit for graduation.

Transfer Students

A transfer student shall complete a minimum of 24 units in residence of which at least 15 shall be taken in upper-division engineering courses. Work taken at another college or university on which a grade of D was earned may not be substituted for upper-division courses.

A smooth transition from a community college into upper-division engineering is assured when the following program, as a minimum, has been completed. Students deficient in any of these areas may look to the summer session bulletin for offerings that may make up any deficiencies:

	Minimum Number of Semester Units
Analytic geometry and calculus	15
Chemistry (for engineering and science majors)	8
Physics (for engineering and science majors)	12
Engineering graphics	3
Properties of engineering materials	2
Computer programming (FORTRAN)	3
Analytical mechanics (statics)	3

Engineering Liaison Committee Statement

The Division of Engineering subscribes to the following statement approved by the Engineering Liaison Committee of the State of California:

> "Based on the 1970-71 requirements, any student of a California community college, with a stated major in engineering, who presents a transcript showing satisfactory completion of the following proposed core program in lower division, will be able to enroll in this institution with regular junior standing; and further, assuming normal progress, said student can complete an engineering program in four additional semesters with a regular bachelor's degree, presuming, upon transfer, that he has completed at least 50 percent of the graduation unit requirements in that program. Completion of a specific program of his choice will be dependent upon his proper selection of elective courses.

Subject Area	*Semester Units*	*Quarter Units*
Mathematics (beginning with analytical geometry and calculus and completing a course in ordinary differential equations)	16	24
Chemistry (for engineers and scientists)	8	12

Physics (for engineers and scientists)	12	18
Statics	3	4
Graphics and descriptive geometry	3	4
Computers (digital)	2	3
Orientation and motivation	1	1
Properties of materials	3	4
Electric circuits	3	4
Electives	11-15	17-23"

Technical Electives

The student chooses an emphasis during the junior year or earlier in civil engineering and engineering mechanics, electrical engineering, or mechanical engineering. Within the overall concept of a broad general background with enough specialization to become a productive engineer upon graduation, a student may further specialize in such areas as electronics, communications, control systems, digital systems, power and energy, design and materials, thermal and fluids engineering, structural systems and design, applied mechanics, environmental studies, water resources and soils engineering.

After choosing an emphasis the student shall submit a proposed study plan consisting of at least 27 units of upper division technical courses to his faculty adviser for approval. Approval must be granted before the end of the student's fifth semester.

While his study plan need not be contained within one area of emphasis, it shall include a sufficient number of courses to provide continuity and depth of understanding within a given area of specialization. It shall also include two senior laboratory courses and one design course and the prerequisite courses thereto. This study plan must be approved by the student's adviser before taking any technical electives. Every engineering student will be expected to have completed Egr 205 before beginning his technical elective program.

Students who want to be considered for an engineering science program, should file a special application to the chair of the Division of Engineering by the end of the fourth semester. The program in engineering science is to be selected by the student and his adviser and submitted for approval to a committee of the Division of Engineering (supplemented, if appropriate, by members of the science and mathematics faculty). Such a program must include the two senior engineering laboratories and senior engineering design course and their prerequisites. Courses are to be selected from upper division engineering, science and mathematics offerings to meet a special and specific engineering science objective of the student such as engineering physics.

JOINT PROGRAM FOR B.S. IN COMPUTER SCIENCE

The Division of Engineering jointly offers the B.S. in Computer Science with the Departments of Mathematics and Quantitative Methods. The program consists of courses in engineering, mathematics and quantitative methods which are related to computer systems, information structures and computer applications. See B.S. in Computer Science under "Cross-disciplinary University Programs" for degree requirements.

MINIMUM REQUIREMENTS FOR UNDERGRADUATE DEGREE

Lower Division Science and Mathematics (All required for B.S.)

	Units
*Math 150A,B Analytic Geometry and Calculus	8
Math 250 Intermediate Calculus	4
Math 281 Linear Algebra with Differential Equations	3
Chem 101A General Chemistry	5
Chem 105 General Chemistry for Engineers	3
Physics 225A,B,C Fundamental Physics	9
Physics 226A,B,C Fundamental Physics Laboratory	3
	35
Non-Engineering General Education	28

The engineering student will take at least 24 units from Areas II and III of the general education requirements for the bachelor's degree, six units of which may

* Students with inadequate preparation for Math 150A will take Math 100, Precalculus Mathematics.

meet the U.S. history and government requirements. He will follow, as a minimum, the universitywide requirements, adding courses at his discretion to make 24 units. An additional four units, for a total of 28 must be specifically approved by his adviser and will be recommended to assure the best balance for the student's education. A student shall be limited to a maximum of six units of activity courses.

Lower Division Engineering (All required for B.S.)

Egr 102 Graphical Communications	3
Egr 201 Mechanics	3
Egr 202 Material Science	3
Egr 205 Digital Computation	3
	12

Upper Division Engineering (All required for B.S.)

Egr 300 Electric Circuits	3
Egr 300L Electric Circuits Laboratory	1
Egr 301 Strength of Materials	3
Egr 302 Dynamics	3
Egr 303 Electronics	3
Egr 303L Electronics Laboratory	2
Egr 304 Thermodynamics	3
Egr 305 Transport Processes	3
Egr 306A Unified Laboratory	1
Egr 306B Unified Laboratory	2
Egr 308 Engineering Analysis	3
Egr 370 Seminar in Engineering	1
Egr 417 Engineering Economy	2
	30
Technical Electives	27
Total	132

DETAILED OUTLINE OF TYPICAL EIGHT-SEMESTER PROGRAM FOR B.S. IN ENGINEERING (132 Units)**

Semester 1 Freshman	*Units*
General educational elective	4
Math 150A Calculus	4
Chem 101A General Chemistry	5
Egr 102 Graphical Communications	3
	16
Semester 2 Freshman	
Math 150B Calculus	4
Physics 225A Fundamental Physics (Mechanics)	3
Physics 226A Fundamental Physics Laboratory	1
Chem 105 General Chemistry for Engineers	3
Egr 205 Digital Computation	3
General education elective	3
	17
Semester 3 Sophomore	
General education electives	6
Math 250 Intermediate Calculus	4
Physics 225B Fundamental Physics (Electricity and Magnetism)	3
Physics 226B Fundamental Physics Laboratory	1
Egr 201 Mechanics	3
	17

** NOTE: This program is merely a guide. The student may lighten his academic load each semester to meet his needs.

Semester 4 Sophomore

General education electives	6
Math 281 Linear Algebra with Differential Equations	3
Egr 202 Material Science	3
Physics 225C Fundamental Physics (Modern Physics)	3
Physics 226C Fundamental Physics Laboratory	1
	16

Semester 5 Junior

Egr 300 Electric Circuits	3
Egr 300L Electric Circuits Laboratory	1
Egr 304 Thermodynamics	3
Egr 305 Transport Processes	3
Egr 306A Unified Laboratory	1
Egr 302 Dynamics	3
Egr 308 Engineering Analysis	3
	17

Semester 6 Junior

Egr 301 Strength of Materials	3
Egr 303 Electronics	3
Egr 303L Electronics Laboratory	2
Egr 306B Unified Laboratory	2
Engineering technical electives	6
	16

Semester 7 Senior

General education electives	3
Egr 417 Engineering Economy	2
Engineering technical electives	12
	17

Semester 8 Senior

General education electives	6
Engineering technical electives	9
Egr 370 Seminar in engineering	1
	16
Total	132

MASTER OF SCIENCE IN ENGINEERING

Applicants, as well as continuing students, should read carefully the university requirements for master's degree programs.

Admission Procedure

The procedural steps for admission to the master of science program in engineering are as follows:

1. Apply for admission to the university in graduate standing.
2. Declare the objective to be a Master of Science in Engineering at the time of admission.
3. If Step 2 is not accomplished at the time of admission, then the student must file a graduate application for a Change of Academic Objective form before being admitted to the Division of Engineering.
4. Proof of a degree from a college or university must be supplied. This must be sent from the institution from which the student graduated to the Cal State Fullerton Office of Admissions when the request is received from Cal State Fullerton.

Prerequisites:

An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted.

A student who meets the requirements for conditionally classified graduate standing, as well as the following requirements, may be admitted as a classified graduate upon the development of an approved study plan.

A 2.5 undergraduate grade-point average and satisfactory coursework in the engineering field. However, students may be considered with grade deficiencies. Any deficiencies must be made up, and will require six or more units of adviser-approved courses with at least a 3.0 average in addition to those required for the degree. In addition, a committee of the engineering faculty will evaluate each student's record for specific course deficiencies in the engineering field. Making suitable allowance for actual engineering experience, the committee will require each student, prior to classified standing in the program, to make up such deficiencies as the committee determines. A student who does not have a B.S. in Engineering from an Engineers' Council for Professional Development accredited program or who has a B.S. degree outside of engineering may have to make up these deficiencies.

NOTE: A student may be required to take the engineering mathematics review course, 701. This course is open to all who may feel the need for such a refresher course. It is to be taken in addition to those required for the degree.

Achievement of classified graduate standing includes the following:

1. Completion of all required work which may have been specified to make up deficiencies.
2. Before completing nine units at Cal State Fullerton toward a M.S. degree, a student shall fill out an application for classified standing card in the Office of the Dean of Graduate Studies and make an appointment with the adviser at the office of the Division of Engineering.
3. Preparation, in consultation with the adviser, of a graduate study plan which must be approved.

Advancement to Candidacy

Achievement of this status requires the following:

1. Having been granted classified standing in the Master of Science in Engineering program.
2. Having completed 12 units of coursework on his master's degree study plan with a GPA of not less than 3.0, including six units of 500-level courses.
3. Filing an advancement to candidacy card in the Office of the Dean of Graduate Studies.

Graduation

Final achievement of the Master of Science in Engineering requires:

1. Having been admitted to candidacy.
2. Filing a request for check on completion of requirements during registration and prior to the appropriate deadline.
3. Having completed 30 units of approved work with an overall GPA of not less than 3.0.
4. Completing satisfactorily a final comprehensive examination.
5. Receiving approval of the faculty of the Division of Engineering and the dean of graduate studies.

The Program for the Master of Science in Engineering

Qualification for the Master of Science in Engineering requires the following:

1. Completion of a minimum of 30 units of adviser-approved upper division or graduate-level work including:
   (a) Egr 403 and a minimum of three units of approved mathematics-oriented upper division or graduate courses (certain engineering courses fulfill this requirement),
   (b) a minimum of 15 units of approved 500-level courses,
   (c) a minimum of 15 units in a specific area of concentration.
2. An overall GPA of 3.0.
3. Satisfactory completion of a final oral comprehensive examination.

A candidate for the Master of Science in Engineering may pursue one of five options currently offered by the Division of Engineering:

Civil engineering and engineering mechanics

Electrical engineering

Mechanical engineering

Systems engineering

Engineering science

A student is required to select a minimum of 15 units within these options. These 15 units may be 400-level and 500-level courses. The 500-level courses are listed below:

Civil Engineering and Engineering Mechanics

Egr 508 Advanced Inviscid Fluid Flow (3)
Egr 509 Theory of Plates and Shells (3)
Egr 510 The Finite Element Method (3)
Egr 529 Open Channel Hydraulics (3)
Egr 530 Advanced Strength of Materials (3)
Egr 532 Earthquake Engineering (3)
Egr 533 Matrix Analysis of Structures (3)
Egr 534 Surface Water Hydrology (3)
Egr 535 Water Resources Systems Engineering (3)
Egr 537 Groundwater and Seepage (3)
Egr 538 Dispersion of Pollutants in Fluids (3)
Egr 539 Advanced Coastal Engineering (2)
Egr 543 Structural Design of Highway and Airport Pavements (3)
Egr 544A Advanced Foundation Engineering (3)
Egr 544B Advanced Foundation Engineering (3)
Egr 546 Advanced Soil Mechanics and Foundation Engineering (3)
Egr 547 Advanced Dynamics of Structures (3)
Egr 548 Soil Dynamics (3)
Egr 549 Theory of Elastic Stability (3)
Egr 592 Advanced Engineering Analysis (3)

Electrical Engineering

Egr 501A,B Microwaves (3,3)
Egr 503 Information Theory and Coding (3)
Egr 504 Linear Network Synthesis (3)
Egr 505 Nonlinear Control Systems (3)
Egr 506 Advanced Digital Computer Systems (3)
Egr 507 Statistical Communication Theory (3)
Egr 513 Optimal Control Systems (3)
Egr 515 Quantum Electronics (3)
Egr 521 Antenna Theory (3)
Egr 523A Solid State Devices and Integrated Circuits (3)
Egr 523B Solid State Devices and Integrated Circuits (3)
Egr 527 Fault Diagnosis and Finite Automata (3)
Egr 531 Phase-Locked and Frequency Feedback Systems (3)
Egr 540 Computer Applications in Engineering Design (3)
Egr 550A,B Plasma Dynamics (3,3)
Egr 551 Network Theory and Development of Analysis and Design Programs (3)
Egr 554 Hybrid Computation (3)
Egr 555 Electromagnetic Field Theory (3)
Egr 557 Sampled-Data Systems (3)
Egr 559 Analysis and Synthesis of Active Networks (3)
Egr 570 Seminar in Electrical Engineering (1-3)
Egr 571 Seminar in Computer Engineering (3)
Egr 581 Theory of Linear Systems (3)
Egr 582 Linear Estimation Theory (3)

Egr 592 Advanced Engineering Analysis (3)

Mechanical Engineering

Egr 500 Nuclear Reactor Design (3)
Egr 508 Advanced Inviscid Fluid Flow (3)
Egr 511 Advanced Mechanical Vibrations (3)
Egr 512 Advanced Mechanical Design (3)
Egr 516 Advanced Radiation Heat Transfer (3)
Egr 520 Advanced Viscous Fluid Flow (3)
Egr 522 Design of Fluid Film Bearings (3)
Egr 524 Advanced Thermodynamics (3)
Egr 526 Advanced Convective Heat Transfer (3)
Egr 530 Advanced Strength of Materials (3)
Egr 536 Advanced Conduction Heat Transfer (3)
Egr 560 Fluid-Solid Interactions (3)
Egr 592 Advanced Engineering Analysis (3)

Systems Engineering

Students selecting the systems engineering option will be required to include the following four courses in their study plans:

Egr 581 Theory of Linear Systems (3)
Egr 582 Linear Estimation Theory (3)
Egr 585 Optimization Techniques in Systems Engineering (3)
Egr 587 Operational Analysis Techniques in Systems Engineering (3)

The remainder of the systems engineering study plan will include other engineering courses with an emphasis in a particular field such as information control theory, computer systems, civil or mechanical engineering applications. Students possessing a Bachelor of Science in Engineering may elect to include up to nine units from approved subjects offered by the School of Business Administration and Economics as a part of their study plan.

Engineering Science

The program in engineering science is to be selected by the student and his adviser and submitted for approval to a committee of the Division of Engineering (supplemented, if appropriate, by members of the science and mathematics faculty). The courses selected are to meet a special and specific engineering science objective of the student, such as engineering physics.

In addition to those courses offered in the specific options, the following three courses apply to any option, though they are not necessarily required:

Egr 597 Project (1-6)
Egr 598 Thesis (1-6)
Egr 599 Independent Graduate Research (1-3)

For further information, consult the Division of Engineering
See also "The Program of Master's Degrees" and the *Graduate Bulletin.*

JOINT PROGRAM FOR M.S. IN COMPUTER SCIENCE

The Division of Engineering jointly offers the M.S. in Computer Science with the Departments of Mathematics and Quantitative Methods. The program consists of concentrations in information processes and structures, information processing systems, applications in mathematical methods, and applications in administrative informations systems. See M.S. in Computer Science under "Cross-disciplinary University Programs" for degree requirements.

ENGINEERING COURSES

102 Graphical Communications (3)

Graphics as a fundamental means of communication in design. Development of spatial visualization. Freehand sketching, shading, orthographic projection, oblique-isometric and perspective pictorials. Dimensioning, descriptive geometry, design procedure and design projects. (1 hour lecture, 6 hours laboratory)

103 The Computer Revolution (3)
Introduction to digital computers, how they work and how they are programmed. The impact of computers on business, education, the fine arts and science. The computer's influence on daily life. Artificial intelligence, future trends. Cannot be applied toward a B.S. in Engineering.

201 Mechanics (3)
Prerequisites: Math 150B and Physics 225A. An introductory development of the fundamentals of statics with engineering applications.

202 Material Science (3)
Prerequisites: Chem 101 and Physics 225A. Scientific and engineering principles important in selection of materials in design. Concepts of stress, strain, electrical and magnetic properties. Introduction to crystalline structure and imperfections, environmental effects and other selected topics from material science. Metallic, organic and ceramic substances are considered.

205 Digital Computation (3)
Prerequisites: college algebra or three years of high school mathematics including a second course in algebra. Introduction to computers and their applications. Elementary FORTRAN programming language, digital computation methods in statistics and solving algebraic equations.

207 Pollution and Politics (3)
The scientific/technological, political/legal and philosophical aspects of pollution problems and their possible solutions. A systematic and unified examination of environmental control, with a review of extant technological solutions and the political, economic and human factors that prevent or retard their application. Cannot be applied toward a B.S. in Engineering.

208 Current Technological Problems in Southern California (3)
A study of existing and developing technologies that can help to solve—or worsen—problems of public concern in Southern California. For non-engineering majors with no particular science background. Covers fundamentals of mass transportation, electric power generation, waste disposal, and water supply. Cannot be applied toward a B.S. in Engineering.

220 New Energy Sources (3)
A study of energy supply and demand; power generating plants and the environment; new faces and old fuels; nuclear power; breeder and fusion reactors; geothermal energy; solar energy; a national energy policy. Not applicable to a B.S. in Engineering.

300 Electric Circuits (3)
Prerequisites: Physics 225B and Math 250; corequisite: Egr 300L. Ohm's and Kirchhoff's laws; mesh and nodal analysis; basic network theorems; RL and RC transients; phasors and steady-state sinusoidal analysis; current, voltage and power relationships; polyphase circuits; magnetic coupling; elementary transformers and electrical machines.

300L Electric Circuits Laboratory (1)
Corequisite: Egr 300. Experimental investigation of simple resistive RL and RC circuits; electrical measurement techniques; study of transformers; performance tests on electrical machines. (3 hours laboratory)

301 Strength of Materials (3)
Prerequisites: Math 250 and Egr 201. States of stress and strain. Analysis and design of structural elements (pressure vessels, beams, torsion bars, springs), fracture criteria, statically indeterminate problems, energy methods, buckling of columns.

302 Dynamics (3)
Prerequisites: Math 250 and Egr 201. Kinematics and kinetics of particles and rigid bodies, Newton's laws, work and energy, impulse and momentum. Solution of problems by using vector approach is emphasized.

303 Electronics (3)
Prerequisites: Physics 225C, Egr 300 and 300L; corequisite: Egr 303L. Characteristics and applications of semiconductor diodes; the p-n junction, field-effect transistors, bipolar-junction transistors, applications to wave shaping and digital circuits and amplifiers; introduction to two-port linear models.

303L Electronic Laboratory (2)
Corequisite: Egr 303. Experimental study of semiconductor diodes, transistors, and elementary electronic circuits. (1 hour lecture, 3 hours laboratory)

304 Thermodynamics (3)
Prerequisites: Chem 105, Math 150B and Physics 225A; corequisite: Egr 205 or consent of instructor. The study of energy and its transformation which encompasses heat and work and the conservation of mass and energy, the system properties irreversibility and availability. The ideas are conveyed through the detailed study of ideal gases, heat engines and refrigeration (both ideal and actual).

305 Transport Processes (3)
Prerequisites: Math 250 and Egr 201. Principles of similitude and dimensional analysis. Fluid statics. One dimensional steady state heat conduction. Elements of Radiative heat transfer. One dimensional steady flow analysis. Free and forced convective heat transfer in incompressible laminar and turbulent flow.

306A Unified Laboratory (1)
Corequisites: Egr 202 and 305. Observations and measurements in the laboratory as an introduction to the experimental method. Static and dynamic measurements are made on simple engineering systems (beams, columns, pendulum, gyroscopes) using mechanical and electrical transducers. Report writing is emphasized. (3 hours laboratory)

306B Unified Laboratory (2)
Prerequisite: Egr 306A. Continuation of Egr 306A. Flow measurement techniques using orifice plates, venturimeters. Pitot probes and nozzles. Temperature and pressure measurement. Experimental studies of fluid friction and heat exchanger performance. Role of the digital calculator and computer in data reduction and analysis. Continued emphasis on technical report writing. (1 hour lecture, 3 hours laboratory)

308 Engineering Analysis (3)
Prerequites: Physics 225B, Math 281 or consent of instructor. Fundamentals and engineering applications of Fourier series, Fourier transforms, Laplace transforms, complex analysis, vector analysis; engineering applications.

309 Networks and Transmission Lines (3)
Prerequisites: Egr 205, 300, 300L and 308. Performance of RLC circuits; complex frequency and the s-plane; frequency response and resonance; network topology; two-port network characterization; transmission line theory; classical filter theory.

310 Electronic Circuits (3)
Prerequisites: Egr 205, 303 and 309. Continuation of 303, multistage amplifiers and feedback; frequency characteristics of amplifiers, tuned amplifiers, frequency characteristics and stability of feedback amplifiers, oscillators and power amplifiers.

311 Field Theory (3)
Prerequisites: Physics 225B and Math 281. Review of fundamental concepts underlying the formulation of static and quasi-static electric and magnetic fields. Effect of magnetic, dielectric, and conducting materials. Capacitance, inductance and resistance. Boundary value problems. Maxwell's equations and development of the wave equation.

312 Linear System Analysis (3)
Prerequisites: Egr 300, 302 and 308. Development of time- and frequency-domain mathematical models for lumped and distributed physical systems; the linearization process and representation with block diagrams and signal flow graphs; introduction to feedback systems and stability theory (the Nyquist criterion) using frequency response data.

313 Introduction to Electromechanics (3)
Prerequisites: Egr 309 and 311. Electromagnetic fields and circuits; transformers, saturation effects. Simple electro-mechanical systems. Circuit models, terminal characteristics and applications of DC and AC machines.

316 Intermediate Thermodynamics (3)
Prerequisites: Egr 205 and 304. Continuation of Egr 304, additional coverage of power and refrigeration cycles. Maxwell's relations, mixtures of real and ideal fluids, chemical reactions (emphasis on combustion), phase and chemical equilibrium. (Offered every third semester)

317 Introduction to Computer Science (3)
Prerequisites: Egr 205 or QM 265 or equivalent. Overview of computer systems, computer applications, assembly language programming, internal information structures, data representations, code conversion, computer organization, binary arithmetic, non-numerical computer programs.

320 Metallurgy (3)
Prerequisite: Egr 202. Structure and properties of metals and alloys, influences of mechanical and thermal treatments, plastic deformation, work hardening and recrystallization, grain growth, alloy diagrams, solution hardening, diffusion hardening, precipitation hardening, the iron-carbon system, composite materials, brittle, creep and fatigue failures. (Offered every third semester).

320L Engineering Metallurgy Laboratory (1)
Corequisite: Egr 320. Study of microstructure of materials, cold work and heat treatment, use of microscope and sample preparation, fatigue testing and failure analysis. (3 hours laboratory)

324 Soil Mechanics (3)
Prerequisite: Egr 301. Soil properties and soil action as related to problems encountered in engineering structures; consolidation, shear strength, stability and lateral earth pressures.

326 Structural Design (3)
Prerequisite: Egr 301. Elements of the design of steel and timber members. Connection details. Design of complete structures for both vertical and lateral loads.

331 Mechanical Behavior of Materials (3)
Prerequisite: Egr 202. Plastic deformation and hardening mechanisms, creep phenomena. Fatigue. Behavior at cryogenic temperatures. Fabrication processes and their effects on properties. Testing of materials. (Offered every other year)

332 Manufacturing Processes (3)
Study of industrial manufacturing processes. Principles of conventional and nonconventional material removal, forming and joining processes and equipment. Nondestructive and other testing methods. Cannot be applied toward a B.S. in Engineering.

333 Fluid Mechanics and Aerodynamics (3)
Prerequisites: Egr 205 and 305. Flow of incompressible fluids through pipes. Methods of flow measurement. Two dimensional steady flow analysis. Element of compressible and open channel flows. Effects of Mach number and Reynold number on aerodynamic forces. (Offered every third semester)

334 Design Graphics (3)
Prerequisite: Egr 102. Materials technology and designing for strength; shop processes; tolerancing; fasteners; patents; descriptive geometry; conic sections; intersections of surfaces; mapping; area measurements; design projects. Cannot be applied toward a B.S. in Engineering.

335 Mechanical Analysis (3)
Prerequisites: Egr 205, and 302; corequisite: Egr 335L. Kinematics and dynamics of mechanisms, design and analysis of linkage gears, cams, etc., using analytical and graphical techniques, balancing.

335L Mechanical Analysis Laboratory (1)
Prerequisite: Egr 102; corequisite: Egr 335. Analytical and graphical techniques will be used in solving engineering type problems in mechanical design. (3 hours laboratory)

336 Instrumentation for Life Sciences (3)
Prerequisite: junior standing. An introduction to the principles of sensing, measuring and recording biological variables and movement. Emphasis on teaching the student to apply general knowledge of instrumentation to problems in his field of interest. Cannot be taken for credit toward a B.S. in Engineering.

370 Seminar in Engineering (1)
Prerequisite: senior standing in engineering. The engineering profession, professional ethics, and related topics.

375 Electrical Engineering Laboratory (2)
Prerequisite: Egr 309; corequisites: Egr 310 and 313. Experimental studies of discrete and integrated electronic circuits and electrical machines; bridge measurements of circuit parameters; slotted-line measurements; simulation studies using analog computers. (6 hours laboratory)

376A Mechanical Engineering Laboratory (2)
Prerequisites: Egr 302, 306B and 308. Experimental studies of dynamic systems, vibration, acoustics and other mechanical subjects; analog computer simulation of dynamic systems; and automatic data acquisition. (6 hours laboratory)

376B Mechanical Engineering Laboratory (2)
Prerequisite: Egr 306B. A laboratory investigation of mass transfer, heat transfer, and thermodynamic phenomena and their interaction with mechanical systems. (6 hours laboratory)

377A Civil Engineering Laboratory (2)
Corequisite: Egr 324. Laboratory experiments to study the behavior and properties of soil, cement, concrete and bituminous materials. (6 hours laboratory)

377B Civil Engineering Laboratory (2)
Prerequisite: Egr 301. Experimental studies in structural mechanics, stress and deformation studies of concrete and steel structures. Dynamic response of structures. (6 hours laboratory)

380 Human Factors in Design (3)
Prerequisites: Physics 211A,B or 225B. Design of products and systems based on human engineering principles, study of human capabilities and limitation of senses, study of characteristics of human anatomy. Responses to sensory stimuli. (Offered every other year)

385 Electrical Engineering Design Projects Laboratory (3)
Prerequisite: Egr 375, within 20 units of graduation. The application of fundamental engineering principles to typical design problems in the field of electrical engineering. (1 hour lecture, 6 hours laboratory)

402 Digital Logic Design (3)
Prerequisite: Egr 317 or QM 364. Introduction to digital computers, Boolean algebra, number representations. Analysis, simplification and synthesis of combinational and sequential networks.

402L Digital Logic Laboratory (2)
Corequisite: Egr 402. Experimental study of digital logic circuits; decoders and encoders, counters, serial and parallel adders, control circuits. (1 hour lecture, 3 hours laboratory)

403 Computer Methods in Numerical Analysis (3)
Prerequisites: Math 281 and Egr 205 or equivalent. The use of numerical methods and digital computers in the solution of algebraic, transcendental, simultaneous, ordinary and partial differential equations.

405 Digital Computer Design and Organization (3)
Prerequisite: Egr 402. Digital Computer organization; arithmetic operations: addition, subtraction, multiplication, division; control unit: instruction format, types, acquisition, execution; memory unit: organization, types, hierarchies; input-output unit: methods, data, organization.

405L Digital Computer Design Laboratory (2)
Prerequisites: Egr 402, 402L and 303L; corequisite: Egr 405. Design and implementation of a small digital computer; adders, arithmetic unit, control unit, memory control unit, memory unit and program unit. (1 hour lecture, 3 hours laboratory)

406 Dynamics and Control of Mechanical Systems (3)
Prerequisites: Egr 205, 302 and 308. Vibration analysis and vibration control, fundamentals of control-system analysis. (Offered every third semester)

406L Dynamics and Control of Mechanical Systems Laboratory (1)
Prequisite: Egr 376A; corequisites: Egr 376B and 406. Response of mechanical and thermal systems, feedback control systems, analog simulation and computation. (3 hours laboratory)

407 Heat Transfer (3)
Prerequisites: Egr 205, 305 and 308. Analysis of two- and three-dimensional steady and unsteady heat conduction, heat exchangers, forced and free convection for interior and exterior surfaces with laminar and turbulent flow, heat transfer with a change in phase. (Offered every third semester)

408 Reinforced Concrete Design (3)
Corequisite: Egr 326 or equivalent. Theory of reinforced concrete. Design of reinforced concrete slabs, beams, columns, buildings and bridges. Introduction to prestressed concrete.

411 Dynamics of Structures (3)
Prerequisites: Egr 301 and 308 or equivalent. Free and forced vibrations of discrete systems, response of structures to impulse loads and earthquakes. Matrix formulation and normal coordinates analysis. Vibration of beams.

412 Theory of Elasticity (3)
Prerequisites: Egr 301 and 308. The differential equations which govern the behavior of an elastic solid, and their applications to a variety of problems in two and three dimensions using various coordinate systems.

415 Gas Dynamics (3)
Prerequisites: Egr 304 and 305. Thermodynamics of compressible fluid flow, normal and oblique shocks, flow through converging-diverging passages, flow in ducts with heating or cooling, interaction of shocks and expansion waves. Linearized 2-D flows, supersonic wind tunnel testing. (Offered every third semester)

416 Feedback Control Systems (3)
Prerequisite: Egr 312. Feedback system characteristics; state-space and frequency domain analysis, design using root-locus and Nyquist plots; introduction to stability theory; application of basic compensation methods.

416L Control Systems Laboratory (2)
Corequisite: Egr 416. Experimental study of simulated and actual control system components; determination of transfer characteristics; compensation methods. (1 hour lecture, 3 hours laboratory)

417 Engineering Economy (2)
Prerequisite: senior standing in engineering. Development, evaluation and presentation of alternatives for engineering systems and projects using principles of engineering economy and cost benefit analysis.

418 Foundation Design (3)
Prerequisite: Egr 324; corequisite: Egr 408. Subsurface exploration. Design of footings, retaining walls, mat and piled foundations for structures.

419 Electromagnetic Field Theory (3)
Prerequisite: Egr 205 and 311. Continuation of Egr 311 to provide a greater depth and extension of coverage, energy in fields, Maxwell's equations, boundary value problems, propagation, guided waves.

421 Mechanical Design (3)
Prerequisites: Egr 301 and 335; corequisite: Egr 421L. The application of the principles learned in mechanics of rigid and deformable bodies to the proportioning of machine elements to engineering problems.

421L Mechanical Design Laboratory (1)
Corequisite: Egr 421. Analysis, formulation and solution of engineering type problems encountered in mechanical design. (3 hours laboratory)

423 Engineering Probability and Statistics (3)
Prerequisite: Math 250. Engineering problems involving discrete and continuous random variables, probability distribution and density functions, introduction to stochastic processes, correlation functions and power spectral densities.

424 Computer Simulation of Continuous Systems (3)
Prerequisites: Egr 205 and 312. Analog computer methods, digital differential analyzers, digital simulation languages, simulation of engineering systems.

425A,B Environmental Engineering (3,3)
Prerequisite: senior standing in engineering or equivalent. Fundamentals of environmental engineering. Planning, analysis and design of systems for water and air pollution control; domestic and industrial waste treatment and disposal.

426 Ocean and Coastal Engineering (3)
Prerequisite: senior standing in engineering or equivalent. Fundamentals of ocean waves. Effect of waves on structures, floating platforms, offshore platforms, engineering problems of beach erosion, harbor design and other coastal problems. Application of fluid mechanics to develop first-order ocean engineering.

427 Structural Analysis (3)
Prerequisite: Egr 301. The analysis of determinate and indeterminate structures, such as continuous beams, frames, grids, arches, trusses, curved beams, using slope and deflection method, moment distribution method, elastic energy approach. Temperature effect, foundation settlement, secondary stresses. Nonprismatic members.

428 Engineering Hydraulics (3)
Prerequisite: Egr 305. Hydraulic forces, theory and analysis of open channel flow and pipe flow. Critical flow, uniform and non-uniform flow. Design of channels, spillways, gravity pipelines. Hydraulic analogies.

428L Engineering Hydraulics Laboratory (1)
Corequisite: Egr 428. Laboratory experiments which illustrate the principles of engineering hydraulics. (3 hours laboratory)

429 Transportation and Traffic Engineering (3)
Prerequisite: senior standing in engineering or equivalent. Introduction to transportation systems. Engineering aspects of air, highways, rails, waterways and other modes of transportation. Planning, design and regulation of highway traffic. Elements of highway and freeway layout. Planning and design of rapid transit systems. Transportation facilities. Application of computers.

430 Design of Steel Structures (3)
Prerequisite: Egr 301; corequisite: Egr 326 or equivalent. Design of steel structures: design of built-up girders, moment connections, light gage metal members. Torsion and unsymmetrical bending of beams, buckling of beams and columns. Design for wind and earthquake forces. The use of the latest AISC design code.

434 Engergy Conversion and Power (3)
Prerequisites: Egr 300, 304 and 305. The direct conversion of heat to electrical energy, thermoelectric, thermionic and magnetohydrodynamic devices, solar and fuel cells and exotic techniques. (Offered every third semester)

435 Design of Water Systems (3)
Prerequisite: Egr 428 or equivalent. Hydraulic and hydrologic design of water supply, storm drain and sanitary sewer systems.

436 Engineering Hydrology (3)
Prerequisite: junior standing in engineering or consent of instructor. A study of the hydrologic cycle with applications to the hydrologic design of engineering structures. Topics include rainfall, runoff, urban hydrology, statistical hydrology.

437 Ground and Flight Vehicle Propulsion Systems (3)
Prerequisite: Egr 305 and 316. The thermodynamics, fluid mechanics and dynamics of vehicle propulsion systems; air breathing engines, chemical rockets, linear induction motors. (Offered every other year)

438 Introduction to Nonlinear Analysis (3)
Prerequisite: Egr 312; corequisite: Egr 375 or consent of instructor. Quasilinear analysis methods; phase-plane representations; systems with relay functions; introduction to nonlinear stability theory; numerical methods.

442 Electronic Circuits (3)
Prerequisites: Egr 309 and 310. Continuation of Egr 310. Tuned amplifiers; RF amplifiers; modulation and detection circuits; oscillators; and operational amplifier applications.

443 Electronic Communication Systems (3)
Prerequisite: Egr 310. Principles of amplitude, angular and pulse modulation, study of representative communication systems, consideration of the effects of noise on system performance.

445 Pulse and Digital Circuits (3)
Prerequisites: Egr 303 and 308. Analysis and design of active and passive circuits for the generation and processing of pulse, digital and switching waveforms.

445L Pulse and Digital Circuits Laboratory (2)
Prerequisite: Egr 445 (may be taken concurrently). Laboratory study of logic circuits, switching circuits, gates, timing circuits and special waveform generating circuits. (1 hour lecture, 3 hours laboratory)

447 Piping Selection and Piping Network Design (3)
Prerequisites: knowledge of fluid mechanics and strength of materials; consent of instructor. Pressure losses in piping networks; selection of piping based upon fluid, temperature, pressure and economic considerations; piping connections, fittings and components; stress analysis; review of national piping codes.

448 Digital Systems Design (3)
Prerequisites: Egr 402, 402L, 303 and 303L. Practical aspect of digital system design, MSI and LSI chips; ROM, PROM and RAM memories; noise, loading and termination problems;

logic design documentation, design of computer interface, servo controller or data logger system.

449 Internal Combustion Engines (3)

Prerequisites: Egr 304, 305. Thermodynamics of cycles for internal combustion engines, including fuels and combustion. Performance characteristics of various types of IC engines. Including the following engines: Clerk (two-stroke), Otto, Wankel, diesel and gas turbine. Exhaust analysis and pollution control.

450 Power Plant Engineering (3)

Prerequisites: Egr 205, 304, 305. Engineering principles and design methods applicable to modern electrical power generation facilities. Coverage of economics, heat transfer, steam generation, fuels and combustion, and equipment. Steam, gas, turbine, diesel, nuclear and hydroelectric plants are considered. (Offered every third semester)

451 Thermal Environmental Conditioning and Control (3)

Prerequisites: Egr 304 and 305. A rigorous and thorough approach to the fundamentals of controlling the thermal environment within enclosed spaces. Theory and analysis of fundamental thermodynamics are emphasized providing a broad coverage of topics relating to thermal environmental engineering. Laboratory demonstrations of actual systems. (Offered every third semester)

452 Fluid Machinery (3)

Prerequisites: Egr 304, 305. Engineering principles of pumps, compressors, hydraulic motors turbines and other fluid machinery, including theory of design and applications. Covers centrifugal, axial rotary and piston pumps and compressors, as well as turbines.

455 Solid State Electronics (3)

Prerequisites: Egr 303 and 311. Quantum mechanical principles, atomic structure, crystal structure, crystal defect and diffusion, lattice vibration and phonons, energy band theory, charge transport phenomena, free electron theory of metal, intrinsic and extrinsic semiconductors, p-n junction theory, transistor theory.

455L Solid State Electronics Laboratory (2)

Corequisite: Egr 455. Experimental study of semiconductor properties: resistivity, diffusion current, Hall effect, and band gap measurement. Study of modern solid state technologies for integrated circuits: diffusion, oxidation, photolithography and thin film processes. (1 hour lecture, 3 hours laboratory)

458 Computer Structure and Programming (3)

Prerequisite: Egr 317. Influence of computer structure on language design; machine language, nonnumeric programming, stacks, searching, sorting, computer structure simulation.

459 Plastics and other Non-Metallics (3)

Prerequisite: Egr 202. Simplified chemistry of plastics. Applications. Manufacturing processes. Methods for preventing deterioration of nonmetallic materials.

460 Failure of Engineering Materials (3)

Prerequisite: Egr 202. Imperfections in solids; fracture inititation and crack propagation; dislocations; yield point phenomenon; fatigue; creep; ultrasonic effects; radiation damage; stress corrosion; hydrogen embrittlement; composite materials. (Offered every third semester)

461 Fabrication Methods (3)

Prerequisite: Egr 202. Introduction to manufacturing processes. Metal joining processes. Casting, forging, powder metallurgy, machining and machining tools, finishing, coating, plating, nonmetallic materials inspection and gaging, tolerances.

468 Engineering Construction (3)

Prerequisite: senior standing in civil engineering. Engineering construction planning, equipment and methods. Construction management. Introduction to critical path method. Construction of buildings, bridges, highways, foundations and dams.

469 Engineering Construction Materials (3)

Prerequisite: Egr 301. Composition of cements, asphalts and plastics; rheological and mechanical properties of concrete, asphalt concrete, stabilized soils, plastics, wood, steel and aluminum. Weathering and durability. Mix design. Quality control in construction.

471 Technical Seminar in Engineering (1)

Prerequisite: senior standing in engineering. Recent developments in engineering. Oral and written reports.

473 Introduction to Nuclear Engineering (3)
Prerequisite: senior or graduate standing in engineering. A review of atomic physics and nuclear fission followed by elementary reactor theory and reactor design considerations. (Offered every third semester)

475 Engineering Acoustics (3)
Prerequisite: Physics 225C. Basic phenomena on the propagation, absorption and generation of acoustic waves, specification and measurement of noise, effects of noise on speech and behavior, legal aspects of industrial and building noise, principles and applications of noise control. (Offered every other year)

489 Microwave Engineering (3)
Prerequisite: Egr 311 or consent of instructor. Propagation of electromagnetic waves. Guided waves. Waveguides. Resonant cavities. Waveguide and cavity coupling techniques. Principles of microwave amplifiers and oscillators. Klystrons, traveling wave tubes, solid-state microwave devices, masers and lasers. Radiation patterns and impedance characteristics of simple antenna elements.

489L Microwave Engineering Laboratory (1)
Corequisite: Egr 489. Experimental study of microwave networks and components. Microwave detectors, determination of load impedance, tuners, phase shifters, couplers, filters, Q measurements, radiation patterns. Investigation of representative active devices. (3 hours laboratory)

490A,B Professional Practice (1,1)
Prerequisites: upper division standing in engineering program and consent of instructor. Professional engineering work in industry or government chosen to give the student an in-depth experience in engineering. A written report is required. May be repeated once for credit. Not for credit in the graduate program.

491 Analytical Methods in Engineering (3)
Prerequisite: Egr 308 or consent of instructor. Differential equations with constant and variable coefficients; orthogonal functions; conformal mapping; potential theory; engineering applications.

495 Technological Approaches to Environmental Problems (3)
Prerequisites: senior or graduate standing. For students without backgrounds in science or engineering. Overview of major environmental problems and technology-oriented solutions. Pollutant measuring methods; air, water pollution control; transportation; power-generation; and related economic and environmental factors, including land-use planning. Cannot be applied toward a B.S. or M.S. in Engineering.

497 Senior Projects (1-3)
Prerequisite: consent of adviser and instructor. Directed independent design project.

499 Independent Study (1-3)
Prerequisite: approval of study plan by adviser. Study of specialized topics in engineering selected in consultation with the instructor and carried out under his supervision. May be repeated for credit.

500 Nuclear Reactor Design (3)
Prerequisite: Egr 473 or consent of instructor. The study of nuclear reactor design and analysis including neutron flux, multivelocity reactors, reflected reactors, control-rod theory, breeder reactors, gas and water cooled reactors and sodium reactors.

501A,B Microwaves (3,3)
Prerequisites: Egr 403 and 419. Review of concepts underlying Maxwell's equations, propagation through passive, active, linear, nonlinear, isotropic, anisotropic, homogeneous and inhomogeneous media with and without wave guiding structures. Orthogonal modes in waveguide and cavity resonators, microwave circuit theory, microwave devices. Generation and transmission of microwave energy.

503 Information Theory and Coding (3)
Prerequisite: Egr 423. Information measures, probabilistic studies of the transmission and encoding of information, Shannon's fundamental theorems, coding for noisy channels.

504 Linear Network Synthesis (3)
Prerequisites: Egr 309 and 403. Foundations of network theory; synthesis procedures for realizing driving-point and transfer-functions; approximation methods in filter design; computer assisted analysis and design.

505 Nonlinear Control Systems (3)
Prerequisite: Egr 581. Analysis of nonlinear control systems, using linearization and perturbation techniques; describing function and phase plane techniques; stability theory.

506 Advanced Digital Computer Systems (3)
Prerequisite: Egr 405. Computer system structure, mini-computers, medium and large-scale computer systems, micro-programming, micro- and mini-computers, time-sharing and multi-processor computer systems.

507 Statistical Communication Theory (3)
Prerequisites: Egr 423 and 443. Transmission of random signals through linear systems, noise considerations, detection theory, optimum receivers.

508 Advanced Inviscid Fluid Flow (3)
Prerequisites: Egr 205, 308 and 333. Study of two- and three-dimensional potential flow theory. Sources, sinks, vortices, rankine bodies, free jets, channel flow, air foils, etc. Complex potential and various transformation techniques are used. (Offered every other year)

509 Theory of Plates and Shells (3)
Prerequisites: Egr 301 and 491 or equivalent. Theory of plates bent by transverse loads; applications to circular, rectangular, other shapes. General theory of thin shells; shells of revolution; shells of translation.

510 The Finite Element Method (3)
Prerequisites: Egr 403 and 533. Finite elements of a continuum. Stress analysis of: plane stress and plane strain problems; axi-symmetric bodies; and plates and shells. Conforming and nonconforming shape functions. Problems of vibration and stability. Applications using the digital computer.

511 Advanced Mechanical Vibrations (3)
Prerequisites: Egr 406 or equivalent. Vibrations in rotating and reciprocating machines; noise and vibration in fluid machinery; continuous systems; random vibrations; transient and nonlinear vibration, computer applications. (Offered every 2½ years)

512 Advanced Mechanical Design (3)
Prerequisite: Egr 421. Advanced mechanisms. Analysis synthesis of mechanisms. Computer aided design of mechanical, thermal and fluid systems. Optimization in design.

513 Optimal Control Systems (3)
Prerequisite: Egr 581. Formulation of optimal control problems; the calculus of variations; the maximum principle; studies of minimum-time and minimum-energy problems; dynamic programming.

515 Quantum Electronics (3)
Prerequisites: Egr 403 and 419. Electroluminescence, interaction of radiation and matter, gas lasers, solid state laser, injection lasers, holography, electro-optic effects, nonlinear optics, laser systems, noise and applications.

516 Advanced Radiation Heat Transfer (3)
A study of advanced principles in radiation heat transfer including the study of the geometric factor, black and real systems, and energy transfer in absorbing, scattering and emitting media, and radiation combined with other modes of energy transfer. (Offered every other year)

520 Advanced Viscous Fluid Flow (3)
Prerequisites: Egr 333 or equivalent. Study of the fundamental equations of viscous fluid flow. Viscous drag estimation. Drag reduction methods. (Offered every other year)

521 Antenna Theory (3)
Prerequisites: Egr 403 and 419. Polarization; radiation patterns; impedance characteristics; plane, cylindrical and spherical waves, electric and magnetic dipoles; wire antennas, traveling wave antennas; broad band antennas; analysis and synthesis of arrays; parabolas; lenses; radomes; feed systems; scattering; multiple beam antennas; synthetic antennas; phased arrays; diffraction; solution by superposition, orthogonal expansion, integral equation and variational techniques; antenna measurements.

522 Design of Fluid Film Bearings (3)
Prerequisites: Egr 333 and 407 or consent of instructor. Methods of estimation of pressure, friction, leakage losses and load carrying capacity of fluid film bearings. (Offered every other year)

523A Solid State Devices and Integrated Circuits (3)
Prerequisite: Egr 455. Solid state fabrication technologies: diffusion, epitaxy, metallization, photolithography. Solid state device design principles; diodes, transistors, FETS, linear integrated circuits, digital integrated circuits.

523B Solid State Devices and Integrated Circuits (3)
Prerequisite: Egr 455. Design and analysis of various monolithic integrated circuits: linear integrated circuits; digital integrated circuits, bipolar and MOS integrated circuits. Memory circuits, MOS large-scale integration.

524 Advanced Thermodynamics (3)
Prerequisite: Egr 316 or consent of instructor. Combined classical and statistical thermodynamics. Equilibrium and stability criteria, chemical thermodynamics, multiple reaction systems, ionization, equilibrium composition. Ideal gases, ideal solids, kinetic theory of transport processes. (Offered every other year)

526 Advanced Convective Heat Transfer (3)
Prerequisite: Egr 407. A study of advanced principles in convective heat transfer including the study of heat transfer in external and internal flow fields for both laminar and turbulent fluid flow. (Offered every other year)

527 Fault Diagnosis and Finite Automata (3)
Prerequisite: Egr 402. Advanced logic design, threshhold and quadded logic, asynchronous circuits, pulse and fundamental modes, sequential machines, fault detection and diagnosis of digital systems, and finite state recognizers.

529 Open Channel Hydraulics (3)
Prerequisite: Egr 428 or equivalent. Steady flow in open channels and rivers, critical flow, water surface profiles, controls and transitions. Introduction to sediment transport. Computer applications.

530 Advanced Strength of Materials (3)
Prerequisite: Egr 421 or consent of instructor. Energy methods. Castigliano's Theorem: curved beams, beams on elastic supports, thickwalled cylinders, shrink fits, localized stress, column instability, failure theories, three-dimensional Mohr's circle. (Offered every third semester)

531 Phase-Locked and Frequency Feedback Systems (3)
Prerequisite: Egr 507 or consent of instructor. Review of the theory of noise and linear systems, FM feedback principles. Theory and design of phase-locked loops and their applications in communication and control.

532 Earthquake Engineering (3)
Prerequisite: Egr 411 or equivalent. Characteristics of earthquake motions; spectral analysis of ground motions; structural response of linear systems; computational methods; behavior of materials and structural components due to earthquake loading; basic concepts of earthquake-resistant design; soil-structure interaction; evaluation of current earthquake codes.

533 Matrix Analysis of Structures (3)
Prerequisites: Engineering 427 and 205 or equivalent. Matrix formulation of structural analysis; flexibility and stiffness methods; direct stiffness approach; applications using the digital computer; introduction to the finite element method.

534 Surface Water Hydrology (3)
Prerequisites: Egr 423 and 436. Modern methods of analysis and design utilized in surface water hydrology. Deterministic and stochastic approaches. Topics include hydro meteorology, infiltration theory, overland flow, unitgraphs, S-curves, synthetic unitgraphs, channel routing, standard project flood, statistical analysis of hydrologic data, frequency distributions, extreme-value theory, probable maximum flood.

535 Water Resources Systems Engineering (3)
Prerequisite: Egr 435. Applications of systems analysis methods to modeling of large and small water resources systems utilizing techniques of systems analysis and operations research. Water conveyance, water distribution, water supply reservoir, groundwater and water quality systems. Modeling techniques include linear and dynamic programming.

536 Advanced Conduction Heat Transfer (3)
Prerequisite: Egr 407. A study of advanced principles in conduction heat transfer including the study of Bessel and Legendre functions, Fourier series solutions, heat sources and

sinks, multidimensional problems, transient systems and numerical methods (finite difference and finite element methods). (Offered every other year)

537 Groundwater and Seepage (3)

Prerequisite: Egr 436. Equations governing flow of liquids in porous media with applications to groundwater hydrology and seepage. Seepage through dams and under structures, flow in confined and unconfined aquifers, steady and unsteady flow, well fields, flow nets, computer solutions, sea water intrusion, recharge, groundwater pollution.

538 Dispersion of Pollutants in Fluids (3)

Prerequisites: Egr 403, 491. Diffusion and dispersion processes in environmental fluid systems. Mixing of pollutants, including heat, in rivers, estuaries, oceans and in groundwater systems. Study of turbulent jets and plumes and application to ocean outfalls. Mathematical models and their solutions by classical (analytical) and modern (computer) techniques.

539 Advanced Coastal Engineering (2)

Prerequisite: Egr 426. The development of higher-order theories in ocean waves and their application to current coastal engineering problems. Analysis of current developments in coastal engineering.

540 Computer Applications in Engineering Design (3)

Prerequisite: Egr 403. Digital and analog computers in engineering design. Design methodology, model development, model use for parametric analysis, design optimization, performance prediction; use of existing generalized programs and simulation languages is emphasized. (Offered every other year)

543 Structural Design of Highway and Airport Pavements (3)

Prerequisites: Egr 324 and graduate standing in engineering. Theories, principles and practices in the structural design of highway and airport pavements. Design of flexible and rigid pavements, including soil stabilization, pavement rehabilitation and pavement failures related to design. Review of recent advances in pavement design.

544A Advanced Foundation Engineering (3)

Prerequisites: Egr 324 and 418. Beam on elastic foundations. Raft foundations. Retaining walls. Pile groups and pier foundations. Machinery foundations. Soil structure interaction.

544B Advanced Foundation Engineering (3)

Prerequisite: Egr 418. Design of foundations on expansive soils. Foundation dewatering. Ground surface subsidence. Underpinning. Buried structures. Bulkheads and cofferdams. Pneumatic caissons.

546 Advanced Soil Mechanics and Foundation Engineering (3)

Prerequisites: Egr 324 and graduate standing. Advanced theories of soil mechanics, including consolidation, lateral pressures and bearing capacity. Advanced studies in shear strength of cohesive and cohesionless soils, including methods of testing. Seepage and groundwater. Applications to slope stability, earth dam engineering and foundation engineering.

548 Soil Dynamics (3)

Prerequisites: Egr 324 and 418. Wave propagation in soils. Dynamic behavior of soils. Blast effects. Analysis and design of dynamically loaded foundations. Earthquake design of dams and foundations of structures.

549 Theory of Elastic Stability (3)

Prerequisites: Egr 509 and 491 or equivalent. Critical loads of columns, beam columns, plates, shells; lateral stability of beams, torsional buckling of open sections, stability of the frames; dynamic stability of elastic systems.

550A,B Plasma Dynamics (3,3)

Prerequisites: Egr 403 and 419. Orbit theory, collision theory, transport properties, equilibrium, oscillations, fluctuations, thermionic energy conversion, plasma containment, instabilities, fusion power, plasma propulsion, hypersonics, plasma sheaths and wakes, scattering from plasmas, wave propagation through plasmas.

551 Network Theory and Development of Analysis and Design Programs (3)

Prerequisites: Egr 309 and 403. Network topology, element representations, multiport devices and information structures. Development of computer programs to formulate as well as solve the set of equations representing linear and nonlinear systems. Com-

parisons will be made with commercially available programs such as ECAP and SCEPTRE.

554 Hybrid Computation (3)

Prerequisites: Egr 403 and 424. Hybrid analog-digital computer systems, A/D and D/A converters and other linkage equipment, application of hybrid computers to solving partial differential equations and modeling, error analysis.

555 Electromagnetic Field Theory (3)

Prerequisites: Egr 419 and 491. Relativistic electrodynamics, retarded potentials, radiation from arbitarily moving charges, Cerenkov radiation, cyclotron radiation, propagation in dispersive media, space charge dynamics, advanced boundary value problems.

557 Sampled-Data Systems (3)

Prerequisite: Egr 416. Analysis and design of sampled-data and digital control systems, using Z-transforms and state-variable methods; consideration of stability.

559 Analysis and Synthesis of Active Networks (3)

Prerequisites: Egr 310 and 504. Analysis of active networks: controlled sources, negative-immittance converters, gyrators, and infinite-gain devices; parameter sensitivity; realizability conditions; synthesis of active RC networks.

560 Fluid-Solid Interactions (3)

Prerequisites: Egr 301 and 333. Basic elements of aeroelastic, hydroelastic and thermoelastic problems. Wind effect on structures. Fluid induced instabilities. Sloshing. Elastohydrodynamic lubrication.

570 Seminar in Electrical Engineering (1-3)

Prerequisites: graduate standing and 12 units of graduate coursework. Special topics and current developments of primary interest in the field of electrical engineering. With different content, may be retaken for additional credit.

571 Seminar in Computer Engineering (3)

Prerequisites: Egr 405 and 458. Special topics and current developments in the field of computer engineering. With different content, may be retaken for additional credit.

581 Theory of Linear Systems (3)

Prerequisites: Egr 403 and 416. Principles of state space analysis, linear spaces, stability of systems; numerical methods for linear systems analysis and design.

582 Linear Estimation Theory (3)

Prerequisites: Egr 423 and 581. Mathematical models of continuous-time and discrete-time stochastic processes; the Kalman filter, smoothing and suboptimal filtering, computational studies.

585 Optimization Techniques in Systems Engineering (3)

Prerequisite: Egr 403. Calculus of variations, optimization of functions of several variables, Lagrange multipliers, gradient techniques, linear programming, and the simplex method, nonlinear and dynamic programming.

587 Operational Analysis Techniques in Systems Engineering (3)

Prerequisites: Egr 423 and 585. Operational research models; applications of probability theory to realiability, quality control, waiting line theory, Markov chains; Monte Carlo methods.

592 Advanced Engineering Analysis (3)

Prerequisites: Egr 403 and 491 or equivalent. Partial differential equations in engineering; numerical techniques; integral equations; engineering applications.

597 Project (1-6)

Prerequisite: consent of adviser.

598 Thesis (1-6)

Prerequisite: consent of adviser.

599 Independent Graduate Research (1-3)

Prerequisite: classified graduate status. Open to graduate students only by consent of Engineering Division Graduate Committee. May be repeated for credit only upon approval of this committee.

701 Review of Applied Mathematics for Engineers (3)
Review of elementary calculus, ordinary differential equations, Laplace transforms, vector analysis, Fourier series, matrices, and partial differential equations.

GEOLOGY

(See Department of Earth Science)

DEPARTMENT OF MATHEMATICS

FACULTY
Michael Clapp
Department Chair
Russell Benson, Edwin Buchman, Joseph Bucuzzo, Gloria Castellanos, Robert Curry, Russell Egbert, James Friel, Gerald Gannon, Robert Gauntt, Richard Gilbert, Vuryl Klassen, Vyron Klassen, L. Clark Lay, William Leonard, Gerald Marley, John Mathews, Ronald Miller, David Pagni, Rollin Sandberg, Harris Shultz, Edsel Stiel, Yun-Cheng Zee

BACHELOR OF ARTS IN MATHEMATICS

The Department of Mathematics offers an undergraduate program in mathematics and options in applied mathematics and for prospective elementary and secondary teachers. A variety of courses is provided to satisfy the needs of:

1. The student planning graduate study in mathematics;
2. The student planning to use mathematics in a career in business, industry or government;
3. The student planning to teach at the elementary or secondary level;
4. The student majoring in a discipline using mathematics as a descriptive or analytic tool.

The major program is designed to give sufficient breadth and depth in the study of mathematics to prepare students for subsequent graduate study in mathematics or related areas. The applied option introduces students to the mathematics necessary for industrial or governmental careers in applied mathematics. For students interested in teaching in elementary or secondary schools, the teaching option may be combined with programs leading to a teaching credential to meet both university degree requirements and California credential laws.

In addition to the units in mathematics required in each program, all students seeking a B.A. in Mathematics must complete Engineering 205, Digital Computation. Each course required for the major, including Engineering 205, must be completed with a grade of C or better. Courses required for the major must be taken under grading option 1 and are not subject to challenge examinations.

Mathematics majors should take the lower division mathematics courses (150A,B, 250, 281 or 291) during the first two years. Furthermore, advanced calculus (350A) should be completed before the senior year.

Mathematics courses may be used to satisfy general education in the category of basic subjects.

Major Program in Mathematics

Required courses:	*Units*
Math 150A,B Analytic Geometry and Calculus	8
Math 250 Intermediate Calculus	4
Math 291 Linear Algebra	3
Math 300 Introduction to Mathematical Methods	3
Math 302 Modern Algebra	3
Math 350A,B Advanced Calculus	6
Math electives*	15
	42

* The major program must include at least two 400-level courses other than Math 496 and 499. All electives must be upper division, chosen from courses other than Math 303A,B, 311, 312, 321, 322, 380. In addition at least one course must be in applied mathematics, chosen from among Math 306, 308, 310, 335, 340, 370, 430, 431, 435, 440.

Option in Applied Mathematics

Required courses:	*Units*
Math 150A,B Analytic Geometry and Calculus	8
Math 250 Intermediate Calculus	4
Math 281 Linear Algebra with Diff. Eqns. *or*	
Math 291 Linear Algebra	3
Math 306 Vector and Tensor Analysis	3
Math 308 Introduction to Applied Mathematics	3
Math 310 Ordinary Differential Equations	3
Math 350A Advanced Calculus	3
Math electives◊	12
Math/Quantitative Methods elective◊◊	3
	42

Option in Mathematics for Teacher Education for Elementary or Secondary Education

Required courses:	*Units*
Math 150A,B Analytic Geometry and Calculus	8
Math 250 Intermediate Calculus	4
Math 291 Linear Algebra	3
Math 300 Introduction to Mathematical Methods	3
Math 302 Modern Algebra	3
Math 315 Euclidian Geometry *or*	
Math 320 Projective Geometry	3
Math 330 Number Theory *or*	
Math 335 Probability	3
Math 350A Advanced Calculus	3
Math 321 Problem Solving: Algebra	3
Math 322 Problem Solving: Geometry	3
Math Ed 442* Teaching Mathematics in Secondary School	3
	39

Minor Program in Mathematics

A mathematics minor shall consist of 20 units of coursework selected from the courses offered by the Department of Mathematics. The courses must include Mathematics 281 or 291 and at least six upper division units from the Mathematics Department, chosen from courses other than Math 303A,B, 311, 312, 321, 322, 380. Each course must be completed with a grade of C or better.

Minor Program in Mathematics for Teacher Education

A. For elementary education the minor shall consist of 20 units of coursework selected from the courses offered by the Department of Mathematics. The courses must include Mathematics 150B or 230, and Mathematics 303A,B.

B. For secondary education the minor shall consist of 20 units of coursework selected from the courses offered by the Department of Mathematics. The courses must include Mathematics 281 or 291, and six units of upper division courses in mathematics.

REQUIRED COURSEWORK FOR TEACHING CREDENTIALS

Candidates for secondary school credentials must complete the following courses: Math 321, 322, Math Ed 442 and either Math Ed 449A,B or Math Ed 749.

◊ These elective courses must be chosen from among Math 335, 340, 350B, 370, 412, 430, 431, 435, 440, and at least two must be 400 level.

◊◊ This elective may be any upper division mathematics course (except Math 303A,B, 311, 312, 321, 322, 380, 496, 499) not used to fulfill other requirements. It may also be one of Quantitative Methods 465, 466, 467, 469, 475, 490.

* Enrollment in Math Ed 442 is contingent upon being admitted to the secondary teacher education program; concurrent enrollment in six units of education courses is also required. Prospective elementary credential candidates must take coursework analogous to Math Ed 442 offered by the School of Education.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

The Department of Mathematics jointly offers the B.S. in Computer Science with the Division of Engineering and the Department of Quantitative Methods. This degree program is administered by the Computer Science Council which consists of faculty members from each of the three areas. For degree requirements, see B.S. in Computer Science under "Cross-disciplinary University Programs".

Minor Program in Computer Science

Students majoring in mathematics may obtain a minor in computer science. For course requirements, see minor in computer science under "Cross-disciplinary University Programs."

MASTER OF ARTS IN MATHEMATICS

The M.A. in Mathematics is designed to provide advanced study for students interested in continuing studies for a Ph.D. in mathematics, high school and community college teaching or mathematical analysis in industry.

Prerequisites

An applicant must meet the university requirements for admission in conditionally classified graduate standing: a baccalaureate degree from an accredited institution and a grade-point average of at least 2.5 in the last 60 semester units attempted (see section of this catalog on admission of graduates for complete statement and procedures). In addition, students must have an undergraduate major in mathematics or a combination of previous coursework and work experience approved as equivalent by the graduate committee of the Mathematics Department.

A student who meets the requirements for conditionally classified graduate standing, and who has a grade-point average of 3.0 in upper-division mathematics courses, may be admitted as a classified graduate upon the development of an approved study plan. Students with subject or grade deficiencies who have been admitted to conditionally classified standing must complete all courses required by the graduate committee with at least a 3.0 average before they will be classified. In addition, students in the secondary schools option should have completed a minimum of one year of full-time teaching in junior high or senior high mathematics.

Study Plan (for all except students in secondary option)

The degree program requires 30 units of graduate study approved by the graduate committee. Sixteen of these units must be 500-level mathematics courses. Each student will be required to take electives to insure competence in algebra, analysis, topology and geometry. Nine units will be required outside the student's specialization, which may be taken in the Mathematics Department.

Study Plan for Option in Mathematics for Secondary Schools

This option, designed for high school mathematics teachers, requires 30 units of graduate study approved by the graduate committee. Sixteen of these units must be 500-level mathematics courses. The following coursework must be included: Math 581, 582, and 583, 580 or 584 and four units of 599. Each student will be required to take electives to insure competence in algebra, geometry and analysis.

In both the regular program and the option, each student must pass a set of comprehensive examinations (written and/or oral) designed to test competence in coursework taken before the department will recommend the awarding of the degree.

For more detailed information or advisement, students should communicate with the chair of the Department of Mathematics.

See also "The Program of Master's Degrees" in this catalog and the *Graduate Bulletin*.

MASTER OF SCIENCE IN COMPUTER SCIENCE

The Department of Mathematics jointly offers the M.S. in Computer Science with the Division of Engineering and the Department of Quantitative Methods. For degree requirements, see M.S. in Computer Science under "Cross-disciplinary University Programs."

MATHEMATICS COURSES*

100 Precalculus Mathematics (1-4)
Prerequisites: the equivalent of three years of high school mathematics. Topics in mathematics below the calculus level. A maximum of four units credit may be earned. Students failing to qualify for calculus should enroll for four units credit.

110 Mathematics for Liberal Arts Students (3)
Prerequisites: two years of high school mathematics, including one year of algebra and one year of geometry. Selected topics in algebra, number theory, geometry, set theory, probability and analysis with special emphasis on the ideas and methods involved. Designed specifically for non-science majors.

120 Introduction to Probability and Statistics (3)
Prerequisites: the equivalent of three years of high school mathematics, including a second course in algebra. Topics include set algebra, finite probability models, sampling, binomial trials, conditional probability and expectation. It is particularly suited to students of economics, business, the biological, earth and social sciences.

130 A Short Course in Calculus (4)
Prerequisites: the equivalent of three years of high school mathematics, including a second course in algebra, and a passing score on the Mathematics Placement Examination. Elements of differential and integral calculus. Designed for students of business, economics, the biological, earth and social sciences.

150A,B Analytic Geometry and Calculus (4,4)
Prerequisites: the equivalent of four years of high school mathematics including trigonometry and a passing score on the Mathematics Placement Examination. 150A is a prerequisite for 150B. An introduction to analysis including analytic geometry, functions, limits, differentiation, the definite integral, techniques of integration, applications, infinite series, Taylor's theorem.

230 Elementary Probability and Statistics with Calculus (3)
Prerequisites: Math 130 or 150B. An introduction, using calculus, to the elements of probability and statistics. Designed for students of business, economics, the biological, earth and social sciences.

250 Intermediate Calculus (4)
Prerequisites: Math 150A,B or equivalent. A continuation of Math 150. Topics include functions of several variables, partial differentiation, multiple integration, linear differential equations.

281 Linear Algebra with Differential Equations (3)
Prerequisite: Math 250. An introduction to linear algebra with particular application to the theory of ordinary differential equations. Intended for students in the physical sciences, computer science and engineering.

291 Linear Algebra (3)
Prerequisite: Math 130 or 150A, the elementary notions of linear algebra: matrices, systems of linear equations, determinants, eigenvectors and eigenvalues, Euclidean vector spaces.

300 Introduction to Mathematical Methods (3)
Prerequisite: Math 150B. Fundamental concepts of mathematics and an introduction to the essentials of careful mathematical reasoning. Elementary properties of sets and functions. Treatment of the methods of constructing proofs and the logic associated with these methods.

302 Modern Algebra (3)
Prerequisites: Math 281 or 291 and 300. The integers, rational numbers, real and complex numbers, polynomial domains, introduction to groups, rings, integral domains and fields.

303A,B Fundamental Concepts of Elementary Mathematics (3,3)
(Formerly Math Ed 303A,B)
Prerequisites: at least one prior course in each of the fields of algebra and geometry. Three years of high school mathematics recommended. A rigorous approach to the structure

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* Prerequisites may be waived in any mathematics course by consent of instructor.

and form of the mathematics that constitutes the core of the K-8 mathematics curriculum, including the real number system, number theory and equations. Designed to develop and strengthen the mathematical ability and maturity of the prospective elementary and junior high school teacher.

304 Mathematical Logic (3)

Prerequisite: Math 150B. An introductory course in the elements of mathematical logic.

305 Elements of Set Theory (3)

Prerequisites: Math 250 and 281 or 291. Operations on sets; functions; cardinals and ordinals; ordering, well ordering; axiom of choice; transfinite numbers.

306 Vector and Tensor Analysis (3)

Prerequisites: Math 250 and 281 or 291. Analysis of vector fields; Green's, Gauss' and Stokes' theorems. Introduction to tensor analysis. Applications to geometry, mechanics and electromagnetism.

308 Introduction to Applied Mathematics (3)

Prerequisite: Math 250, 281 or 291. Introductory topics in applied mathematics including complex algebra and analysis, orthogonal functions. Fourier series, partial differential equations, and Laplace transforms.

310 Ordinary Differential Equations (3)

Prerequisites: Math 250 and 281 or 291. Theory and methods of solutions for ordinary differential equations and an introduction to existence theorems.

311 Elementary Problem Solving (3) (Formerly Math Ed 305)

Prerequisite: Math 303A; 303B recommended. Analysis of problem solving techniques using content from algebra, probability, number theory and other areas having applications to the K-8 mathematics curriculum. Designed for students planning to teach at presecondary levels.

312 Elementary Concepts of Geometry (3) (Formerly Math Ed 306)

Prerequisite: Math 303A. A combination of axiomatic and intuitive approaches to geometry, including spatial relations, systems of measure, topological notions, and other geometrical concepts having applications to the K-8 mathematics curriculum. Designed for students planning to teach at presecondary levels.

315 Euclidean Geometry (3)

Prerequisite: Math 250. Selected topics in advanced Euclidean geometry such as convexity, transformation theory and *n*-dimensional Euclidean space.

320 Projective Geometry (3)

Prerequisite: Math 281 or 291. Homogeneous coordinates, projective group, cross-ratio, duality, point and line conics.

321 Problem Solving: Algebra (3) (Formerly Math Ed 321)

Prerequisite: Math 281 or 291. Critical analysis of problem solving, proofs and logical structure in algebra. Topics to be selected from new and emerging content in the mathematics curriculum in the secondary schools.

322 Problem Solving: Geometry (3) (Formerly Math Ed 322)

Prerequisite: Math 250. Critical analysis of problem solving, proofs and logical structure in geometry. Topics to be selected from new and emerging content in the mathematics curriculum in the secondary schools.

330 Number Theory (3)

Prerequisite: Math 250 or 291. Divisibility, congruences, prime number theory, Diophantine problems.

335 Mathematical Probability (3)

Prerequisite: Math 250. An introductory course in probability theory and its applications, based on use of the calculus.

340 Numerical Analysis (3)

Prerequisites: Math 250, 281 or 291, and a knowledge of computer coding. Approximate numerical solutions of systems of linear and nonlinear equations, interpolation theory, numerical differentiation and integration, numerical solution of ordinary differential equations. Computer coding of numerical methods.

350A,B Advanced Calculus (3,3)

Prerequisites: Math 250, 281 or 291. 350A is a prerequisite for 350B. Designed to introduce the student to rigorous proofs in analysis. Topics include continuity, differentiation and

integration of functions of several variables, improper integrals, sequences and infinite series.

370 Mathematical Model Building (3)

Prerequisites: Math 250, 281 or 291, or consent of instructor. An introduction to the theory of mathematical models and their applications in the biological, physical and social sciences. Discrete and continuous models will be studied. Students will complete a project suitable to their background and interest.

380 History of Mathematics (3) (Formerly Math Ed 480)

Prerequisites: senior standing with a mathematics or mathematics education major. An introduction to the history of elementary mathematics through calculus, by a problem solving approach.

407 Abstract Algebra (3)

Prerequisite: Math 302. Sets, mappings, groups, rings, modules, fields, homomorphisms, advanced topics in vector spaces and theory of linear transformations, matrices, algebras, ideals, field theory, Galois theory.

412 Complex Analysis (3)

Prerequisite: Math 350A. Complex differentiation and integration, Cauchy's theorem and integral formulas, maximum modulus theorem, harmonic functions, Laurent series, analytic continuation, entire and meromorphic functions, conformal transformations and special functions.

414 Topology (3)

Prerequisite: Math 350A. An introductory course in point set and algebraic topology.

425 Elementary Differential Geometry (3)

Prerequisite: Math 350A. The differential geometry of curves and surfaces in Euclidean 3-space. Differential forms in 3-space. Cartan's equatics of structure. Gauss-Weingarten-Codazzi equations.

430 Partial Differential Equations (3)

Prerequisite: Math 350B. An introduction to first and second order partial differential equations, their classification and analyses of elliptic, hyperbolic and parabolic equations.

431 Methods of Applied Mathematics (3)

Prerequisite: Math 350A. Selected topics from partial differential equations of physics. Fourier series, orthogonal functions, integral transforms and the calculus of variation.

435 Mathematical Statistics (3)

Prerequisite: Math 335 or Engineering 423. An introductory course in statistical theory and its applications, based on the use of calculus.

440 Advanced Numerical Analysis (3)

Prerequisite: Math 340. Approximate numerical solution of partial differential equations and boundary value problems in which they are involved, using finite difference methods. Numerical computation of eigenvalues and eigenvectors. Error analysis. Computer coding of numerical methods.

450 Real Analysis (3)

Prerequisite: Math 350B. An introduction to Lebesgue measure and integration and selected topics from real analysis.

496 Student-to-Student Tutorials (1-3)

See page 85.

499 Independent Study (1)

Prerequisite: consent of instructor. Study of some special topic in mathematics, selected in consultation with the instructor and carried out under his supervision.

506 Seminar in Number Theory (3)

Prerequisites: Math 302, 330, 350B. Selected topics in analytic and algebraic number theory. May be repeated for credit.

507 Topics in Abstract Algebra (3)

Prerequisite: Math 407. Modules, algebras, ideal theory, field theory, Galois theory, categories, functors, homology.

508 Seminar in Algebra (3)

Prerequisite: Math 407. Structure theory of rings, algebras, field and Galois theory. Homological algebra. Research topics in algebra. May be repeated for credit.

512 Complex Analysis (3)

Prerequisite: Math 412 (or 308 and 350B). Special topics in complex analysis including

analytic functions of several variables, special functions, conformal mapping and Riemann surfaces.

514 Topology (3)
Prerequisite: Math 414. Advanced point set and algebraic topology.

515 Seminar in Advanced Topology (3)
Prerequisite: consent of instructor. Advanced areas in topology in preparation for research work. May be repeated for credit.

520 Lebesgue Measure and Integration (3)
Prerequisite: Math 350B. Lebesgue measure and integration on the line and in *n*-space. Topics include the dominated convergence theorem, absolute continuity, convergence in measure and in mean, differentiation and Fubini's theorem.

525 Differential Geometry (3)
Prerequisite: Math 414. Differentiable manifolds, connections, curvature, torsions, covariant differentiation, topics in Riemannian geometry.

526 Seminar in Geometry (3)
Prerequisite: consent of instructor. May be repeated for credit.

530 Topics in Applied Mathematics (3)
Prerequisite: consent of instructor. May be repeated for credit.

531 Seminar in Applied Mathematics (3)
Prerequisite: consent of instructor. Advanced topics in applied mathematics. May be repeated for credit.

535 Applied Probability and Statistics (3)
Prerequisites: Math 335 (or Engineering 423), Math 350A (or the equivalent) and experience in computer programming. Monte Carlo methods and stochastic processes. Applications. Computer software design.

540 Topics in Numerical Analysis (3)
Prerequisites: Math 340 and Math 350A. Advanced topics in numerical analysis with emphasis on minimization of effect of computer roundoff error. Applications in differential equations, systems of algebraic equations, optimization, integration, and computer software design.

545 Approximation Theory (3)
Prerequisites: Math 340, 350A (or the equivalent) and experience in computer programming. Methods of approximating functions and their analysis. Particular estimators and classes of them. Applications. Computer software design.

550 Topics in Real Analysis (3)
Prerequisite: consent of instructor. General theory of measure and integration, set functions, theorems of Radon-Nikodym and Fubini.

551 Seminar in Analysis (3)
Prerequisite: consent of instructor. A semester graduate course in analysis. Advanced topics in real and complex analysis. May be repeated for credit.

560 Functional Analysis (3)
Prerequisite: Math 350B. Topics in modern functional analysis including Hilbert and Banach spaces, linear transformations and spectral theory.

580 Junior High School Mathematics from an Advanced Standpoint (3)
Prerequisites: Math 302, graduate standing, plus one year of full-time teaching in junior or senior high school mathematics. The content and methods of mathematics related to the junior high school mathematics curriculum.

581 High School Geometry from an Advanced Standpoint (3)
Prerequisites: Math 291 or consent of instructor, graduate standing, plus one year of full-time teaching in junior or senior high school mathematics. The content and methods of mathematics related to the high school geometry curriculum.

582 High School Algebra from an Advanced Standpoint (3)
Prerequisites: Math 291, 302, or consent of instructor, graduate standing, plus one year of full-time teaching in junior or senior high school mathematics. The content and methods of mathematics related to the high school algebra curriculum.

583 Precalculus High School Mathematics from an Advanced Standpoint (3)
Prerequisites: Math 350A, or consent of instructor, graduate standing, plus one year of full-time teaching in junior or senior high school mathematics. The content and methods of

mathematics related to the high school precalculus curriculum (primarily trigonometry and analytic geometry).

584 Elementary Analysis from an Advanced Standpoint (3)

Prerequisites: Math 350A, or consent of instructor, graduate standing, plus one year of full-time teaching in high school mathematics. The content and methods of mathematics related to high school curriculum in analysis.

599 Independent Graduate Research (1-3)

Prerequisite: graduate standing. One unit of independent study required of each student for each regular graduate course. Also offered without being attached to any course. May be repeated for credit.

MATHEMATICS EDUCATION COURSES

442 Teaching Science and Mathematics in the Secondary School (3)

Prerequisite: appropriate education and science or mathematics coursework for credential. Objectives, methods, and materials including audiovisual instruction for teaching science and mathematics will be studied. Required, before student teaching, of students presenting majors in science or mathematics for the general secondary credential. (2 hours lecture, 2 hours activity) (Same as Science Ed 442)

449A Student Teaching in Mathematics in the Secondary School (10)

See description under Division of Teacher Education.

449B Student Teaching Seminar (2)

See description under Division of Teacher Education.

499 Independent Study (1-3)

Prerequisite: consent of instructor. Study of some special topic in mathematics education, selected in consultation with the instructor and carried out under his supervision. May be repeated for credit.

749 Student Teaching in Mathematics in the Secondary School and Seminar (6)

For candidates seeking the Fisher standard credential in secondary teaching. See description and prerequisite under Division of Teacher Education.

750 Seminar in Mathematics Education (1-3)

Prerequisite: post-baccalaureate standing and consent of instructor. Study of selected problems in elementary or secondary education. May be repeated for credit.

799 Independent Research (1-3)

Prerequisites: post-baccalaureate standing and consent of instructor. Study of some special topic in mathematics education, selected in consultation with the instructor and carried out under his supervision. May be repeated for credit.

METEOROLOGY

(Offered by the Department of Earth Science and the Department of Geography)
See departmental descriptions for the following courses:

Earth Science

210 Introduction to Meteorology (3)
330 Hydrology, Meteorology and Oceanography (4)
430 Advanced Studies in Meteorology and Oceanography (2)

Geography

323 Weather and Climate (3)
423 Physical Climatology (3)

OCEANOGRAPHY

(Offered by the Department of Biological Science and the Department of Earth Science)
(See department descriptions for the following courses)

Biological Science

318 Marine Biology (3)
318L Marine Biology Laboratory (1)
417 General Oceanography (3)
418 Biological Oceanography (4)

419 Marine Ecology (4)
420 Biology of Marine Plankton (4)
446 Phycology (4)
461 Invertebrate Zoology (4)
475 Ichthyology (4)
518 Seminar in Marine Science (3)

Earth Science
110 Introduction to Physical Oceanography (3)
330 Hydrology, Meteorology and Oceanography (4)
430 Advanced Studies in Meteorology and Oceanography (2)

PHYSICAL SCIENCE

(Offered by the Departments of Chemistry and Physics)

100 Man and His Physical Environment (4)
Designed for non-science majors. Traced are some of man's scientific activities which have resulted in major modification of his environment. Key elements will be examined with a view toward predicting trends and suggesting alternatives. Topics include: transportation; energy conversion; food production; population; waste disposal; and chemical warfare. Emphasis on those problems which threaten man's survival.

110 Man's Physical Universe (4)
Designed for non-science majors. Presented are selected principles of physics and chemistry with a minimum of mathematical detail. Goal of course is to show the relationship between physical science and the phenomena of our every day lives. The physical principles themselves, as well as the impact of their consequences on society will be explored.

DEPARTMENT OF PHYSICS

FACULTY
Edward Cooperman
Department Chair

Raymond Adams, Kurt Bengtson, Harvey Blend, Ronald Crowley, Roger Dittman, Stuart Dubin, Fred Johnson, Roger Nanes, Mark Shapiro, Louis Shen, Dorothy Woolum

The Physics Department has a strong interest in the student's career objectives. Frequent meetings with advisers and the chair are scheduled. A daily tutorial session is in operation, designed to allow the student access to all faculty for aid in homework, problem-solving, as well as advising.

The entire curriculum is designed to make the study of physics relevant while allowing the student maximum flexibility to fit his career goals. All physics majors must file a plan of study prior to entering upper division coursework; this must be approved by the adviser and the chair.

The physics curriculum is designed to meet the needs of students pursuing careers in areas such as: physics at the graduate level; technical and applied physics; optometry, dentistry, patent law, medicine, computer science; hybrid fields such as astrophysics, biophysics, geophysics and physical chemistry; or teaching.

BACHELOR OF ARTS IN PHYSICS

To qualify for the Bachelor of Arts in Physics, students must have a C average in all courses required for the major, including those in mathematics and related sciences. No credit toward the major will be allowed for major courses in which a grade of D is received.

Proficiency in one foreign language (Russian, German or French) is recommended. A reading comprehension of a second foreign language is also recommended for those students planning graduate study leading to the Ph.D. It is recommended that two semesters

of a fundamental course in a foreign language (10 units) and one semester of a scientific foreign language course be taken.

Minimum departmental requirements for the degree follow:

Lower division	*Units*
Freshman seminar (Physics 101)	1
General chemistry (Chem 101A,B)	10
Mathematics (Math 150A,B and 250)	12
Fundamental physics (Physics 225A,B,C,D and 226C)	15
Total	38

Upper division	
The following core courses:	
Physics 431 Electricity and Magnetism	3
Physics 441 Analytical Mechanics	3
Physics 451A Modern Physics	3
Physics 480 Methods of Experimental Physics	3
At least 12 additional upper division units in physics, selected in consultation with student's academic adviser with approval by both adviser and department chair	12
Total	24

Other requirements

In addition, the physics major must select a minimum of 16 additional upper division units from this or other departments.

Students are encouraged to consider taking additional upper-division mathematics courses.

Each physics major must file a plan of study with the Physics Department as early as possible but no later than the first semester of the student's junior year. This plan reflecting the student's needs will be worked out with and approved by the faculty adviser and the department chair.

MINOR IN PHYSICS

A minimum of 21 units of physics are required for a minor. These shall include 12 units of lower division physics (or equivalent as determined by the Department of Physics), and a minimum of nine units of upper division physics, including a minimum of three units of experimental physics.

Suggested Eight Semester Program Leading to a B.A. in Physics*

Semester 1. Freshman	*Units*
Physics 101 Freshman Seminar	1
Physics 225A Fundamental Physics	4
Math 150A Analytic Geometry and Calculus	4
Semester 2. Freshman	
Physics 225B Fundamental Physics	4
Math 150B Analytic Geometry and Calculus	4
Semester 3. Sophomore	
Physics 225C, 226C Fundamental Physics	4
Math 250 Intermediate Calculus	4
Chem 101A General Chemistry	5

* Suggested general education courses: English composition and/or world literature, Hist 170A, United States Since 1877, Poly Sci 100, American Government (these meet state requirements); Bio Sci 102, Crisis Biology, English 301, Advanced Composition, Phil 210, Logic, and a foreign language number 303, Scientific Readings, are courses useful to the physics major. In addition to courses that have some relation to physics, the student is urged to select courses in unrelated areas.

Semester 4. Sophomore	*Units*
Physics 225D Fundamental Physics	3
Math 281 Linear Algebra and Differential Equations (recommended but not required)	3
Chem 101B General Chemistry	5
Semester 5. Junior	
Physics 441 Analytical Mechanics	3
Physics 480 Methods of Experimental Physics	3
Semester 6. Junior	
Physics 431 Electricity and Magnetism	3
Physics plan-of-study elective (Physics 411, 481-4, 490)	3
Semester 7. Senior	
Physics 451A Modern Physics	3
Physics plan-of-study elective (Physics 410, 416, 481-4, 490)	3
Semester 8. Senior	
Physics plan-of-study elective	3
Physics plan-of-study elective (Physics 451B, 455, 481-4, 490)	3

GRADUATE WORK IN PHYSICS

The Physics Department offers a number and variety of graduate courses in physics. Students planning graduate studies are encouraged to take Physics 410.

PHYSICS COURSES*

100 Man and His Physical Environment (4)
(See course description under Physical Science 100)

101 Freshman Seminar (1)
Offered on a credit-no-credit basis only. Open to all interested persons in the academic community including both those in science and those not in science. Presentations on the type of work that is being done by physicists throughout the world. Approximately 15 seminar talks presented by well-known persons from the field of physics or a closely related field.

110 Man's Physical Universe (4)
(See course description under Physical Science 110)

211A,B Elementary Physics (4,4)
Corequisite: Math 130 or 150A or equivalent. Elementary physics covers mechanics and thermodynamics in the first semester, and electricity and magnetism, wave motion and quantum mechanics in the second semester. Illustrative material from biology and medicine will be included. (3 hours lecture, 3 hours laboratory per week)

225A Fundamental Physics: Mechanics (4)
Corequisite: Math 150A. Classical physics, including Newtonian mechanics, linear and circular motion, energy, momentum, systems of particles, rigid body motion and the special theory of relativity. (3 hours lecture, 3 hours laboratory per week)

225B Fundamental Physics: Electricity and Magnetism (4)
Prerequisite: Physics 225A or equivalent; corequisite: Math 150B. Electrostatics, electric potential, Poisson's and Laplace's equations, capacitance, dielectrics and boundary value problems, electrical circuits, resistance, emf, magnetism and magnetic materials, and introduction to Maxwell's equations. (3 hours lecture, 3 hours laboratory per week)

225C Fundamental Physics: Modern Physics (3)
Prerequisite: Physics 225B or equivalent. Concurrent enrollment in Physics 226C laboratory required. Geometrical and physical optics, wave phenomena; the historical development of quantum physics, including the photoelectric effect, line spectra and

* For all courses, prerequisites not requiring consent of the department chair may be waived by the instructor of the course if he is satisfied that the student is qualified to undertake the course. A grade of C or better is required for all prerequisite courses.

the Bohr atom; the wave nature of matter, Schroedinger's equation and solutions; the Uncertainty Principle.

225D Fundamental Physics: Classical Thermodynamics (3)

Prerequisite: Physics 225C or equivalent. Fundamental concepts of temperature, work, internal energy, heat, reversibility, and entropy; the laws of thermodynamics; physical, chemical and engineering applications.

226C Fundamental Physics: Laboratory (1)

Laboratory for Physics 225C. Concurrent enrollment in 225C lecture required. (3 hours laboratory per week)

NOTE: For Physics 225A,B,C,D. Prerequisites may be waived by consent of the department chair and/or instructor.

300 Introduction to Astronomy (4)

Prerequisite: high school algebra. Includes celestial motion, a study of the solar system, galactic structure, theories of the origin of the universe and the solar system with emphasis on evolution, leading to precursors of life-forming molecules. (3 hours lecture, 1 hour of activity, field trips to planetariums and/or observatories and observing sessions) (Same as Earth Science 300)

311 Introduction to Molecular Biophysics (3)

Prerequisites: Biological Science 101, Math 150A,B or consent of instructor, and Physics 211A,B. An introduction to the properties of biological systems from a molecular viewpoint. Emphasis on determinations of macromolecular size and shape and the relation of such information to the function of biological systems.

312 Elementary Modern Physics (3)

Prerequisites: Physics 211A,B or consent of instructor. Not open to physics majors. Basic theories of post-1900 physics, relativity and quantum mechanics. Applications to solid state physics, nuclear physics and elementary particle physics may be included.

313 Elementary Modern Physics Laboratory (1)

Prerequisite: Physics 211A,B. High School algebra, trigonometry. Basic theories of post-1900 physics, relativity and quantum mechanics, from an elementary point of view, applications to solid state physics and elementary particles as time permits. Not open to physics majors. Concurrent enrollment in 312 required. (3 hours laboratory per week)

350 General Astronomy (4)

(Same as Earth Science 350)

384 Philosophy of Natural Sciences (3)

Prerequisites: consent of instructor. Philosophy of space, time relativity, quantum mechanics and causality. Subjects to be included are operationalism, instrumentalism, scientific realism, and an investigation into the methodology of deduction and induction as applied to the natural sciences.

405 Acoustics (4)

Course is designed expressly for non-science majors and a major portion of the material covered is oriented toward applications in music, psychology and linguistics. (2 hours lecture, 1 hour conference, 3 hours laboratory)

410 Introduction to Mathematical Physics (3)

Prerequisite: Physics 431 and 441. The ordinary and partial differential equations of physics. Vector calculus, linear algebra, calculus of variations, Fourier series and integral transforms with emphasis on problems in physics.

411 Theory of Wave Motion (3)

Prerequisites: Physics 225 series sequence, Math 150B. The properties of wave motion—production, propagation, refraction, diffraction, interference and transmission of waves—as applied to mechanics, electromagnetism and quantum mechanics.

414 Physics of the Solar System (3)

Prerequisites: Math 250, 150A,B and Physics 225A,B,C; Physics 225D recommended. Solar system physics, including physical principles underlying current experiments in planetary science and space physics. Topics: solar physics; planetary dynamics; experimental probes of planetary surfaces, interiors and atmospheres; physical constraints on theories of the solar system origin.

415 Astrophysics (3)

Prerequisites: Math 150A,B and Math 250, Physics 225A,B,C or equivalent. Topics include: study of star formation, the interstellar medium, astro-organic synthesis; formation of molecules and solar system, pulsars, Novas, variable stars and magnetic stars. Recent

astronomical observations will be discussed in the light of modern theoretical physical techniques and models.

416 Thermal and Statistical Physics (3)

Prerequisites: Physics 225 series sequence. An intermediate presentation of the disciplines of thermodynamics, statistical mechanics and kinetic theory (and their applications) with emphasis placed on their unifying microscopic foundation.

431 Electricity and Magnetism (3)

Prerequisites: Physics 225 series sequence, Math 250. Theories of electrostatics, electrodynamics and electromagnetic waves.

441 Analytical Mechanics (3)

Prerequisites: Physics 225 series sequence, Math 250. Principles of Newtonian mechanics applied to the statistics and dynamics of particles and rigid bodies. Introduction to Lagrangian and Hamiltonian equations.

451A,B Modern Physics (3,3)

Prerequisites: Physics 225C and Math 250, or consent of instructor. Physics 451A must be taken before 451B. A survey of the principal modern physical theories and their experimental foundations. **A**—Basic relativity theory, atomic theory of matter and an introduction to quantum mechanics. **B**—Introduction to solid state, nuclear and particle physics.

452 Introductory Radiology (3)

Prerequisite: one year college physics. X-rays, radioactivity, interaction of radiation with matter, detection of radiation, applications to health physics. Especially suitable for biology, chemistry, and premedical students who expect to work in radiation biology, radiation chemistry or medical radiology.

453 Nuclear Physics (3)

Prerequisites: Physics 225 series sequence, Math 250. Properties of nuclei, radioactivity, elementary particles, nuclear reactions. Introductory discussion of theories of nuclear structure and nuclear processes.

454 Introduction to the Solid State of Matter (3)

Prerequisite: one course in atomic or nuclear physics, differential equations. An introduction to the physical properties of matter in the solid state, as explained by atomic theory. Crystal structure, thermal, electric and magnetic properties of metals, semiconductors, band theory and solid state devices.

455 Introduction to Quantum Physics (3)

Prerequisites: Physics 431, 441, differential equations. An introduction to the concepts and theory of quantum physics. Early quantum theories, the Schroedinger equation, eigenvalue equations, operators, commutation properties, applications to simple quantum systems, matrix formulation, perturbation theory.

465 Gravitation (3)

Prerequisites: Vector analysis and simple partial-differential equations. Designed to develop the applications of modern differential geometry to Einstein's geometric framework for physics. Included are applications to stars, cosmology, Schwartzchild geometry, gravitational collapse, gravitational waves and investigations of the experimental tests of various alternative theories of gravity.

471 Electronic Circuit Theory (3)

Prerequisites: Physics 225 series sequence, Math 250. Operating characteristics of vacuum tubes, transistors and semiconductor diodes. Linear circuit theory for alternating currents and for transient currents. Introduction to switching and pulse circuits.

476 Atomic Structure (3)

Prerequisite: Physics 455. Theory of atomic structure, interaction of radiation with matter. Angular momentum and coupling schemes.

480 Methods of Experimental Physics (3)

Prerequisite: Physics 225B or consent of instructor. An introduction to, and survey of, the experimental techniques of laboratory physics. Topics include: the interpretation and analysis of data, experiment planning, calibration of equipment. Selected experiments from the field of electronics, optics, vacuum technology, nuclear physics and atomic physics.

481 Experimental Physics (2)

Prerequisite: Physics 480. Selected experiments in electrical measurements and electronics,

with emphasis on precision of measurement and standardization of instruments. (6 hours laboratory)

482 Experimental Physics (2)

Prequisites: Physics 441 and 480. Selected experiments in mechanics, acoustics, physical optics and microwaves. (6 hours laboratory)

483 Experimental Physics (2)

Prerequisite: Physics 480. Selected experiments in atomic and nuclear physics. (6 hours laboratory)

484 Experimental Physics (2)

Prerequisite: Physics 480. Selected experiments in classical and modern physics (6 hours laboratory)

490 Senior Seminar (1-3)

Prerequisite: consent of instructor. Topics in recent developments in physics not ordinarily covered in organized courses. May be repeated for credit. Open to upper division and graduate students in physics and related areas.

496 Student-to-Student Tutorials (1-3)

A formal way to encourage students to learn through teaching, increase mastery of particular subject matters, provide opportunities to develop awareness of teaching problems and competence in teaching techniques. See page 85.

499 Independent Study (1-3)

Prerequisites: approval of study plan by department chair and instructor. Study of some selected topic in physics, selected in consultation with instructor and carried out under his supervision. May be repeated for credit to a maximum of six units.

505 Biophysics Seminar (3)

Prerequisites: Math 250A,B, Bio Sci 101 and Chem 101A,B. Topics and problems in the interdisciplinary area of biophysics. Discussion of macromolecular structure and function. Emphasis will be placed on methods of determining size and conformation of proteins and the relationship of these parameters of the biological function of such molecules.

510 Analytical Mechanics (4)

Prerequisite: mathematics through partial differential equations. A thorough theoretical treatment of classical mechanics including the important motions of a point, general principles of work and energy, the principle of least action, Lagrange and Hamiltonian equations, the dynamics of rigid bodies, and related topics.

520 Statistical Physics (3)

Prerequisite: mathematics through partial differential equations. Fundamental concepts of probability and statistics; random walk; equilibrium; transport theory; ensembles; constraints; irreversibility; canonical distributions; classical and quantum statistics. Applications to fields such as temperature, conductivity, radioactivity, thermionic emission, solutions, reactions, fluctuations, random noise and plasmas.

540A,B Classical Electrodynamics (4-3)

Prerequisite: Mathematics through partial differential equations. **A**—Boundary value problems in electrostatics and magnetostatics; multipole expansions; dielectrics and macroscopic media; Maxwell's equations and conservation laws; wave guides and resonators. **B**—Simple radiating systems; electromagnetic potentials; multipole radiations; classical relativistic electrodynamics; radiation from moving charges.

550A,B Quantum Physics (4,3)

Prerequisite: mathematics through partial differential equations. The quantum mechanical treatment of piecewise continuous potentials, the linear harmonic oscillator, central forces and angular momentum and the hydrogen atom; representation theory, the WKB approximation, scattering, the Born approximation, quantum dynamics, spin perturbation theory, symmetry principles, identical particles.

554 Nuclear Theory (3)

Prerequisite: Physics 540A. Internucleon forces; nuclear models; electromagnetic properties of nuclei, nuclear radiation theory.

560A,B Methods of Theoretical Physics (4,3)

Prerequisite: Math 250. A study of selected applications of mathematics to physical theory and to engineering. Applications are selected from ordinary and partial differential equations, integral equations, integral transforms, series expansions of functions,

calculus of variations, matrix theory, tensor analysis, group theory, complex variable theory and numerical analysis.

570 Solid State Physics (3)

Prerequisites: Physics 562 and 540A. Crystalographic groups; lattice vibrations, magnetic phenomena, energy band theory, with applications to the electrical and optical properties of solids and superconducting media.

581 Experimental Physics (3)

Prerequisite: sufficient undergraduate experimental background. Presents basic, advanced techniques. Proper usage of computers and statistical methods in data analysis. Selected experiments in various fields of physics will be performed to teach proper data handling techniques.

598 Thesis (1-6)

Planning, preparation and completion of an acceptable thesis in partial fulfillment of the requirements for the master's degree. Credit to be obtained only upon formal submission of thesis.

599 Independent Graduate Research (1-3)

Prerequisite: written approval of study plan by department committee and by instructor. Open only to graduate students and only with consent of a faculty member. May be repeated for credit.

DEPARTMENT OF SCIENCE EDUCATION

FACULTY
George Turner
Department Chair
Gaylen Carlson, Francis Collea, H. Eric Streitberger, Barry Thomas, Charles Williams

The Department of Science Education offers two programs in the general science area: environmental education and science education. Degrees and curricular offerings in each area are described below.

PROGRAM IN ENVIRONMENTAL EDUCATION

In recognition of the need for education in nature interpretation and conservation the Department of Science Education is developing coursework in these disciplines. Much of the coursework for these areas will take place at the nearby Tucker Wildlife Sanctuary. This sanctuary has been designated as a center for research and nature interpretation. In addition to research and coursework, the sanctuary will provide a continuing public service to the community through its daily programs in nature interpretation. This service is provided by resident professor-naturalists and student-naturalists in training at the facility. School groups as well as adults are invited to attend the regularly scheduled programs.

MASTER OF SCIENCE IN ENVIRONMENTAL STUDIES—ENVIRONMENTAL EDUCATION EMPHASIS

The Environmental Education Emphasis of the M.S. in Environmental Studies is based on the need to provide a background in nature interpretation that will enable the student to pursue a career as a park naturalist, environmental consultant for city, school and public organizations, and as a teacher specialist in environmental education and ecology. For further information, see environmental studies program under "Cross-disciplinary University Programs."

PROGRAMS IN SCIENCE EDUCATION

The Department of Science Education prepares students to teach science at the elementary and secondary levels, provides guidance for experienced teachers in the study and use of educational practices developed for the teaching of sciences and helps teachers develop original ideas in their areas of specialization.

The offerings of this department include basic professional training courses required for teacher certification, advanced coursework in science education, and certain academic content offerings designed especially for teacher preparation.

REQUIRED COURSEWORK FOR TEACHING CREDENTIALS

The following courses offered by the Department of Science Education are required of candidates for teaching credentials in science.

Secondary School Credential Candidates—*Science*

Sci Ed 312 Processes of Science (3)
Sci Ed 442 Teaching Science in the Secondary School (3)
Sci Ed 449A Student Teaching in Science in the Secondary School (10)
Sci Ed 449B Student Teaching Seminar (2)
Sci Ed 749 Student Teaching in Science in the Secondary School (6)

COURSEWORK THAT WILL MEET GENERAL EDUCATION REQUIREMENTS FOR PROSPECTIVE ELEMENTARY TEACHERS

Natural Sciences Minimum: nine units

Sci Ed 100A,B,C Science for the Nonmajor—A Laboratory Approach (3,3,3)*or*
Sci Ed 101 Physical Science for the Nonmajor—A Laboratory Approach (5) *and*
Sci Ed 102 Biological Science for the Nonmajor—A Laboratory Approach (4)
Env Ed 350 Field Biology and Conservation (3)

COURSES APPROVED FOR THE LIBERAL STUDIES CREDENTIAL WAIVER PROGRAM AND OTHER MAJORS

In addition to the above general education requirements, selections from the following courses may be used for the individualized program to meet degree requirements for the Liberal Studies major.

Sci Ed 100A,B,C Science for the Nonmajor—A Laboratory Approach (3,3,3)
Sci Ed 101 Physical Science for the Nonmajor—A Laboratory Approach (5)
Sci Ed 102 Biological Science for the Nonmajor—A Laboratory Approach (4)
Sci Ed 310 Elementary Experimental Science (3)
Sci Ed 453 Life Science Concepts (3)
Env Ed 350 Field Biology and Conservation (3)

ENVIRONMENTAL EDUCATION COURSES

191 An introduction to Outdoor Biology Instruction Strategies (1)

A field course in methods used in explaining the distribution and protective features of native wildlife. Saturday field trips to the Tucker Wildlife Sanctuary required

350 Field Biology and Conservation (3)

Prerequisite: one year of college science or consent of instructor. A course for nonmajors primarily designed for prospective teachers to acquaint them with the plant and animal life of the region. In addition, the relationships between urban, suburban and wildlife regions will be investigated from a biological perspective. (2 hours lecture, 3 hours field work, 1 or more weekend field trip) (Same as Science Education 350)

355 Wildlife Photography (3)

Prerequisites: a basic understanding of photography and a 35mm camera; Communications 218 recommended. A practical course in collecting and photographing native wildlife. Infrared, ultraviolet and microscope techniques and their application to biological problems. Individual project requirement. (1 hour lecture, 4 hours activity, field trips)

454 Methods of Communicating Environmental Education (3)

Prerequisite: upper division standing. A course in curriculum development and administration practices relating to the operation of a nature interpretation center. Classroom techniques and new ideas in outdoor education are field tested and developed for classroom use. (3 hours lecture)

460 Applied Conservation (3)

Prerequisites: upper division standing with basic courses in biology; Geography 350 required of non-science majors. A survey of the history of conservation for application in teaching and nature interpretive professions. (2 hours lecture, 3 hours field work, 1 or more weekend field trip)

470 Field and Museum Interpretation Techniques (3)

Prerequisites: basic courses in biology and one specialized course. Investigation and implementation of the various techniques used in the field and museum for nature interpretation. Taxidermy, herbarium displays, plastic casting, and diorama construction will be developed. Major stress will be on individual projects. (1 hour lecture, 6 hours lab)

479A,B Naturalist Internship (3,3)
Prerequisite: open to all students, any major, with consent of instructor. Supervised in-service training working at the Tucker Wildlife Sanctuary. Ideal experience for the prospective biological science teacher, communications major and other majors interested in practical nature center experience.

570 Seminar in Elements of Nature Interpretation (3)
Prerequisite: B.A. degree. A course intended to prepare the teacher to fulfill the conservation education requirements outlined in the Milias and Stull bills (SB 1—1968; SB 243—1971). A review of the principles of biology, ecology and conservation relevant to classroom teaching. Includes techniques in classroom material preparation. May be repeated for credit.

SCIENCE EDUCATION COURSES

100A,B,C Science for the Nonmajor—A Laboratory Approach (3,3,3)
Prerequisites: 100A is prerequisite to 100B; 100C has no prerequisites; limited to students with an elementary teaching credential objective. A general education science course in which the unifying nature of the scientific enterprise and the processes of scientific inquiry are emphasized. It is laboratory experience centered, with the basic concepts of the natural sciences derived from these laboratory investigations. **A** and **B** explore the physical sciences; **C** explores the biological sciences. See Sci Ed 101 and 102 as a two-semester option for this three-semester course. Students taking 100A,B will not receive credit for 101; those taking 100C will not receive credit for 102. (Ea course 2 hours lecture, 2 hours activity)

101 Physical Science for the Nonmajor—A Laboratory Approach (5)
Students wishing to take the two-semester option of Sci Ed 100A,B,C should enroll in this course. See 100A,B above for the course description and prerequisites. Students taking this course will not receive credit for 100A,B. (3 hours lecture, 4 hours activity)

102 Biological Science for the Nonmajor—A Laboratory Approach (4)
Students wishing to take the two-semester option of Sci Ed 100A,B,C, should enroll in this course. See 100C above for the course description and prerequisites. Students taking this course will not receive credit for 100C. (2 hours lecture, 4 hours activity or field work, 1 weekend field trip)

110 Science: An Inquiry Approach (1)
Selected laboratory experience in the physical sciences is used in generating information for understanding of basic science.

310 Elementary Experimental Science (3)
Prerequisite: completion of general education natural science requirements or consent of instructor. A laboratory centered course in the physical sciences for prospective elementary schoolteachers. Emphasis on such skills as observing, classifying, recognizing space-time relations, measuring, inferring, formulating hypotheses, controlling variables and interpreting data. (2 hours lecture, 2 hours activity)

312 Processes of Science (3)
Prerequisites: 15 units of science coursework including biological and physical sciences. Methodologies, logical procedures and explanatory systems that characterize the various natural sciences will be compared and contrasted. The role of the science educator as an interpreter and practitioner of these scientific modes of inquiry will be studied and practiced. (2 hours lecture, 2 hours activity)

402 Biological Preparations (2)
Prerequisite: upper division standing with a major or minor in biology. An introduction to the problems and practices of preparing materials for teaching and research in biology. May include collection and preparation of whole organism specimens, histological specimens and media for characterization of microorganisms. (6 hours laboratory)

434 Elementary School Science—New Curricula (3)
Prerequisite: Sci Ed 310 (or equivalent) or consent of instructor. The content, philosophy and techniques of the new curricula for elementary science courses are studied. At present the course is designed to prepare teachers in various new approaches to elementary science instruction. (2 hours lecture, 2 hours activity)

441 New Curricula in Science (3)
Prerequisite: consent of instructor. Concepts in chemistry, physics and biology as related to teaching science in inner-city schools.

442 Teaching Science in the Secondary School (3)
Prerequisite: appropriate education and science coursework for credential. Objectives, methods, and materials including audiovisual instruction for teaching science will be studied. Required, before student teaching, of students presenting majors in science for the general secondary credential. (2 hours lecture, 2 hours activity)

443 Secondary Science Education—Biology (3)
Prerequisite: Sci Ed 442 (or equivalent) or consent of instructor. The teaching of biology. Special emphasis on recent curricular developments in this area. Designed to instruct teachers in the theory, content and methodology related to biological science instruction. (2 hours lecture, 1 hours activity)

444 Secondary Science Education—Chemistry (3)
Prerequisite: Sci Ed 442 (or equivalent) or consent of instructor. The teaching of chemistry. Special emphasis on recent curricular developments in this area. Designed to instruct teachers in the theory, content and methodology related to chemistry instruction. (2 hours lecture, 2 hours activity)

446 Secondary Science Education—Earth Science (3)
Prerequisite: Sci Ed 442 (or equivalent) or consent of instructor. The teaching of earth science. Special emphasis on recent curricular developments in this area. Designed to instruct teachers in the theory, content and methodology related to earth science instruction. (2 hours lecture, 2 hours activity)

449 Teacher Assistant—Science (3)
Prerequisite: commitment to science teaching as a career. Teacher assistant experience in science classes in public schools. Teachers in these schools will be largely responsible for student guidance during their assistantship.

449A Student Teaching in Science in the Secondary School (10)
See description under Division of Teacher Education

449B Student Teaching Seminar (2)
See description under Division of Teacher Education.

453 Life Science Concepts (3)
A laboratory centered course investigating representatives of animal and plant life with an environmental emphasis towards understanding the processes of science for non-science majors, liberal studies majors and prospective elementary school teachers.

470 Evolution of Scientific Ideas (3)
Prerequisite: consent of instructor. A study of how some currently held scientific concepts have evolved. Emphasis on the essential interrelation of the various scientific disciplines and their relation to contemporary cultural and intellectual influences. (3 hours lecture)

499 Independent Study (1-3)
Study of some special topic in science education, selected in consultation with instructor and carried out under his supervision. May be repeated for credit.

710 Seminar in Science Education (2)
Prerequisite: a B.A. degree, teaching credential or consent of instructor. Designed for postgraduate science students to investigate recent developments in teaching the sciences. New courses and materials for the various subject matter fields will be researched and demonstrated. Format will depend on interests and training of participants. May be repeated for credit.

749 Student Teaching in Science in the Secondary School (6)
For candidates seeking the Fisher standard credential in secondary teaching. See description and prerequisite under Division of Teacher Education.

799 Independent Study (1-3)
Prerequisite: valid teaching credential or consent of instructor. Study of some special topic in science education, selected in consultation with instructor and carried out under his supervision. May be repeated for credit.

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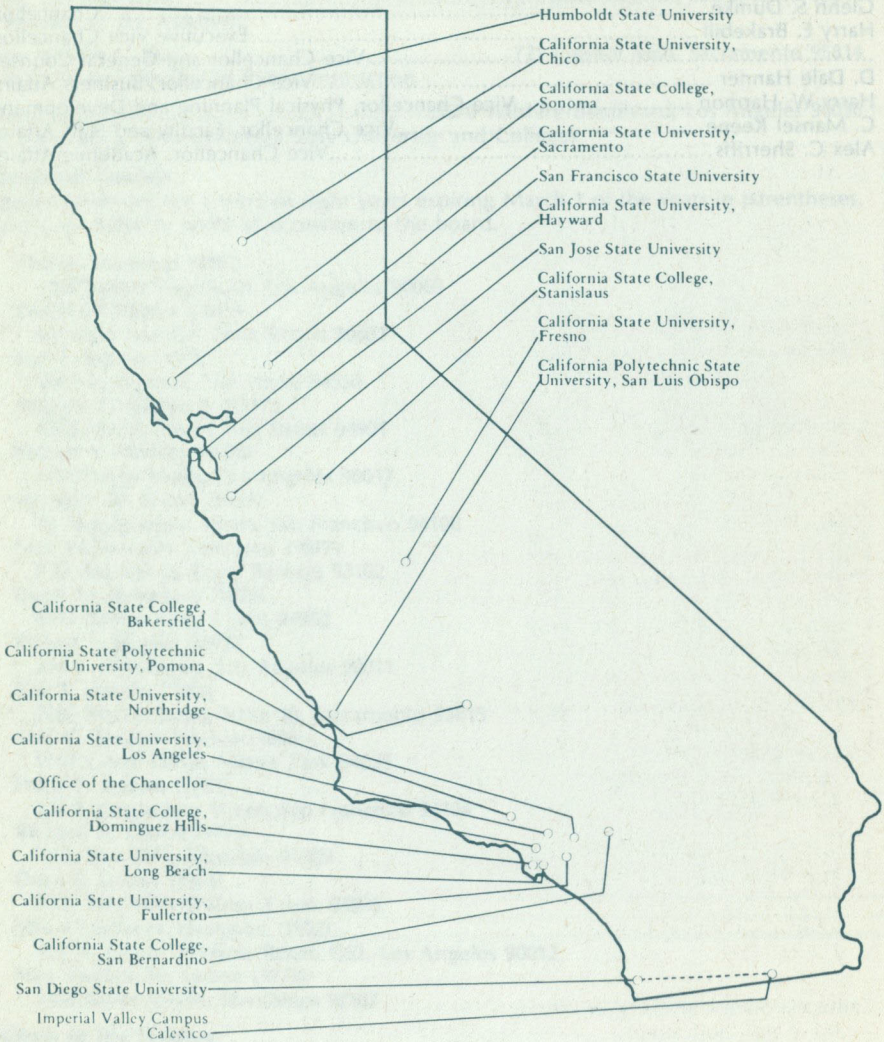

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FACULTY AND ADMINISTRATION 1975-76

(Year in parentheses indicates date of appointment as a full-time member of the faculty)

ABBOTT, ROBERT D. (1970), Associate Professor of Psychology
B.A., California Western University; M.S., Ph.D., University of Washington

ABDELWAHED, FAROUK H. (1973), Lecturer in Management
L.L.B., University of Ein Shams; M.P.A., University of Southern California; Ph.D., University of California, Los Angeles

ADAMS, GENE M. (1973), Assistant Professor of Physical Education
B.S., M.S., University of California, Los Angeles; Ph.D., Univeristy of Southern California

ADAMS, PHILLIP A.◊ (1963), Professor of Biology
B.S., University of California, Berkeley; M.A., Ph.D., Harvard University

ADAMS, RAYMOND V. (1960), Professor of Physics
B.S., Kansas State University; Ph.D., California Institute of Technology

ALEXANDER, JAMES P. (1960), Professor of Communications
B.A., M.S., University of Southern California; Ed.D., University of California, Los Angeles

ALLEN, HOLLIS P. (1960), Professor of Education, *Emeritus*
B.A., Pomona College; M.A., Ed.D., Stanford University; LL.D., Claremont Graduate School

ALLEN, ROBERT W. (1974), Lecturer in Management
B.S., M.B.A., Wayne State University

ALLEN, TERI A. (1970), Assistant Professor of Theatre
B.A., M.A., University of Iowa

ALNE, ARTHUR E. (1969), Staff Physician
B.A., M.D., University of Oregon

AMES, DENNIS B. (1960), Professor of Mathematics, *Emeritus*
B.A., M.A., Bishop's University; Ph.D., Yale Universitv

ANDERSEN, MARTIN P. (1965), Professor of Speech Communication, *Emeritus*
B.A., M.A., Ph.D., University of Wisconsin

ANDERSON, GERALDINE L. (1974), Lecturer in Linguistics
A.B., M.A., University of California, Los Angeles

ANDRIS, RONALD G. (1974), Director of the University Recreation Programs
B.S., University of Illinois; M.S., University of California, Los Angeles

APKE, THOMAS M. (1974), Assistant Professor of Management
B.S., Pennsylvania State University; J.D., Marquette University

ARANA, OSWALDO (1965), Professor of Spanish
B.A., Texas Christian University; M.A., Ph.D., University of Colorado

ARDREY, ROGER W. (1973), Associate Professor of Music
B.S., Northern Arizona University; M.M., University of Colorado; Ph.D., Catholic University of America

ARMSTRONG, CHERYL L. (1972), Assistant Professor of Afro-Ethnic Studies
B.A., Fisk University

ARNOLD, JOSEPH H., JR. (1973), Assistant Professor of Theatre
B.A., Drury College; M.A., Ph.D., University of Illinois

ASO, TAKENORI (1973), Assistant Professor of Sociology
B.S., Iowa State University; M.S., University of North Dakota

ATKIN, KENWARD L. (1974), Professor of Communications and Chair, Department of Communications
A.B., M.B.A., University of Michigan; Ph.D., Michigan State University

AUSTIN, DON D.* (1963), Professor of English
B.A., M.A., University of Redlands; Ph.D., University of Washington

BABCOCK, NATALIE C. (1973), Associate Professor of Reading Education
A.B., Benedictine Heights; M.A., Catholic University of America; Ed.D., Oklahoma State University

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BADEN, NANCY T.* (1969), Associate Professor of Spanish and Portuguese
B.A., M.A., Ph.D., University of California, Los Angeles

BAGRASH, FRANK M. (1974), Assistant Professor of Political Science
B.A., Southern Methodist University; M.A., California State University, Northridge; Ph.D., University of California, Los Angeles

BAILEY, C. IAN (1972), Assistant Professor of Physical Education
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BAILEY, ROBERT P. (1974), Visiting Assistant Professor of Quantitative Methods
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BAKER, A. ALBERT, JR. (1973), Associate Professor of Library Science
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BAKER, DONALD R. (1972), Assistant Professor of Sociology
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BAKKEN, GORDON M. (1969), Director of Faculty Affairs and Records; and Associate Professor of History
B.S., M.S., Ph.D., J.D., University of Wisconsin

BALDWIN, SIDNEY (1967), Professor of Political Science
B.A., Wesleyan University; M.P.A., Ph.D., Syracuse University

BANDY, D. DALE (1972), Associate Professor of Accounting
B.S.B.A., University of Tulsa; M.B.A., University of Arkansas; C.P.A.; Ph.D., University of Texas

BANKS, DORIS H. (1967), Professor of Library Science and Director, Division of Library Science
B.S., New York State Teachers College; M.S.L.S., Syracuse University; M.P.A., University of Southern California

BANKS, KATHERINE J. (1973), Activities Adviser, Student Services
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BARATH, ROBERT M. (1974), Associate Professor of Marketing
B.B.A., Cleveland State University; D.B.A., Kent State University

BARDEN, DREW S. (1974), Lecturer in Economics
A.B., Whitman College; M.A., University of California, Riverside

BARISH, NATALIE (1966), Professor of Biology
A.B., Goucher College; M.A., Indiana University; Ph.D., Ohio State University

BARNES, BETTY J. (1972), Assistant Professor of Education and Coordinator of Elementary Education
B.A., Pomona College; M.A., Ph.D., Claremont Graduate School

BARNETT, DONALD J. (1970), Assistant Professor of Accounting
A.B., M.B.A., University of Michigan; J.D., Harvard University Law School

BARON, AILEEN G.* (1973), Assistant Professor of Anthropology
Ph.B., University of Chicago; B.A., California State University, Fullerton; M.A., University of California, Riverside

BARON, ROBERT A. (1973), Assistant Professor of Art
B.A., Harpur College, State University of New York; M.A., Institute of Fine Arts, New York University

BARON, WILLIAM D. (1972), Director, Academic Services and Director, Computer Assisted Registration System
M.S., B.A., University of Southern California

BARRETT, JEAN A. (1963), Professor of Physical Education
B.S., Cortland State Teachers College; Ed.M., Ed.D., University of Buffalo

BARTHELS, KATHARINE M. (1974), Assistant Professor of Physical Education
B.S., University of California, Los Angeles; M.A., University of California, Santa Barbara; Ph.D., Washington State University

BARTIN, NORMA G. (1973), Associate Professor of Reading Education
B.A., M.A., State University of New York College at Fredonia; Ed.D., State University of New York at Buffalo

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* On leave spring 1975

BATES, MARILYN M. (1966), Professor of Education
B.A., M.A., California State University, Long Beach; Ph.D., University of Southern California

BAYES, JOHN R. (1974), Assistant Professor of Political Science
A.B., M.P.A., Ph.D., University of California, Los Angeles

BAYLESS, JOHN A. (1974), Lecturer in Management
B.A., University of Southern California

BEAUBIER, EDWARD W. (1975), Lecturer in Education
B.S., M.S., M.E., Ed.D., University of Southern California

BECK, WARREN A. (1961), Professor of History
B.A., M.A., Wayne University; Ph.D., Ohio State University

BECKER, ERNEST A. (1959), Director of Placement and Professor of Philosophy
B.A.,Amherst College; B.D., Hartford Theological Seminary; M.A., Ed.D., University of Southern California

BECKETT, RALPH L., SR. (1970), Associate Professor of Speech Communication
A.B., M.A., Ph.D., University of Southern California

BECKMAN, WALTER F. (1971), Professor of Education
B.A., Northern Illinois University; M.A., Northwestern University; Ph.D., Claremont Graduate School

BEDELL, JOHN W. (1969), Associate Professor of Sociology and Chair, Sociology Department
A.B., Franklin and Marshall College; M.A., Ph.D., Case Western Reserve University

BEDNAR, DICK D., JR. (1973), Lecturer in Finance
B.A., M.B.A., University of Oklahoma

BELL, ARTHUR H. (1973), Assistant Professor of English
B.A., Concordia College; M.A., University of Southern California; M.A., Ph.D., Harvard University

BELL, CHARLES G. (1964), Professor of Political Science
B.A., Pomona College; M.A., Ph.D., University of Southern California

BELL, TONY (1968), Associate Professor of Sociology
B.A., M.A., University of California, Santa Barbara; Ph.D., University of Texas

BELL, WILLIAM E. (1969), Professor of Marketing and Acting Chair, Marketing Department
B.A., M.B.A., D.B.A., Michigan State University

BELLOLI, ROBERT C. (1968), Associate Professor of Chemistry
B.S., St. Louis University; Ph.D., University of California, Berkeley

BELNA, CHARLES L. (1974), Lecturer in Mathematics
B.A., University of Dayton; M.S., Ph.D., Michigan State University

BELLOT, LELAND J. (1964), Dean, School of Humanities and Social Sciences; and Professor of History
B.A., Lamar State College; M.A., Rice Institute; Ph.D., University of Texas

BENGTSON, KURT L.* (1967), Associate Professor of Physics and Acting Chair, Physics Department, fall 1974
B.S., M.A., Wayne State University; Ph.D., University of California, Riverside

BENSIMON, LINDA A. (1970), Associate Professor of French
B.A.,Kalamazoo College; M.A., Ph.D., University of California, Los Angeles

BENSON, RUSSELL V. (1965), Professor of Mathematics
B.E.E., Cornell University; M.A., Ph.D., University of Southern California

BERFIELD, B. DAVID (1971), Assistant Professor of Music
B.M., Oberlin Conservatory of Music; M.M., D.M.A., University of Southern California

BERG, DENNIS F. (1970), Associate Professor of Sociology
B.A., M.A., California State University, Fullerton; Ph.D., University of Southern California

BERG, WILLIAM M.[1] (1972), Assistant Professor of Communications
B.S., M.S., University of Oregon

BHAUMIK, GORA (1972), Assistant Professor of Quantitative Methods
B.E., University of Calcutta; M.S., Ph.D., University of Texas

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* On leave spring 1975

[1]- Fall semester only

BICKNER, MEI LIANG (1974), Associate Professor of Management
B.A., M.B.A., Ph.D., University of California, Los Angeles

BIGELOW, RALPH EMERSON (1966), Dean of Admissions and Records; and Associate Professor
B.Mus., M.Mus., University of Rochester; Ph.D., University of Southern California

BLEAMASTER, LESLIE F., II (1973), Instructor in Physical Education; M.S., California
B.A., California State University, Long Beach; M.S., California State University, Fullerton

BLEND, HARVEY (1963), Professor of Physics
B.S., University of Texas; M.S., Ph.D., University of California, Los Angeles

BLOOM, GARY S. (1971), Assistant Professor of Quantitative Methods
A.B., Oberlin College; M.S., University of Arizona

BOARINO, GERALD L. (1965), Professor of Spanish
B.A., M.A., Ph.D., University of California, Berkeley

BOOTH, HERBERT W. (1967), Associate Professor of Speech Communication
B.A., M.A., California State University, Los Angeles; Ph.D., University of Southern California

BOSTON, ROSEMARY (1969), Associate Professor of English
B.A., Baldwin-Wallace College; A.M., University of Pennsylvania; Ph.D., University of Washington

BOURGOIN, SUSAN L. (1973), Lecturer in Engineering
B.S.E., M.S.E., Arizona State University

BOYD, JOHN M. (1973), Assistant Professor of Theatre
B.A., University of Redlands

BOYLE, CHARLES T. (1974), Director of Titan Athletic Foundation
B.S., University of Colorado; M.A., University of Tulsa

BOYNTON, MARYANNA C. (1970), Associate Professor of Economics
B.A., University of Texas; M.A., Ph.D., University of California, Riverside

BOYUM, KEITH O. (1972), Assistant Professor of Political Science
B.A., University of North Dakota; M.A., Ph.D., University of Minnesota

BRADSHAW, L. JACK (1965), Professor of Biology
B.A., Ph.D., Stanford University

BRAGG, MARY JANE (1966), Senior Assistant Librarian and Coordinator, Reference Section
B.A., Occidental College; M.A., Columbia University; M.L.S., University of California, Los Angeles

BRATTSTROM, BAYARD H. (1960), Professor of Zoology
B.S., San Diego State University; M.A., Ph.D., University of California, Los Angeles

BREESE, LAUREN W. (1965), Associate Professor of History
B.A., Pomona College; M.A., Ph.D., University of California, Los Angeles

BREWSTER, STEVEN E. (1975), Assistant Librarian
B.A., Pomona College; M.Div., American Baptist Seminary; M.S.L.S., University of Southern California

BRIGHT, DONALD B. (1967), Professor of Biology and Chair, Biological Science Department
A.B., M.S., Ph.D., University of Southern California

BRIL, PATRICIA L. (1971), Assistant Librarian
B.A., University of California, Irvine; M.L.S., University of Southern California

BRITTON, GEORGE T., III (1972), Assistant Professor of Geography
B.A., Middlebury College; M.A., Indiana University

BROCK, RICHARD R. (1973), Associate Professor of Engineering and Chair, Civil Engineering/Engineering Mechanics Faculty
B.S., M.S., University of California, Berkeley; Ph.D., California Institute of Technology

BROCKMANN, LOUIS O. (1963), Professor of Education, *Emeritus*
B.A., M.A., Ph.D., University of Wisconsin

BRONDI, DANIEL J. (1972), Assistant Professor of French
B.A., M.A., Indiana State University

BROWER, JONATHAN J.◊ (1972), Assistant Professor of Sociology
B.S., Ph.D., University of California, Santa Barbara; M.A., California State University, Northridge

BROWN, DANIEL A. (1972), Assistant Professor of Religious Studies
S.T.B., S.T.L., Marianum, Rome; Ph.D., Catholic University

◊ On leave fall 1974

BROWN, GERALD G., III (1968), Assistant Professor of Quantitative Methods
B.A., M.B.A., California State University, Fullerton; Ph.D., University of California, Los Angeles

BROWN, GILES T. (1960), Dean of Graduate Studies and Professor of History
B.A., San Diego State University; M.A., University of California, Berkeley; Ph.D., Claremont Graduate School

BROWN, MICHAEL E. (1967), Associate Professor of Political Science and Coordinator, Human Services Program
B.A., California State University, Long Beach; Ph.D., University of Southern California

BROWNING, ROBERTA F. (1970), Psychometrist, Office of Testing and Research
B.A., Bucknell University; M.S., California State University, Fullerton

BRUGALETTA, JOHN J. (1970), Associate Professor of English
B.A., M.A., Arizona State University; Ph.D., University of Missouri

BRYDEN, JOHN H. (1961), Professor of Chemistry
B.S., College of Idaho; M.S., California Institute of Technology; Ph.D., University of California, Los Angeles

BUCHMAN, EDWIN O. (1968), Associate Professor of Mathematics
B.S., California Institute of Technol gy; Ph.D., University of California, Los Angeles

BUCK, CHARLES W. (1964), Director of Testing and Research
B.A., Occidental College; M.A., University of Oregon; Ph.D., Columbia University

BUCK, J. VINCENT (1974), Assistant Professor of Political Science
B.A., University of California, Berkeley; M.A., Ph.D., Stanford University

BUCKLEY, CHRISTOPHER P. (1971), Assistant Professor of Earth Science
B.S., California State University, Long Beach; M.S., San Jose State University; Ph.D., Rice University

BUCUZZO, JOSEPH J. (1970), Associate Professor of Mathematics
B.S., M.A., University of Massachusetts; Ph.D., University of Notre Dame

BUESO, ALBERTO T. (1974), Lecturer in Finance
B.S., University of Illinois; M.B.A., California State University, Fullerton

BURK, JACK H. (1971), Associate Professor of Biology
B.S., Fort Lewis College; Ph.D., New Mexico State University

BURKE, MAX W. (1960), Director of Placement Services and Associate Professor of Education, *Emeritus*
B.A., University of Iowa; B.D., Colgate-Rochester Divinity School

CALDWELL, ROY C. (1973), Head Track Coach
B.S., M.A., Western Michigan University

CALHOUN, FENTON E. (1970), Associate Professor of Communications
B.A., Michigan State University; M.A., Ph.D., Wayne State University

CALLAHAN, PATRICK J. (1974), Assistant Football Coach
B.A., M.A., California State University, Fresno

CALLISON, WILLIAM L. (1974), Professor of Education and Chair, Division of Special Programs
B.A., Occidental College; Ph.D., Stanford University

CAPUNE, W. GARRETT (1969), Associate Professor of Criminal Justice and Coordinator of Criminal Justice Program
B.A., M.Crim., D.Crim., University of California, Berkeley

CARDENAS, ISAAC (1974), Associate Professor of Chicano Studies and Chair, Chicano Studies Department
B.A., St. Mary's University, San Antonio; M.A., Texas A&I University; Ed.D., University of Massachusetts

CARLSON, GAYLEN R. (1973), Assistant Professor of Science Education
B.A., Buena Vista College; M.A., Drake University; Ph.D., The University of Iowa

CARR, EDWIN R. (1960), Professor of Education and Economics, *Emeritus*
B.A., Jamestown College; M.A., Columbia University; Ph.D., University of Minnesota

CARTLEDGE, SAMUEL J. (1966), Associate Professor of French and Chair, Department of Foreign Languages and Literatures
A.B., King College; Ph.D., Yale University

CASTELLANOS, GLORIA G. (1970), Associate Professor of Mathematics Education
Bachelor's Degree, Pre-University Institute, Camaguey, Cuba; M.A., California State University, Fullerton; Doctor's Degree, University of Havana

CHADWICK, CAROLE S. (1967), Associate Professor of Music
B.A., University of Delaware; M.A., Columbia University Teachers College; D.M.A., University of Southern California

CHAPMAN, ROBERT L. (1973), Lecturer in Management
B.S.M.E., M.S., University of North Dakoa;; Ph.D., University of Chicago

CHARLES, ROBERT L., III (1975), Lecturer in Speech Communication
B.A., California State University, Fullerton; M.S., Illinois State University

CHARLTON, F. ANDREW (1965), Associate Professor of Music
B.M.Ed., Pepperdine College; M.A., California State University, Los Angeles

CHEN, MILTON M.# (1972), Assistant Professor of Quantitative Methods
B.S., National Chengchi University; M.B.A., De Paul University, Chicago; Ph.D., New York University

CHIANG, GEORGE C. (1967), Professor of Engineering
B.S., National Taiwan University; M.S., University of Southern California; Ph.D., Stanford University

CHIÁNG, VERONICA T. (1968), Assistant Librarian
B.A., Tamkang College of Letters and Science; M.S.L.S., University of Southern California

CHING, ALVIN K. (1967), Associate Professor of Art
B.A., California State University, Long Beach; M.F.A., Cranbrook Academy of Art

CHOW, WEN MOU (1969), Professor of Quantitative Methods
B.S., Chiao-Tung University; Sc.D., Massachusetts Institute of Technology

CHRISTENSEN, LAWRENCE L. (1972), Assistant Professor of Anthropology
B.A., M.A., University of California, Los Angeles

CHU, KWANG-WEN (1970), Associate Professor of Economics
B.A., National Taiwan University; M.A., University of Minnesota; Ph.D., University of California, Los Angeles

CLAPP, MICHAEL H. (1969), Associate Professor of Mathematics and Chair, Mathematics Department
A.B., Occidental College; M.A., M.S., Ph.D., University of Washington

CLAPPER, RONALD E. (1974), Lecturer in English
B.A., M.A., Ph.D., University of California, Los Angeles

COFFER, WILLIAM E. (1973), Associate Professor of American Indian Studies
B.A., M.A., Arizona State University

COHN, GEORGE I. (1968), Professor of Engineering
B.S.E.E., California Institute of Technology; M.S., Ph.D., Illinois Institute of Technology

COKER, CHARMAINE L. (1973), Activities Adviser, Student Services
B.A., California State University, Fullerton

COLEMAN, JACK W. (1968), Dean, School of Business Administration and Economics and Professor of Accounting
B.S., Kansas University; M.B.A., University of Michigan; D.B.A., Indiana University

COLGAN, FRED R. (1965), Professor of Management
B.S., M.S., Ph.D., University of Southern California

COLLEA, FRANCIS P. (1970), Associate Professor of Science Education
B.Engr., State University of New York; M.S., Ph.D., Syracuse University

COLLETTO, JAMES M.[1] (1975), Head Football Coach
B.S., University of California, Los Angeles

COLMAN, RONALD W.# (1964), Associate Professor of Quantitative Methods and Coordinator, Computer Science Program
B.A., University of California, Los Angeles

CONANT, JAMES C. (1971), Associate Professor of Management
A.B., Whittier College; Ph.D., University of Southern California

CONDON, MARY G. (1969), Coordinator, Educational Placement
B.S., Iowa State University

On leave 1974-75
[1]Beginning Spring 1975

COOKSEY, JOHN M. (1974), Assistant Professor of Music
Bach.M.Ed., Florida State University; M.S., Ed.D., University of Illinois

COOPER, JOHN D. (1970), Associate Professor of Earth Science
B.S., University of Michigan; M.A., Ph.D., The University of Texas

COOPERMAN, EDWARD L.◊ (1967), Professor of Physics and Chair, Physics Department
B.S., Lehigh University; Ph.D., The Pennsylvania State University

COPP, CAROL M. (1965), Associate Professor of Sociology
B.A., M.A., University of Michigan; Ph.D., University of Colorado

COPPEL, LYNN M. (1968), Senior Assistant Librarian and Coordinator, Periodicals Section
B.S., University of Arizona; M.A., University of Denver

COPPOLINO, IDA S. (1960), Professor of Education
B.S., University of Utah; M.A., New York University; Ed. D., University of California, Los Angeles

COREY, GERALD F. (1972), Associate Professor of Interdisciplinary Studies
B.A., M.A., Loyola University of Los Angeles; Ed.D., University of Southern California

CORK, JAMES A. (1972), Assistant Professor of Accounting
B.S., M.B.A., University of Michigan; C.P.A.

CORMAN, EUGENE J. (1966), Associate Professor of Accounting
B.Sc., M.B.A., University of Santa Clara; C.P.A.; D.B.A., University of Southern California

COX, MIRIAM S. (1967), Professor of English
B.S., Utah State University; M.S., University of Idaho

COWIN, EILEEN F. (1975), Lecturer in Art
B.S., State University of New York College at New Paltz; M.S., Institute of Design, Chicago

COZBY, PAUL C. (1972), Assistant Professor of Psychology
B.A., University of California, Riverside; Ph.D., University of Minnesota

CRABBS, JACK A., JR. (1973), Assistant Professor of History
B.A., State University of Iowa; M.S.F.S., Georgetown University; Ph.D., University of Chicago

CRARY, DANIEL R. (1974), Assistant Professor of Speech Communication
B.A., M.A., University of Kansas; B.D., Golden Gate Theological Seminary

CRONQUIST, JOHN (1967), Associate Professor of Philosophy
A.B., Duke University; A.M., Harvard University; Ph.D., Stanford University

CROWLEY, RONALD J.# (1965), Professor of Physics
B.S., M.A., Ph.D., University of Southern California

CROY, HAZEL M. (1960), Professor of Education
B.A., M.A., University of Redlands; Ed.D., University of California, Los Angeles

CUMMINGS, SHERWOOD P. (1963), Professor of English
B.S., University of Illinois; M.A., Ph.D., University of Wisconsin

CURRAN, DARRYL J.* (1967), Associate Professor of Art
B.A., M.A., University of California, Los Angeles

CURRIE, DOROTHY H. (1973), Lecturer in Library Science
B.A., Washington State University; B.S., University of Southern California; M.S., Columbia University

CURRIE, MARY V. (1974), Admissions Counselor
B.A., M.S., California State University, Long Beach

CURRY, ROBERT L. (1972), Assistant Professor of Mathematics
B.A., Bradley University; M.S., Ph.D., University of Illinois

CUSICK, JAMES W. (1961), Professor of Education
B.S., Montana State College; M.A., Washington State University; Ph.D., University Minnesota

D'ANGELO, BARBARA B. (1973), Assistant Professor of Interdisciplinary Studies
B.A., Reed College; M.S., Ph.D., Washington State University

DAVENPORT, CALVIN A. (1969), Professor of Microbiology
B.S., Virginia State College; M.S., Ph.D., Michigan State University

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◊ On leave fall 1974
On leave 1974-75
* On leave spring 1975

DAVIS, BARBARA E. (1960), Librarian and Chair, Reader Services Department
B.S., Carnegie Institute of Technology; B.Mus., University of Wisconsin; M.L.S., Carnegie Library School

de GRAAF, LAWRENCE B. (1959), Professor of History and Coordinator, Master of Arts in Social Sciences Program
B.A., Occidental College; M.A., Ph.D., University of California, Los Angeles

DEGTJAREWSKY, MARINA (1974), Lecturer in Russian
B.A., M.A., University of California, Los Angeles

de MALLAC, GAIL (1974), Lecturer in French
B.A., Hunter College; M.A., Radcliffe Graduate School

DENNO, RAYMOND E. (1961), Professor of Education and Consultant in Audiovisual Communications, *Retired*
B.A., University of California, Santa Barbara; M.S., University of Southern California; Ed.D., University of California, Los Angeles

DEPEW, DAVID J. (1974), Lecturer in Philosophy
B.A., St. Mary's College of California; M.A., San Diego State University

de RIOS, MARLENE D.# (1969), Associate Professor of Anthropology
B.A., Queens College; M.A., New York University; Ph.D., University of California, Riverside

DIAZ, MODESTO M. (1970), Associate Professor of Spanish
B.A., Colby College; M.A., Ph.D., University of Illinois

DICKSON, DAVID L. (1972), Lecturer in Education
B.A., University of California, Los Angeles; M.A., Ph.D., University of Southern California

DIEB, RONALD K. (1969), Associate Professor of Theatre
B.A., M.A., Texas Christian University; Ph.D., University of Denver

DIETZ, JAMES L. (1973), Assistant Professor of Economics
B.S., California State Polytechnic University, Pomona; M.A., Ph.D., University of California, Riverside

DIETZ, NAOMI G. (1960), Professor of Art
B.S., Whitworth College; M.A., Teachers College, Columbia University

DIETZER, M'LOU (1972), Assistant Professor of Music
B.A., M.A., California State University, Los Angeles; D.M.A., University of Southern California

DIPPEL, GENE H. (1970), Director of Computer Center
B.B.A., The University of Texas; M.S., Texas A&M University

DITTMAN, ROGER R. (1964), Professor of Physics
B.A., University of California, Santa Barbara; M.S., University of Delaware; Ph.D., University of Sou? California

DOANE, KENNETH R. (1960), Director of Institutional Research and Professor of Education
B.S., Wisconsin State College, La Crosse; M.S., Ph.D., University of Wisconsin

DOLP, FRANZ# (1968), Associate Professor of Economics
B.S., Yale University; Ph.D., University of California, Berkeley

DONDIS, ERNEST H.* (1966), Professor of Psychology
B.A., M.A., California State University, Long Beach; Ph.D., University of California, Berkeley

DONOGHUE, MILDRED R. (1962), Professor of Education
B.A., University of Michigan; M.A., University of Detroit; Ed.D., University of California, Los Angeles

DORER, FRED H.# (1967), Professor of Chemistry
B.S., California State University, Long Beach; Ph.D., University of Washington

DUBIN, LINDA F.# (1971), Associate Professor of Biology
B.A., University of Pennsylvania; M.A., Ph.D., Bryn Mawr College

DUBIN, STUART B.# (1970), Associate Professor of Physics
B.A., Yale College; Ph.D., Massachusetts Institute of Technology

DUERR, EDWIN (1964), Professor of Theatre, *Retired*
B.A., University of California, Berkeley; M.A., Cornell University

On leave 1974-75
* On leave spring 1975

DUNN, PAUL H. (1973), Assistant Professor of Botany
B.S., Weber State College; Ph.D., University of Hawaii

DYE, ROBERT L. (1973), Head Basketball Coach
B.S., Idaho State University

EARICK, ARTHUR D. (1960), Professor of Geography and Director, Urban Studies Program
B.A., Indiana University; M.A., Ph.D., University of Michigan

EBERSOLE, PETER D. (1967), Associate Professor of Psychology
A.B., Swarthmore College; Ph.D., University of California, Los Angeles

EDEN, DON (1974), Assistant Professor of Chemistry
B.S., University of Michigan; Ph.D., Massachusetts Institute of Technology

EDMONDSON, BEN C. (1970), Professor of Quantitative Methods
B.S., Purdue University; M.B.A., Ph.D., Case Western Reserve University

EDWARDS, RON L. (1973), Assistant Professor of Physical Education
B.S., Utah State University; M.A., Ed.D., Stanford University

EDWARDS-EVANS, STEPHANIE E.* (1973), Assistant Professor of Education
B.A., M.A., California State University, Los Angeles

EGBERT, RUSSELL J. (1968), Professor of Mathematics
B.A., University of California, Riverside; M.S., Ph.D., University of Arizona

EHMANN, GERHARD E. (1959), Professor of Education
B.A., Occidental College; M.A., Ed.D., University of California, Los Angeles

EILERS, H. PETER, III (1973), Assistant Professor of Geography
B.A., M.A., San Jose State University; Ph.D., Oregon State University

ELENBAAS, JACK D. (1969), Associate Professor of History
B.A., Hope College; M.A., Ph.D., Wayne State University

EL-SADEN, MUNIR R. (1966), Professor of Engineering
B.Sc., University of Denver; M.S., Ph.D., University of Michigan

EMRY, ROBERT A. (1973), Assistant Professor of Speech Communication
B.S., M.A., University of South Dakota

ENELL, GEORGE O. (1965), Associate Professor of Speech Communication
B.A., Pomona College; B.D., Fuller Theological Seminary; M.A., Ph.D., University of Southern California

ENGSTROM, WAYNE N. (1971), Associate Professor of Geography
B.S., M.S., Illinois State University; Ph.D., University of Wisconsin

ESSER, ALFRED F. (1973), Assistant Professor of Chemistry
B.S., M.S., Ph.D., Johann Wolfgang Goethe University

ETUE, GEORGE E. (1963), Associate Professor of History
B.A., Union College; M.A., Ph.D., University of California, Berkeley

EVANS, DAVID H., JR. (1969), Assistant Professor of Anthropology
A.B., Harvard College; M.A., University of California, Los Angeles

EVJENTH, HENRY A. (1964), Professor of Art
B.A., M.A., California State University, Long Beach

EWING, ROBERT N. (1969), Assistant Professor of Art
B.A., University of California, Los Angeles; M.A., Columbia University

FARMER, MARJORIE M. (1973), Lecturer in Theatre
B.A., M.A., California State University, Fullerton

FARRER, JOHN A., III (1971), Assistant Professor of Music
A.B., M.A., University of Michigan; Diploma in Conducting, Mozarteum, Salzburg

FASHEH, ISSA I. (1966), Assistant Librarian
B.A., University of California, Los Angeles; M.L.S., University of Southern California

FECAROTTA, ROBERT G. (1970), Budget Officer
B.S., California State University, Long Beach

FEINGOLD, HELAINE, J. (1969), Associate Professor of Sociology
B.S., University of Wisconsin; M.S., M.A., Ph.D., University of California, Los Angeles

FELDMAN, DAVID M.# (1964), Professor of Linguistics
B.A., University of Southern California; M.A., Ph.D., Cornell University

FELDMAN, ROBERT S.# (1964), Professor of History
B.S., Illinois State University; M.A., Ph.D., Indiana University

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On leave 1974-75
* On leave spring 1975

FENTON, DENIS J. (1972), Director, Library Learning Assistance and Resources Center
B.A., M.A., University of California, Los Angeles

FERARU, ANNE T. (1966), Professor of Political Science
B.A., Wilson College; M.A., Columbia University; Docteur de l'universite, University of Lyons

FESSENDEN, SETH A. (1959), Professor of Speech, *Emeritus*
B.S., M.S., University of Illinois; Ph.D., New York University

FIERMAN, MORTON C. (1963), Professor of Religious Studies
B.A., Case Western Reserve University; M.H.L., D.D., Hebrew Union College; M.A., Tulsa University; Ed.D., Arizona State University

FIMBRES, NORMA J.[1] (1972), Associate Professor of Chicano Studies
B.A., M.A., California State University, Los Angeles

FINLAYSON, BARBARA J. (1974), Assistant Professor of Chemistry
B.Sc., Trent University; M.S., Ph.D., University of California, Riverside

FIRMAN, CATHARINE K. (1974), Lecturer in English
B.S., Skidmore College; M.A., Claremont Graduate School

FISCHER, HERTA D.[2] (1967), Associate Librarian and Chair, Processing Services Department
B.A., University of Berlin; M.A., University of Denver

FISHER, ALAN A. (1973), Assistant Professor of Economics
B.A., M.A., University of California, Los Angeles; Ph.D., University of California, Berkeley

FISHER, MARGARET L. (1974), Lecturer in Sociology
B.A., M.A., California State University, Fullerton

FITCH, MARGARET H. (1969), Associate Professor of Psychology
B.A., Romona College; Ph.D., University of California, Riverside

FLEMING, MARY M. (1974), Assistant Professor of Accounting
B.S., M.B.A., [1] B.S., M.B.A., University of California, Los Angeles; C.P.A.

FLICKEMA, THOMAS O. (1966), Professor of History and Director, Latin American Studies Program
A.B., Hope College; M.A., Ph.D., Wayne State University

FLOCKEN, JOYCE M. (1969), Associate Professor of Speech Communication
B.A., M.A., California State University, Long Beach; Ph.D., University of Southern California

FOSTER, JULIAN F.S. (1963), Professor of Political Science
B.A., M.A., New College, Oxford; Ph.D., University of California, Los Angeles

FRANCO, ARTURO (1971), Associate Dean of Student Services and Director of Educational Opportunity Programs
B.A., California State University, Los Angeles

FRANKEL, DEXTRA L. (1969), Associate Professor of Art
Special Art, California State University, Long Beach and Los Angeles Valley College

FRAZEE, CHARLES A. (1970), Associate Professor of History and Coordinator, Russian Area Studies Program
A.B., St. Meinrad College; M.A., Catholic University; Ph.D., Indiana University

FRIEL, JAMES O. (1973), Assistant Professor of Mathematics
A.B., University of Michigan; M.A., Wayne State University; Ph.D., University of New Mexico

FRIEND, GEORGE L. (1964), Professor of English
B.A., Miami University; M.A., Ph.D., University of Illinois

FUENTES, DAGOBERTO (1969), Associate Professor of Chicano Studies
B.A., M.A., California State University, Los Angeles; Ph.D., University of Southern California

FUKASAWA, GEORGE T. (1974), Lecturer in Communications
University of California, Los Angeles

FULLER, CYNTHIA (1967), Associate Professor of English
B.A., University of Arizona; M.A., Ph.D., University of Massachusetts

FULTON, M. WILLIAM (1965), Associate Professor of Physical Education
B.A., M.A., California State University, Los Angeles; H.S.D., Indiana University

[1] Reassigned 1974-75

[2] On leave December 2, 1974 to April 29, 1975

FUSZEK, RITA M. (1964), Professor of Music
B.M., Butler University; M.M., Michigan State University
GAFFEY, W. TRACY (1973), Associate Professor of Education
B.A., University of Nevada; M.S., M.Ed., Ed.D., University of Southern California
GALA, BASIL E. (1973), Assistant Professor of Quantitative Methods
B.S., California State University, Los Angeles; M.S.E.S., California Institute of Technology; Ph.D., University of Southern California
GALLO, CHARLES L. (1974), Assistant Football Coach
B.S. United States Military Academy; M.A., Columbia University Teachers College
GANNON, GERALD E. (1973) Assistant Professor of Mathematics Education
B.S., Rockhurst College; M.A., Kansas State Teachers College; Ed.D., University of Northern Colorado
GARBER, STEPHEN M. (1969), Associate Professor of English
A.B., A.M., Boston University; Ph.D., University of Illinois
GARD, DONALD H. (1967), Professor of Religious Studies and Chair, Religious Studies Department
B.A., University of California, Berkeley; M.Div., Princeton Theological Seminary; M.A., Ph.D., Princeton University
GARRIDO, AUGUST E., JR. (1972), Head Baseball Coach
B.A., California State University, Fresno; M.A., California Polytechnic State University, San Luis Obispo
GAUNTT, ROBERT J. (1969), Associate Professor of Mathematics
B.S., M.S., Purdue University; Ph.D., University of Maryland
GEORGE, GLENN (1972), Assistant Professor of Geography
B.A., University of Bristol; Ph.D., University of California, Berkeley
GERBER, BARRY E. (1970), Assistant Professor of Political Science
B.A., M.A., University of California, Los Angeles
GETHAIGA, WACIRA (1969), Associate Professor of Afro-Ethnic Studies and Chair, Afro-Ethnic Studies Department
B.A., Occidental College; M.A., Chapman College; Ph.D., Claremont Graduate School
GIACUMAKIS, GEORGE JR. (1963), Professor of History and Chair, History Department
B.A., Shelton College; M.A., Ph.D., Brandeis University
GIANOS, PHILLIP L. (1971), Assistant Professor of Political Science
A.B., San Diego State University; Ph.D., University of California, Riverside
GILBERT, LEON J. (1970), Associate Professor of German
B.A., M.A., Ph.D., University of Colorado
GILBERT, RICHARD C.◊ (1963), Professor of Mathematics
B.A., Harvard College; Ph.D., University of California, Los Angeles
GILDE, JOSEPH M. (1965), Professor of English
B.A., Syracuse University; M.A., Ph.D., University of Chicago
GILMAN, RICHARD (1972), Associate Professor of Management
B.S., Yale University; M.B.A., D.B.A., University of Southern California
GILMORE, JAMES L. (1968), Professor of Education
B.A., Willamette University; M.S., University of Oregon; Ph.D., Stanford University
GOLDIN, KENNETH D. (1972), Associate Professor of Economics
A.B., Princeton University; Ph.D., Stanford University
GOLDSMITH, KENNETH M. (1971), Associate Professor of Music
B.M., George Peabody College; M.A., Stanford University
GOOD, KAYE M. (1963), Professor of Speech Communication
B.A., Washington State College; M.A., California State University, Long Beach
GOODE, CARMEL K. (1971), Assistant Professor of Art
B.A., California State University, Long Beach
GOUGH, CHESTER R. (1972), Assistant Professor of Library Science
B.A., Providence College; M.S.L.S., Columbia University
GRANELL, LEE E. (1960), Professor of Speech Communication and Chair, Speech Communication Department
B.A., San Diego State University; M.A., Ph.D., University of Southern California

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◊ On leave fall 1974

GRANT, SHIRLEY M. (1974), Acting Director of Relations with Schools
B.A., M.S., California State University, Long Beach
GRAVES, LEVERN F. (1960), Professor of Economics
B.A., Ph.D., University of California, Berkeley
GRAVES, MORRIS A. (1974), Activities Adviser, Student Services
B.A., Pitzer College; M.A., Claremont Graduate School
GRAY, ARLENE P. (1974), Lecturer in Nursing Education
B.S., M.S., Loma Linda University
GRAY, J. JUSTIN (1961), Dean, School of the Arts and Professor of Music
B.Mus., University of Michigan; M.Mus., Eastman School of Music; D.Mus., University of Southern California
GREENWOOD, JOAN V. (1963), Professor of English
B.A., Wellesley College; M.A., Ph.D., Stanford University
GRODY, HARVEY P. (1969), Associate Professor of Political Science
A.B., M.A., University of California, Berkeley; Ph.D., University of California, Los Angeles
GUERTNER, GARY L. (1974), Assistant Professor of Political Science
B.A., M.A., University of Arizona; Ph.D., Claremont Graduate School
GUTWEILER, ADELINA L. (1972), Lecturer in Reading Education
B.A., Elon College; M.S., California State University, Fullerton
HAAKER, ANN M. (1965), Professor of English
B.A., The University of Texas; M.A., Claremont Graduate School; Ph.D., Shakespeare Institute, University of Birmingham
HALL, JEAN R.# (1970), Assistant Professor of English
B.A., Pomona College; M.A., Ph.D., University of California, Riverside
HANAUER, ERIC S. (1966), Associate Professor of Physical Education
B.S., George Williams College; M.S., University of California, Los Angeles
HANCOCK, DEBORAH OSEN (1969), Associate Professor of Education
B.A., California State University, Long Beach; M.S., Ph.D., University of Southern California
HANES, TED L. (1969), Professor of Botany
B.A., M.S., Ph.D., University of California, Los Angeles
HANNES, GERALD P. (1971), Assistant Professor of Geography
B.S., Bowling Green State University; M.S., Ball State University; Ph.D., University of Illinois
HANSEN, ARTHUR A.◊ (1972), Associate Professor of History
B.A., M.A., Ph.D., University of California, Santa Barbara
HARDMAN, O. CLYDE (1974), Associate Professor of Accounting
B.S., M.S., University of Utah; Ph.D., University of Illinois
HARDY, B. CARMON (1966), Professor of History
B.A., Washington State University; M.A., Brigham Young University; Ph.D., Wayne State University
HARMON, RONALD M. (1975), Lecturer in Spanish
B.A., Arizona State University; M.A., University of California, Los Angeles
HARMON, SU D. (1973), Assistant Professor of Music
B.M.E., M.M., North Texas State University
HARRINGTON, MARIENNE K. (1974), Lecturer in Education
B.A., M.A., California State University, Fullerton
HARTMAN, MARY L, (1974), Lecturer in Communications
B.A., California State University, Fullerton; M.A., Chapman College
HARTSIG, BARBARA A. (1959), Professor of Education
B.A., Occidental College, M.S., University of Southern California; Ed.D., University of California, Los Angeles
HATCH, FRANK W. (1972), Lecturer in Dance
B.A., M.A., Brigham Young University; Ph.D., University of Wisconsin
HAYDEN, MARY H. (1965), Associate Professor of English
B.A., California State University, Fullerton; M.A., University of California, Riverside; Ph.D., University of California, Irvine

On leave 1974-75
◊ On leave fall 1974

HAYES, JOSEPH J. (1970), Associate Professor of English
A.B., Dartmouth College; Ph.D., Indiana University

HAYNER, HELEN L. (1965), Senior Assistant Librarian
B.A., State University of New York, Albany; B.S. in L.S., Syracuse University

HEIN, RAYMOND (1961), Professor of Art
B.A., M.A., California State University, Long Beach

HEITZMAN, WILLIAM R. (1970), Assistant Professor of Quantitative Methods
B.S.M.E., Ohio Northern University; M.B.A., California State University, Fullerton

HELIN, RONALD A. (1963), Professor of Geography
B.A., Ph.D., University of California, Los Angeles; M.A., Miami University

HENGEVELD, DENNIS A. (1967), Associate Professor of English
B.A., Hope College; M.A., Ph.D., Rice University

HENRY, DONALD R. (1966), Associate Dean, School of the Arts and Professor of Theatre
B.A., State College of Iowa; M.A., University of Washington; Ph.D., University of Wisconsin

HERMAN, LINDA E. (1965), Associate Librarian and Coordinator, Special Collections Section
B.A., California State University, Los Angeles; M.L.S., University of California, Los Angeles

HERRON, LOIS S. (1959), Executive Secretary and Director of Faculty Records, *Emeritus*
B.S., M.S., University of Illinois

HESS, DEAN W. (1970), Assistant Professor of Theatre
B.S., University of Wisconsin; M.A., California State University, Los Angeles

HIEGEL, GENE A. (1966), Professor of Chemistry
B.S., Ph.D., University of Wisconsin

HIGHTOWER, JAMES K. (1969), Associate Professor of Quantitative Methods
A.B., Kalamazoo College; M.A., Ph.D., Claremont Graduate School

HIGUERA, BERNARD A.[1] (1973), Accounting Officer
Sawyer School of Business

HILL, SHIRLEY L. (1971), Associate Professor of Education and Acting Chair, Division of Teacher Education A.B., A.M., Stanford University; Ed.D., University of Arizona

HINDS, JOHN E. (1972), Assistant Professor of Accounting
B.S., M.B.A., California State University, Long Beach; C.P.A.

HIPOLITO, JANE W. (1968), Associate Professor of English
A.B., University of California, Riverside; M.A., Ph.D., University of California, Los Angeles

HIRSCH, A. JAY (1966), Professor of Accounting
B.A., M.S., The Pennsylvania State University; Ph.D., University of Illinois

HOBBS, WILLIAM C. (1975), Assistant Professor of Criminal Justice
B.A., Loyola University of Los Angeles; J.D., University of Southern California

HOBSON, WAYNE K. (1973), Assistant Professor in Social Sciences M.A. Program
B.A., University of Oregon; M.A.T., Reed College; M.A., Stanford University

HODGES, ROBERT R. (1965), Professor of English
B.A., Valparaiso University; M.A., University of Missouri; Ph.D., Stanford University

HOLLAND, MICHAEL J. (1969), Associate Professor of English
B.A., M.A., California State University, Los Angeles; Ph.D., University of Denver

HOLMES, EMMA E. (1961), Professor of Education
B.A., Mount Holyoke College; M.A., University of Illinois; Ph.D., State University of Iowa

HOLSTE, THOMAS J. (1971), Assistant Professor of Art
B.A., M.A., California State University, Fullerton; M.F.A., Claremont Graduate School

HOLT, DALE R. (1974), Assistant Professor of Political Science
B.A., M.A., Brigham Young University; Ph.D., Claremont Graduate School

HORN, MICHAEL H. (1970), Associate Professor of Zoology
B.S., Northeastern State College; M.S., University of Oklahoma; Ph.D., Harvard University

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[1] Resigned February 1975

HOSHIZAKI, TAKASHI (1973), Lecturer in Botany
B.S., M.S., Ph.D., University of California, Los Angeles

HOUGH, GRANVILLE W. (1968), Professor of Management and Chair, Management Department
B.S., United States Military Academy; M.S., University of Southern California; M.S., George Washington University; Ph.D., The American University

HOUSE, KATHLEEN M. (1974), Lecturer in Education
B.A., San Francisco State University

HUDETZ, WALTER J.[1] (1969), Associate Professor of Engineering
B.S.E.E., California State University, Long Beach; M.S., Ph.D., University of California, Los Angeles

HUEBNER, WAYNE V. (1968), Professor of English
B.A., M.A., Ph.D., University of Minnesota

HUGHES, CHARLOTTE B. (1967), Professor of English
B.A., University of Oregon; A.M., Ph.D., Brown University

HUGHES, RONALD E. (1972), Instructor in Sociology
B.A., M.A., California State University, Fullerton

HUGSTAD, PAUL S. (1973), Associate Professor of Marketing
B.A., St. Olaf College; M.B.A., University of Arizona; Ph.D., University of Wisconsin

HULSE, CHRISTOPHER R. (1970), Assistant Professor of Anthropology
B.A., Reed College; M.A., University of Michigan

HUNT, EUGENE B. (1966), Professor of Engineering and Chair, Division of Engineering
B.S., South Dakota State College; M.S., Kansas State College; Ph.D., Purdue University

HYINK, BERNARD L. (1960), Professor of Political Science and Director, Center for Internships and Cooperative Education
B.A., University of Redlands; M.A., University of California, Berkeley; Ph.D., University of Southern California

IBSON, JOHN D. (1972), Assistant Professor of American Studies
A.B., University of California, Davis; M.A., Brandeis University

IHARA, CRAIG K. (1972), Assistant Professor of Philosophy
A.B., Stanford University; M.A., Ph.D., University of California, Los Angeles

ISRAELY, HILLA K. (1972), Assistant Professor of Sociology
B.A., The Hebrew University; M.A., University of California, Los Angeles

IVY, GREGORY D. (1965), Professor of Art, *Retired*
B.S., Central Missouri State College; M.A., Columbia University

JACKSON, CARL E. (1974), Assistant Professor of Afro-Ethnic Studies
B.A., California State Polytechnic University, Pomona; M.P.A., University of Southern California

JACOB-PANDIAN, EBENEZER T. (1972), Assistant Professor of Anthropology
B.A., University of Madras; M.A., Northern Illinois University; M.A., Ph.D., Rice University

JACOBSON, EDWARD (1969), Counselor, Counseling Center
B.A., M.S., California State University, Los Angeles; Ph.D., University of Southern California

JACOBSON, PERRY E., JR. (1963), Professor of Sociology
B.A., Hamline University; M.S., Iowa State University; Ph.D., University of Minnesota

JAMES, GEORGE R. (1968), Associate Professor of Art
B.A., M.A., California State University, Long Beach

JANOTA, HARVEY F. (1968), Professor of Chemistry
B.S., Texas Lutheran College; Ph.D., The University of Texas

JASKOSKI, HELEN M. (1970), Associate Professor of English
B.A., Mount St. Mary's College; M.A., Ph.D., Stanford University

JASSO, ARTURO F. (1973), Assistant Professor of Spanish
B.A., University of New Mexico; M.A., University of Kansas; Ph.D., University of Missouri

JEFFREY, HARRY P. (1969), Associate Professor of History
A.B., Dartmouth College; M.A., Ohio State University; Ph.D., Columbia University

[1]Resigned January 1975

JENKINS, ROBERT E. (1973), Lecturer in Education
A.B., M.A., Ed.D., Columbia University
JENNINGS, ANNE M. (1974), Lecturer in Anthropology
B.A., M.A., New York University
JENSEN, EVA C. (1969), Placement Coordinator for Business, Industry and Government
B.S., University of California, Berkeley; M.P.A., Pepperdine University
JOESINK-MANDEVILLE, LEROY V. (1966), Associate Professor of Anthropology
B.A., California State University, Sacramento; M.A., Mexico City College; Ph.D.,
JOHNSON, CAROLYN F.# (1972), Assistant Professor of Communications
B.A., Augsburg College; M.A., American University
JOHNSON, CLARENCE D. (1972), Lecturer in Education
B.S., Portland State College; M.S., University of Southern California
JOHNSON, ELMER L.◊ (1964), Professor of Physical Education
B.A., Moorhead State College; M.Ed., University of Minnesota; Ed.D., University of Southern California Tulane University
JOHNSON, FRED M. (1971), Professor of Physics
B.S., City College of New York; M.A., Ph.D., Columbia University
JOHNSON, RAYNOLDS* (1961), Assistant Professor of Communications
B.A., California State University, Los Angeles; M.A., Stanford University
JOHNSON, WYNOAH L. (1971), Assistant Director of Financial Aid
B.A., California State University, Los Angeles
JONES, C. EUGENE, JR. (1969), Associate Professor of Botany
B.S., Ohio University; Ph.D., Indiana University
JONES, JEWELL C.† (1974), Assistant Professor of Criminal Justice
B.A., University of California, Los Angeles; J.D., Southwestern University College of Law
JOSEPH, ROGER (1974), Associate Professor of Anthropology
B.A., University of Nevada; M.A., Ph.D., University of California, oss Angeles
KADISH, KARL M. (1972), Assistant Professor of Chemistry
B.S., University of Michigan; Ph.D., The Pennsylvania State University
KAHRS, KARL H. (1969), Associate Professor of Political Science
Diplom-Kaufmann, University of Hamburg; M.A., Ph.D., University of California, Santa Barbara
KALIR, JOSEPH (1970), Associate Professor of Religious Studies
Baccalaureate, Hebrew University; Ph.D., University of Wuersburg
KALISH, LIONEL, III (1972), Assistant Professor of Economics
B.A., Ph.D., Washington University; M.A., Northwestern University
KALUPA, FRANK B. (1973), Assistant Professor of Communications
B.S., University of Wisconsin; M.A., University of Southern California
KANDEL, JUDITH S. (1972), Assistant Professor of Biology
B.A., Brooklyn College; Ph.D., University of California, Los Angeles
KANE, PAUL W. (1968), Acting Dean, School of Education and Associate Professor of Education
A.B., Clark University; M.A., University of Wyoming; Ed.D., University of Southern California
KAPLAN, DONALD E. (1964), Professor of Speech Communication
B.A., University of California, Los Angeles; M.A., California State University, Long Beach
KARSON, BURTON L. (1965), Professor of Music
B.A., M.A., D.M.A., University of Southern California
KATZ, FRED (1968), Professor of Anthropology
Diploma, National Orchestral Society, Carnegie Hall
KAWAKAMI, DANIEL T. (1967), Acting Director of Counseling
A.B., Washington University; M.A., University of Hawaii; Ph.D., Columbia University Teachers College
KAYE, ALAN S. (1971), Associate Professor of Linguisitcs and Chair, Linguistics Department
B.A., University of California, Los Angeles; M.A., Ph.D., University of California, Berkeley

On leave 1974-75
◊ On leave fall 1974
* On leave spring 1975
†Resigned January 1975

KEATING, JERRY J. (1967), Director of Public Affairs
A.B., California State University, Sacramento

KEELE, LUCY A. (1967), Associate Professor of Speech Communication and Director of Forensics
B.A., M.A., Ph.D., University of Oregon

KEIRSEY, DAVID W. (1971), Associate Professor of Education
B.A., Pomona College; M.A., Ph.D., Claremont Graduate School

KELLER, ALVIN J. (1966), Professor of Theatre and Chair, Theatre Department
B.A., University of California, Los Angeles; M.F.A., Yale University; Ph.D., Stanford University

KEMMERLY, JACK E. (1968), Professor of Engineering and Chair, Electrical Engineering Faculty
B.E.E., Catholic University of America; M.S., University of Denver; Ph.D., Purdue University

KENNY, DOROTHEA de FRANCE (1967), Assistant Professor of English
B.A., M.A., California State University, Los Angeles; Ph.D., University of California, Los Angeles

KENT, CLAUDE E. (1972), Assistant Professor of Art
B.A., M.A., San Jose State University

KERAN, DONALD W. (1961), Associate Librarian and Chair, Bibliographic Services Department
B.A., University of California, Los Angeles; M.S., University of Southern California

KERCIU, G. RAY (1963), Professor of Art
B.A., Michigan State University; M.F.A., Cranbrook Academy of Art

KERSCHNER, LEE R.✓ (1961), Professor of Political Science
B.A., Rutgers University; M.A., Johns Hopkins University; Ph.D., Georgetown University

KETTERINGHAM, WILLIAM J. (1966), Associate Professor of Geography and Chair, Geography Department
B.A., Ph.D., University of California, Los Angeles; M.A., Stanford University

KILKER, DOROTHY K. (1965), Associate Professor of English
B.A., M.A., California State University, Fullerton; Ph.D., University of Southern California

KIM, KUMSUN (1968), Assistant Librarian
B.A., Ewha Woman's University; M.L.S., University of Oregon

KING, GEOFFREY R. (1973), Lecturer in Management
B.S., M.S., California State University, Los Angeles; M.A., Ph.D., University of Southern California

KING, TERRY B. (1972), Lecturer in Music
B.M., Mount St. Mary's College

KIRAITHE, JACQUELINE T. (1971), Associate Professor of Spanish and Coordinator of Secondary Education
B.A., M.A., California State University, Sacramento; M.A., Ph.D., University of California, Los Angeles

KLAMMER, THOMAS P.* (1971), Assistant Professor of English
B.A., Concordia College; M.A., Ph.D., University of Michigan

KLASSEN, VURYL J.* (1965), Professor of Mathematics
B.A., Butler University; M.S., Ph.D., University of Arizona

KLASSEN, VYRON M. (1965), Professor of Mathematics
B.A., Butler University; M.S., Ph.D., Virginia Polytechnic Institute

KLEIN, MARTIN L. (1969), Professor of Communications
B.S., The Pennsylvania State University; M.S., Ph.D., Boston University

KLEIN, ROSALIE H. (1972), Instructional Design Consultant
B.A., University of California, Los Angeles

KLEIN, SIDNEY (1968), Professor of Economics
B.S., University of California, Los Angeles; A.B., University of Southern California; Ph.D., Columbia University

✓ On assignment at Chancellor's office
* On leave spring 1975

KLINE, RUTH C.# (1972), Assistant Professor of Art
B.A., Sarah Lawrence College; M.A., Mills College

KLINE, WALTER D. (1963), Professor of Spanish
B.A., Indiana State Teachers College; M.A., University of Wisconsin; Ph.D., University of Michigan

KOEHLER, MARY A. (1970), Executive Assistant to the President; and Assistant Professor of Communications
B.A., M.A., California State University, Fullerton

KOON, WILLIAM H. (1970), Associate Professor of English
A.B., Belmont Abbey College; M.A., Appalachian State College; Ph.D., University of Georgia

KRATZERT, MONA Y. (1969), Assistant Librarian
B.A., M.S.L.S., University of Southern California

KRAVITZ, BERNARD (1961), Professor of Education
B.A., University of Southern California; M.A., Ed.D., University of California, Berkeley

KREINER, JESA H. (1969), Assistant Professor of Engineering
Diplome, University of Belgrade

KRETER, LEO E.* (1968), Professor of Music and Chair, Music Department
B.A., Carleton College; M.A., D.M.A., Cornell University

KRISHNAMURTHY, SUNDARAM (1968), Associate Professor of Engineering
B.Sc., University of Ceylon; M.S., Ph.D., Rensselaer Polytechnic Institute

KRIVANEK, JARA A. (1968), Associate Professor of Psychology and Coordinator, Liberal Studies Program
B.A., Sydney University; Ph.D., University of California, Irvine

KUHN, DEANNA (1973), Assistant Professor of Psychology
B.S., University of Illinois; Ph.D., University of California, Berkeley

KUNI, MASAMI (1964), Professor of Dance
B. Humanities, Bungakushi, Tokyo Imperial University; Ph.D., Friedrich Wilhelm University

KUPPER, SAMUEL Y. (1973), Assistant Professor of History
B.A., California State University, Los Angeles; M.A., Ph.D., University of Michigan

KWON, YOUNG DUCK (1969), Associate Professor of Engineering
B.S., M.S., Seoul National University; Ph.D., University of New Mexico

LABRADO, LAWRENCE R. (1971), Coordinator, School Relations and Admissions, Educational Opportunity Programs
B.A., California State University, Fullerton

LACKEY, PAT N. (1966), Associate Professor of Sociology
A.B., Southwest Missouri State College; M.A., Ph.D., University of Pittsburgh

LAFKY, JOHN D. (1963), Professor of Economics and Chair, Economics Department
B.S., New Mexico State University; M.A., Ph.D., The University of Texas

LAGERBERG, DONALD E. (1968), Associate Professor of Art
A.B., M.A., University of California, Los Angeles

LAKE, ERNEST G. (1966), Professor of Education, *Emeritus*
B.A., Montana University; M.Ed., Ed.D., Harvard University

LAKE, JEANETTE, M. (1964), Senior Assistant Librarian and Coordinator, Curriculum Center
B.A., Mount Holyoke College, M.S.L.S., University of Southern California

LAMBERT, CHARLES C. (1970), Associate Professor of Zoology
B.A., M.S., San Diego State University, Ph.D., University of Washington

LANCEY, TIMOTHY W. (1973), Lecturer in Engineering
B.S.Eng., California State University, Los Angeles; M.S.M.E., Ph.D., University of Southern California

LANDON, JOSEPH W. (1960), Professor of Music
B.A., Occidental College; M.A., Claremont Graduate School; Ed.D., University of Southern California

LANGDON, RONALD (1970), Associate Director, University Center for Internships and Cooperative Education
B.A., M.S., California State University, Fullerton

* On leave spring 1975

On Leave 1974-75

LANGE, IRENE L. (1965), Professor of Marketing
B.S., M.S., Ph.D., University of Illinois

LANGSDORF, WILLIAM B. (1959), President and Professor of History, *Emeritus*
B.A., M.A., Occidental College; Ph.D., University of California, Berkeley

LAWRENCE, JOHN A., JR (1973), Assistant Professor of Quantitative Methods
B.S., Cornell University; M.S., Ph.D., University of California, Berkeley

LAY, L. CLARK (1960), Professor of Mathematics Education
B.S., Aurora College; M.A., University of Southern California; Ed.D., University of California, Los Angeles

LEDER, HANS H.◊ (1965), Professor of Anthropology
B.A., New York University; M.A., Ph.D., Stanford University

LEE, LOUISE G. (1964), Director of International Education and Exchange
B.S., University of Wisconsin; M.A., California State University, Fullerton

LEE, MICHAEL V. (1971), Assistant Professor of Art
B.S., Brigham Young University; M.F.A., University of California, Los Angeles

LEE, TSO-HWA (1970), Associate Professor of Geography
B.A., National Taiwan Normal University; M.A., Ph.D., Southern Illinois University

LEIGHTON, RONALD S. (1972), Lecturer in Art
B.A., M.A., California State University, Fullerton

LEMMON, ROBERT A.◊ (1963), Associate Professor of Education
B.S., M.A., Ohio State University; Ed.D., Colorado State College

LEONARD, WILLIAM A. (1972), Associate Professor of Mathematics Education
B.A., Valparaiso University; M.A., Indiana State University; Ed. D., University of Northern Colorado

LINDLEY, RICHARD H. (1965), Professor of Psychology
B.A., Ph.D., University of California, Berkeley

LINDNER, WILLIAM A. (1966), Associate Professor of Psychology
A.B., Columbia College; Ph.D., Indiana University

LINDQUIST, CAROL U. (1974), Assistant Professor of Psychology
B.A., Miami University; M.A., Ph.D., University of Illinois

LISTON, ABLERT M. (1973), Lecturer in Political Science
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LITTLE, ARAMINTA A. (1968), Associate Professor of Dance and Acting Chair, Faculty of Dance
B.S., M.F.A., University of North Carolina; Ph.D., University of Southern California

LLOYD, JERRY W. (1970), Coaching Specialist
B.A., California State University, Long Beach; M.S., California State University, Fullerton

LONG, EMMETT T.✓ (1959), Professor of Speech Communication
B.A., Pepperdine College; B.A., M.A., University of California, Berkeley; Ed.D., University of Southern California

LONG, STEWART L. (1973), Assistant Professor of Economics
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LUECK, JOHN C. (1973), Assistant Professor of Music
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LYNN, ARTHUR W.# (1962), Counselor, Counseling Center
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LYSTRA, KAREN A. (1973), Assistant Professor of American Studies
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MAAS, GARY L. (1970), Associate Professor of Music
B.M., M.M., University of Wisconsin; Ph.D., University of North Carolina

MacKENZIE, CLINTON D. (1970), Associate Professor of Art
B.S., Macalester College; M.F.A., Cranbrook Academy of Art

◊ On leave fall 1974
✓ On assignment at Chancellor's Office
On leave 1974-75

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MALONEY, NEIL J. (1969), Associate Professor of Earth Science
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MARAM, SHELDON L. (1973), Assistant Professor of History
B.A., M.A., University of California, Los Angeles; Ph.D., University of California, Santa Barbara

MARCH, LESTER W. (1969), Associate Professor of Education
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MARLEY, GERALD C. (1967), Professor of Mathematics
B.S., Eastern New Mexico University; M.S., Texas Technological College; Ph.D., University of Arizona

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

MATSON, DONALD D. (1967), Wrestling Coach
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MAVITY, JAMES T. (1969), Coordinator of the Summer Session
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MAXWELL, J. WILLIAM (1960), Professor of Communications
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ODLE, D. RICHARD (1967), Associate Professor of Theatre
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OLSEN, ROBERT M. (1970), Professor of Marketing
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OMALEV, ALEXANDER (1960), Professor of Physical Education
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ONORATO, MICHAEL P. (1965), Professor of History
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PALISI, BARTOLOMEO J. (1963), Professor of Sociology
B.A., M.A., Brooklyn College; Ph.D., University of Nebraska

PALMER, JOSEPH W. (1972), Assistant Professor of Library Science
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B.S., M.Ed., Springfield College; Ed.D., University of Oregon

PAUL, M. JANE (1968), Associate Professor of Music
B.Mus., M.Mus., University of Illinois

PEASE, DONALD E. D. (1969), Associate Professor of Education
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PEÑA, ERVIE◊ (1963), Associate Professor of Spanish
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PERKINS, DAVID (1969), Associate Professor of Psychology and Chair, Psychology Department
B.A., M.A., Ph.D., University of New Mexico

PERRY, SHARON K. (1969), Assistant Librarian
B.A., California State University, Fullerton; M.L.S., University of California, Los Angeles

PETALAS, URANIA C. (1965), Associate Professor of English
B.A., M.A., California State University, Northridge; Ph.D., University of California, Los Angeles

PETROFF, IRENE K. (1971), Assistant Professor of Engineering
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PICKERING, JERRY V. (1968), Associate Professor of Theatre
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PICKERSGILL, GARY M. (1970), Associate Professor of Economics
B.A., University of Oklahoma; M.A., Ph.D., University of Washington

PICKERSGILL, JOYCE S. (1966), Professor of Economics
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PIERCE, SAM (1970), Assistant Professor of Mathematics
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PORTER, ALBERT W. (1971), Professor of Art
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POVLOVICH, CHARLES A. (1960), Professor of History
B.A., University of Kansas City; M.A., University of Missouri; Ph.D., University of Southern California

POWLISON, FRASER (1967), Associate Professor of Education
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PRESCH, WILLIAM F. (1973), Assistant Professor of Zoology
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PRINSKY, LORRAINE E. (1972), Assistant Professor of Sociology
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PULLEN, RICKY D. (1973), Assistant Professor of Communications
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REDDY, CHENNAREDDY P. (1972), Assistant Professor of Engineering
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ROBERTS, FRANK L. (1961), Professor of Marketing and Management
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ROBERTSON, KATHLEEN M. (1974), Athletic Trainer and Physical Therapist
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RODGERS, LLOYD A. (1972), Assistant Professor of Music
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SCHICK, GEORGE B. P. (1970), Lecturer in Education
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B.A., Iowa State Teachers College; M.A., University of Iowa; Ph.D., University of Southern California

SCHREINER, PHILIP J. (1970), Professor of Speech Communication
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SCHULMAN, RICHARD D. (1972), Personnel Director
B.A., University of California, Los Angeles

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* On leave spring 1975

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SCOTT, MILDRED H. (1965), Director of Admissions
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SCOUFOS, ALICE L. (1966), Professor of English
B.A., Ph.D., University of Oklahoma

SEAPY, ROGER R. (1974), Lecturer in Zoology
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SEARS, DONALD A. (1967), Professor of English
B.A., Bowdoin College; M.A., Ph.D., Harvard University

SEE, RICHARD E. (1966), Associate Professor of Anthropology
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SHAPIRO, MARK H. (1970), Associate Professor of Physics
A.B., University of California, Berkeley; M.S., Ph.D., University of Pennsylvania

SHAPLEY, CHARLES S. (1962), Professor of French
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SHARMA, RADHA M. (1966), Associate Professor of Finance
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B.A., Queens College; M.A., Ph.D., The University of Michigan

SIMPSON, ROBERT L. (1967), Associate Professor of Education
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THOMAS, FLOYD W., JR. (1969), Acting Associate Dean, School of Mathematics, Science and Engineering; and Professor of Engineering
B.S.M.E., University of South Carolina; M.S., Ph.D., North Carolina State University

THOMAS, IRENE D.# (1969), Associate Professor of English
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THOMAS, J. MORGAN (1972), Assistant Professor of Sociology
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THOMAS, JOSEPH ALLEN* (1967), Associate Professor of Psychology
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THOMAS, JOSEPH L. (1974), Assistant Professor of Chemistry
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THORSEN, DAVID O. (1960), Professor of Music
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TOWNSHEND-ZELLNER, NORMAN (1964), Professor of Economics and Director, Center for Economic Education
B.S., Ph.D., University of California, Berkeley

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TREGO, JOHN W. (1964), Professor of Management and Business Education
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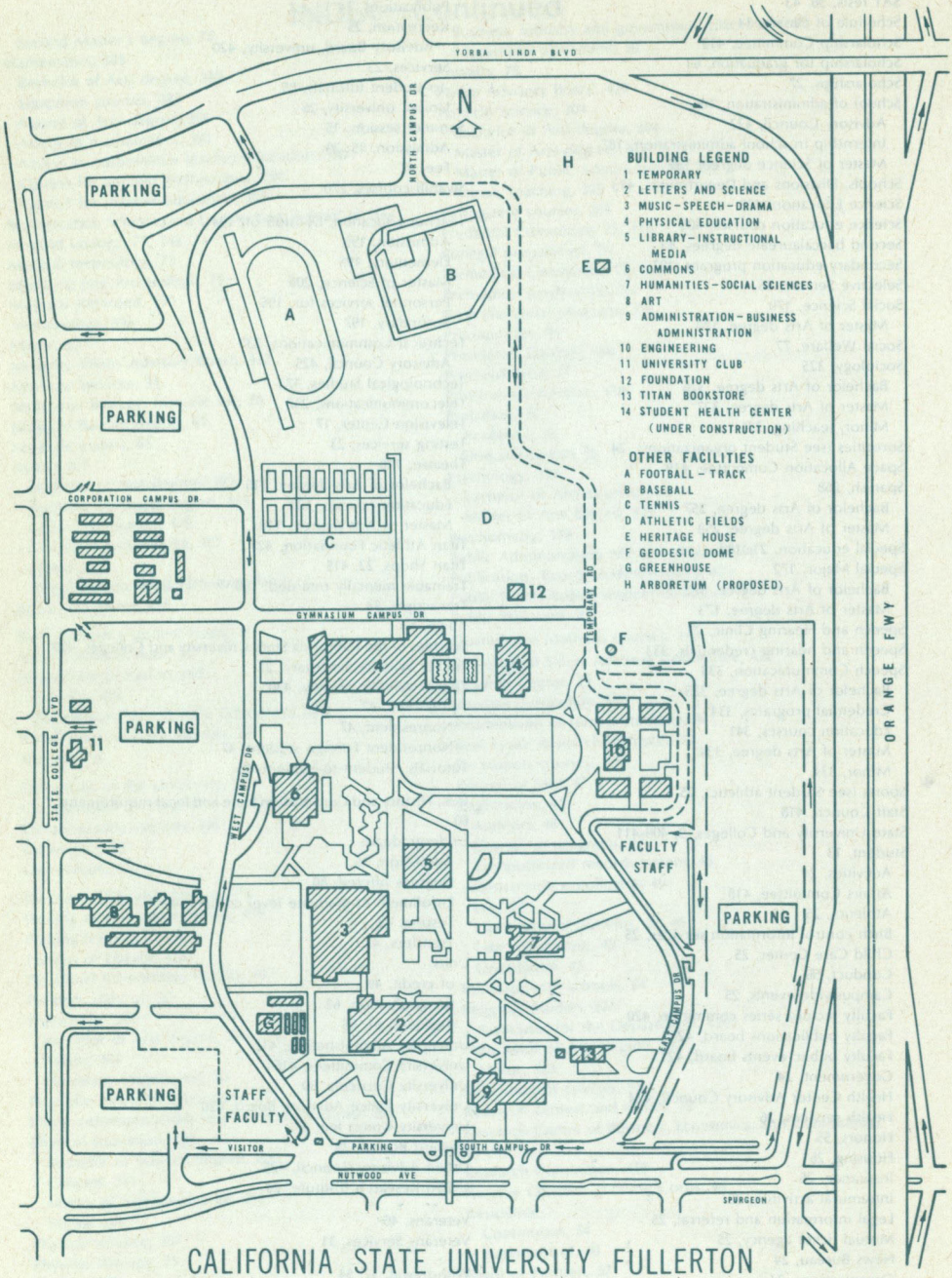

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