The California State University and Colleges
Calfornia State University Long Beach Bulletin

Catalog of Undergraduate and Graduate Studies

1979-1981

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General Information and
Announcement of Courses

1979-1981

The California State University and Colleges
California State University, Long Beach
Bulletin

## Vol. 30, No. 3

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1250 Bellflower Boulevard, Long Beach, California 90840
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## Preface

This Bulletin is designed to provide most of the information students need to decide whether they want to enroll at California State University, Long Beach, what procedure they should follow if they do and what they must do to graduate once they have enrolled. It contains, in addition, other information about The California State University and Colleges, California State University, Long Beach and its administration, faculty and the available courses of study. It also includes statements of policy about grades, probation, transfer of units, special examinations and other pertinent information. Since students are ultimately responsible for their own program, it is advisable that they be familiar with the information relevant to their needs. Each department lists the names of faculty members as undergraduate and graduate advisers who should be contacted for either academic advisement or assignment to an adviser. The Academic Advising Center operates an initial student contact and referral service and is located in Library E-10.

Prior to the fall semester an orientation program for freshmen and transfer students is held at the University. For further details contact the Admissions Office.

For the convenience of prospective students and other campus visitors a parking lot is located off Seventh Street.

Preparation of the Bulletin is under the direction of Dr. A. Jay Stevens, Associate Vice President for Academic Affairs-Instructional Programs; Dr. Kenneth Jenkins, Deputy Associate Vice President for Academic Affairs-Instructional Programs, and Dr. Boyd Davis, Director of Academic Planning. Production staff consists of Barbara Parks, Editor; and William Schwartz, Typesetter/Composer. Cover design by Victoria A. Waller.
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## 1979-80 Calendar

## Fall Semester, 1979

| August 20 | Beginning of fall semester. |
| :---: | :---: |
| August 20-23 | Completion of Registration. Refer to Schedule of Classes. |
| August 27 | Instruction begins. |
| August 27 | Late registration and change of program. |
| September 3 | Labor Day-holiday. |
| September 24. | Last day to add new classes to program without petitioning. |
| September 24 | Last day to withdraw from a course and not have it appear on permanent records (instructor drops included). |
| October 12 | Campus holiday. |
| October 20 | American College Testing Program Examination and Graduate Record Examination. |
| November 3 | CEEB Scholastic Aptitude Test. |
| November 22-23 | Thanksgiving recess. |
| December 1 | CEEB Scholastic Aptitude Test. |
| December 8 | American College Testing Program Examination and Graduate Record Examination. |
| December 11 | Last day of instruction. |
| December 12-19 | Reading period and final examinations. |
| December 20 | End of fall semester. |
| December 20 | Christmas recess begins. |

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OCTOBER
S M T W T F s
$\begin{array}{lllllll}1 & 2 & 3 & 4 & 5 & 6 \\ 7 & 8 & 9 & 10 & 11 & 12 & 13\end{array}$
$\begin{array}{rrrrrrrr}7 & 8 & 9 & 10 & 11 & 12 & 13 \\ 14 & 15 & 16 & 17 & 18 & 19 & 20\end{array}$ $\begin{array}{lllllll}14 & 15 & 16 & 17 & 18 & 19 & 20 \\ 21 & 22 & 23 & 24 & 25 & 26 & 27\end{array}$ 21222324
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exican-American Studies

## Spring Semester, 1980



## B MTBRUARY ${ }_{T}$ $\begin{array}{rrrrrrrr}3 & 4 & 5 & 6 & 7 & 8 & 2 \\ 10 & 11 & 12 & 13 & 14 & 15 & 16 \\ 17 & 18 & 18 & & 20 & 21 & 22 & 23\end{array}$ $\begin{array}{lll}17 & 25 & 26 \\ 27 & 28 & 29\end{array}$

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| $S_{M T}^{M A Y} T_{T}=S$ | 19-28 ........... Reading period and final examinations. |
| :---: | :---: |
|  | May 26 ........... Memorial Day-holiday. |
| 25262728293031 | May 28-30 ........ Commencements. |
|  | May 30 $\qquad$ End of spring semester. End of academic year. |
| 22 29 23 | Summer Sessions, |
|  | 1980 |
| 3 M Juty ${ }^{\text {Juty }}$ | First Session ....... June 2-July 11 |
| $\begin{array}{lllllllll}6 & 7 & 2 & 2 & 3 & 4 & 5 \\ 6 & 8 & 10 \\ 13 & 14 & 1 & 12\end{array}$ | Second Session..... June 16-July 25 |
| $\begin{array}{lllllll}13 & 14 & 15 & 16 & 17 & 18 \\ 20 & 21 & 22 & 23 & 24 & 26 \\ 26\end{array}$ | June 16-July 25 |
| 2728293031 | Third Session. . . . . . . July 14-August 22 |

## 1980-81 Calendar

## Fall Semester, 1980



## Spring Semester, 1981



THE CALIFORNIA BTATE UNIVERBITY AND COLLEGEE


## The California State University and Colleges

The individual California State Colleges were brought together as a system by Donahoe Higher Education Act of 1960. In 1972 the system became The Californi State University and Colleges. Today, 16 of the 19 campuses have 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 are offered jointly with the University of California and with private universities in 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 a campus

Enrollments in fall 1978 totaled over 300,000 students, who were taught by a faculty of 17,500 . Last year the system awarded over 53 percent of the bachelor's degrees and 33 percent of the master's degrees granted in California. Almost 700,000 persons have been graduated from the 19 cam puses since 1960

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## The University

## History

The University was founded in 1949 as Los Angeles-Orange County State College mainly to serve the area of Orange County and southeastern Los Angeles County. It began instruction in temporary, rented facilities in Long Beach with a faculty of 13 and a student body of 160 juniors, seniors and graduate students.

In 1950 the City of Long Beach donated a one-million-dollar 320-acre permanent te for the college and the name was changed to Long Beach State College. By 1953 construction started on the first permanent facilities and the first freshmen and sophomores were enrolled. Formal dedication ceremonies were held in 1955

The institution was renamed California State College at Long Beach in 1964, California State College, Long Beach in 1968 and in June of 1972 the Legislature ecognized in name what had long existed in fact by designating it California State University, Long Beach

In 1974 the University celebrated its 25th anniversary and had become the largest of the 19 campuses within The California State University and Colleges system. Its total enrollment reaches almost 33,000 students from nearly every state in the country and 90 foreign countries, taught by a full and part-time faculty of more than 1,600 and supported by a staff of some 1,000

## Purpose

The University provides instruction "through the master's degree, in the liberal arts and sciences, in applied fields and in the professions, including the teaching profession." Its unique balance of professional and liberal arts programs allows a wide and highly exciting range of career and educational opportunities.

## Accreditation

The University is accredited by the Western Association of Schools and Colleges, the agency responsible for granting national accreditation to colleges and universities in the western United States. It is accredited by the California State Board of Education and is on the list of approved institutions of the American Association of University Women.

Professional degree programs offered by the University and national associations and societies accrediting these programs are as follows:

Art
National As'sociation of Schools of Art
Business Administration $\qquad$ National Assembly of Collegiate Schools of Business

Chemistry. . (undergraduate)
Communicative Disorders (graduate)
Engineering. (undergraduate)

American Chemical Society, Committee on Professional Training

## American Speech and Hearing Association,

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or Professional Development (Civil, Computer, Electrical, Materials, Mechanical, Ocean) Interior Design (Art) . . . . . . . Foundation for Interior Design Education Research Journalism..................... American Council on Education for Journalism Music. . . . . . . . . . . . . . . ............ National Association of Schools of Music Nursing $\qquad$
$\qquad$ National League for Nursing
Physical Therapy $\qquad$ American Physical Therapy Association
Recreation and Leisure Studies.
National Recreation and
Social Welfare
Park Association Council of Accreditation

Theatre Arts
Council on Social Work Education National Association of Schools of Theatre

## Memberships

The University holds membership in the following:
Administrative Management Society
Alliance of California Arts Council
American Assembly of Collegiate Schools of Business
American Association for Affirmative Action
American Association for Higher Education
American Association of Collegiate Registra
American Association of State Coll
American Association
American Council of Uducation
American Council of Education for Journalism
American Council on Education
American Federation of Arts
American Home Economics Association
American Personnel and Guidance Association
American Philosophical Association
American Physical Therapy Association
American Society for Engineering Education
American Society for Industrial Security
American Society for Training and Development
American Society of Allied Health Professions
American Society of Journalism School Administrators
American Speech and Hearing Association
Association for Educational Communications and Technology
Association for General and Liberal Studies
Association for Intercollegiate Athletics for Women (AIAW
Association for School, College and University Staffing
Association of Administrators of Hoss and Economic Research
Association of Administrators of Home Economics
Association of American Colleges
Association of California School Administrators
Association of College and University Auditors
Association of College and University Housin
Association of College, University and Coming Officers
Association of Departments of English
Association of Departments of Forish
Association of Departments of Foreign Languages

Association of Physical Plant Administrators of Universities and Colleges (APPA)
Association of Record Managers and Administrators
Audio Engineering Society, Inc.
Broadcast Education Association
California Association of College and University Housing Officers
California Association of Dance Com panies
California Association of Police Training Officers
California Association of Public Purchasing Officers
California Check Investigators Association
California Council on the Education of Teachers
California Educational Placement Association
California Media and Library Educators Association
California Newspaper Publishers Association
California Peace Officers Association
California Personnel and Guidance Association/California College
Personnel Association Division
California Personnel and Guidance Association and California
School Counselors Association
College Art Association
College Entrance Examination Board
College Placement Council
Consortium of Latin American Studies Programs
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Council of Educational Facility Planners, International
Council of Graduate Schools in the United States
Council of University Institutes for Urban Affairs
Council on Social Work Education
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Information Film Producers of America, Inc.
Institute of Electrical and Electronic Engineers
Institute of International Education, Inc.
Institutional and Municipal Parking Congress
International Association of Chiefs of Police
International Association of College and University Security Directors
International Industrial Television Association (ITVA)
International Union of Anthropological and Ethnological Sciences
inter-University Consortium for Political and Social Research
Long Beach Chamber of Commerce
os Angeles Area Chamber of Commerce
National Association for Foreign Student Affairs
National Association of College and University Business Officers
National Association of Educational Broadcasters
National Association of Educational Buyers
National Association of School Psychologists
National Association of Schools of Art
National Association of Schools of Music
National Association of Schools of Public Affairs and Administration and
Institutional Affiliation with American Society for Public Administration
National Association of Schools of Theatre (NAST)
National Association of Student Financial Aid Administrators
National Association of Student Personnel Administrators
National Association of Veterans Program Administrators
National Association of Women Deans and Counselors
National Collegiate Athletic Association
National Collegiate Honors Council
National Council for Accreditation of Teacher Education

National League for Nursing
National Rehabilitation Association
National Safety Council
National University Extension Association
North American Association of Summer Sessions
Pacific Association of Collegiate Registrars and Admissions Officers
Pacific Coast Athletic Association
Pacific Coast College Health Association
Pacific Coast Press Club
Peace Officers Association of Los Angeles County
Public Corporation for the Arts
Public Relations Society of America
Social Sclence History Association
Society for College and University Planning
Society of Motion Picture and Television Engineers
Southern California Conference on International Studies
Southern California Industrial Safety Society
Speech Communication Association
Student Competitions on Relevant Engineering, Inc.
Student Personnel Association of California
Tele-Communications Association
Town Hall of California
University Resident Theatre Association (URTA)
Western Association of Art Museums
Western Association of College and University Business Officers
Western Association of Graduate Schools
Western Association of Schools and Colleges
Western Association of Summer Session Administrators
Western College Association
Western College Placement Association
Western Collegiate Athletic Association
Western Council on Higher Education for Nursing
Western Economics Association
Western Interstate Commission for Higher Education
Western Speech Communication

## Buildings and Facilities

The hilltop portion on the 322-acre campus overlooks the Pacific Ocean. 58 permanent buildings house the Schools of Applied Arts and Sciences, Business Administration, Education, Engineering, Fine Arts, Humanities, the Natural Sciences and Social and Behavioral Sciences. An impressive University Student Union is located at the crossroads of the campus providing a focal point for the total campus community. A new facility for Social Sciences/Public Affairs and a centralized Student Services/Administration center in close proximity to the Union adds needed services, disperses the concentration of population now on the hill and enables the University to "grow larger in order to become smaller." Specialized facilities for Industrial Technology, Microbiology and Nursing have recently been
aled
Alowering central feature of the landscape design is a planting of Helen Borcher flowering peaches which now include more than 3,200 trees donated by the citizens of Long Beach. Secluded landscape areas and buildings of appropriate scale help maintain a learning environment that encourages small group identification and personal privacy in the midst of 33,000 individuals sharing the same site, on what is essentially a large urban campus.
The campus is beginning to assume a highly individual character. In 1965, the Iternational Scuipture Symposium contributed 9 monumental pieces and designs publications, and in 1972 additional commits in 21 national and international provided for the completion additional community funds in the form of a trust provided for the completion of the Carlson Memorial Tower, designed by French
sculptor Andre Bloc. The campus sculpture collection has continued to expand with the addition of works by Tom Van Sant in 1973, and Guy Dill in 1975. These acquisitions were made possible through private donations.

A gift of $\$ 250,000$ from an alumna, Isabel Patterson, who registered in the University's first class, permitted construction of the Isabel Patterson Child Development Center on a site adjacent to Whaley Park. The project, originally initiated with $\$ 50,000$ contributed by the Associated Students, provides educational opportunity for more than 260 preschool children each semester.

The Recycling Center, a non-profit Associated Students function to promote environmental awareness and waste reduction, was opened in early 1977.

## The Library

Housed in a modern six-story building with over 300,000 square feet of space, the Library contains over 1.7 million bibliographic items. The book collection of 710,000 volumes is supplemented by bound periodicals, art prints, slides, phonograph records, nearly a million microtexts, many educational filmstrips, video tapes, mixed media programs, and maps. The Library also possesses a number of outstanding research collections, especially in comprehensive reference materials for art history, humanities, law, music, science, and social sciences. Special collections include a history of anti-slavery, the author D.H. Lawrence, and the poet Robinson Jeffers. The latter collection is based on the 1973 acquisition of 300 items of first editions, special printings, manuscripts of yet unpublished poems, letters, family photographs, and a wide spectrum of critical works and anthologies. Former Congressman Richard T. Hanna donated to the University papers covering his 18 years of service in the California Legislature and the U.S. House of Representatives. The library has acquired the papers of Dorothy Healy, an itemized collection of archival materials on American socialism

The Library is divided into four major subject areas and departments: Education, Humanities, Social Sciences/Business, and Science and Technology. Each of these departments is staffed by librarians who are subject specialists and work with the reference and circulating collections located in the respective departments. The Information Desk on the first floor is also staffed by librarians who will give bibliographic assistance, general orientation to the Library collection and facilities, reference to appropriate subject reference departments for special assistance, and provide an extensive outreach library instruction program.
Other library services include computer bibliographic searching, copying machines, microtext facilities, conference rooms, and a visual and audio media resources library
Faculty, graduate, and undergraduate students have access to the Library's national and international interlibrary loan sevice with special privileges with the 18 other campuses of The California State University and Colleges System as well as with the University of California System. The library is a member of the Center for Research Libraries and has full access to its collection of over 3 million volumes of material important for research.

The library is a depository for Federal, State, and local government documents

## Graduate Center

The University has established the Graduate Center to facilitate greater dialogue among graduate students, faculty, and interested persons and groups of the community. Dedicated on May 20, 1974 by Robert Maynard Hutchins, the distinguished educational philosopher and leader, the Graduate Center functions as a focal point for scholarly and creative activities, as a reception center for honored guests of the University, as a facility for the presentation of special lectures and seminars, and as a gallery for showing student and professional art exhibits.

## The University Student Union

Completed in 1972, the University Student Union with its large interior patios flexible multipurpose and meeting/dining rooms, comfortable lounges and food service facilities, is the campus community and hospitality center. It houses the educational program of out-of-class activities and serves as headquarters for the Associated Students government and business office, Student Activities University-related student groups, Women's Referral Center, CIEE Student Travel Legal Counseling, Sex Information, United Campus Ministries, Handicapped Students, Experiential Learning and the University Alumni Office.

The Union provides an information desk which is designed to handle questions of any kind and offers various sundry items for sale. A Ride Board is provided for students interested in forming car pools to or from school and during vacation periods. The scheduling office provides a central scheduling and coordinating service for the entire campus, including a visual Master Calendar for daily events The Student Activities area provides mail boxes, organizational files and work space for all student groups. The Union Food Service provides catering service for coffee hours, breakfasts, luncheons and banquets with a wide variety of menus.

Recreational facilities in the Games Area include bowling, billiards, table tennis pinball, table games and a television lounge. For outdoor recreational enjoyment a swimming pool, shower facilities and outdoor barbecue are available. The Sporthaus offers backpacking and ski equipment rental at reasonable prices. The Crafts and Graphics Center offers silkscreen, graphic arts and photography equipment complete with a darkroom. Tournaments, workshops, team and other group activities are planned to enhance recreational experiences

The large multi-purpose room, meeting and dining rooms and the small auditorium provide a variety of facilities to various organizations for meetings, speakers, dances and concerts as well as luncheons and banquets

A recent addition to the Union facilities is the Oak Room, a lounge/luncheon area for faculty, stail and dinners in the late afternoon and weekends.

## University Recreation Facilities

The University provides fee-based public use of the racquet/handball courts tennis courts, golf driving range, track, and field on weekends, holidays, and on weekday evenings when facilities are not reserved for classes, instruction athletic team events, or programs scheduled bythe University classes, instruction, athletic The recreation facilities program is
scheduling policy for racquet hand is designed to provide maximum public use. A court the day they want to play court the day they want to play.
In addition to the reservation service, student supervisors now provide users with information on upcoming facilities reservations for special events such as tournaments and classes
Recreation facilities fees were established by The California State University and Colleges Office of the Chancellor through Exe Calfornia State University supervision, liability insurance replace

Previous to the Recreational Facilitios feequipment, and make repairs.
expenses were absorbed instructional programs by the University. However, funds received for th maintain facilities used exclusively on enrollment. These can only be used to these facilities available to the public, additional fund programs. In order to keep
For information call William R Bovee, Director are required.
Recreation Program, (213) 498-4093, (Office:P E 326) of Weekend and Evening

## The Forty-Niner Shops

The Bookstore sells textbooks, reference and popular books, stationery supplies, and a large variety of miscellaneous items. The University Food Service composed of the main cafeteria, residence hall cafeteria and University Union food
service, provides food service for the entire University. The Forty-Niner Shops, Inc. operates both facilities as a nonprofit corporation with faculty, student and administrative representation on its Board of Directors.

## Isabel Patterson Child Development Center

This modern facility is a result of a major gift by alumna Isabel Patterson, who was one of the first students to enroll at CSULB in 1949. Additional funds came from the Associated Students and the California State University, Long Beach Foundation.

The Center provides a child development program which is available to the children of students, faculty, staff, administrators and other community members Students are given priority in registering if space is limited. The Center services children from ages two and a half through five at all times. Children up to the age of eight may attend the Center when public schools are not in session. Children two years of age may attend during winter and summer sessions. Hours are 7 a.m. to 6:30 p.m. Monday through Thursday, 7 a.m. to $5: 30 \mathrm{p} . \mathrm{m}$. on Fridays during fall and spring semesters and until 5:30 p.m. during vacations and other sessions.

The Center employs professional staff members and students who are studying child development and early childhood education. Academic departments utilize the center for observation and practical experience by students in the field. Child development and day camp programs are also available during the summer.

## The Soroptimist House

The Soroptimist House, which was presented to the Associated Students by the Soroptimist Club of Long Beach, provides a facility for parties, receptions and informal meetings. It has a terraced patio for outdoor events, carpeted lounges, a complete kitchen and a dance area available for scheduling by all campus organizations and departments. The Soroptimist House has a smatl, intimate homelike setting.

Reservations may be made at the Scheduling Desk in the University Student Union.

## International Sculpture Symposium

The monumental sculpture which is visible around the campus is a result of the first International Sculpture Symposium ever to be held in the United States. Held in the summer of 1965, the Symposium not only brought fame to the University as the birthplace of sculpture symposia in the nation, but also marked it as the firs college or university in the world to sponsor such an event.

Another of the unique aspects of the Symposium was the cooperation of Southern California industry in this cultural embellishment, termed by many a "wedding of industry and art."

Valued at approximately $\$ 300,000$, the sculpture was financed by individuals and industries who realized the valuable implications of such a cultural undertaking

The participants were sculptors Kengiro Azuma of Japan, J.J. Beljon of Holland Andre Bloc of France, Kosso Eloul of Israel, Claire Falkenstein and Gabriel Kohn of the U.S.. Piotr Kowalski, a Pole living in France, Robert Murray of Canada and muralist Rita Letendre of Canada. In addition to the work of these artists, art students serving as their apprentices created a wood sculpture which is permanently located at one of the primary entrances to the campus.

## University Foundation

The California State University, Long Beach Foundation is a nonprofit, tax exempt corporation organized to administer grants from governmental and private agencies for research and other activities related to the University program, and to accept donations, gifts and bequests for any University-related use, and provide a tax-deductible advantage to the donor.

The research and other activities involving the Foundation are related directly to the academic program. They usually involve substantial interaction between faculty and students. Often, the outside community is also involved and participates in the benefits of the projects

Donations, gifts and bequests provide a significant addition to the accomplishments of the University. Public funds provide the support for instructional and instructionally-related activities and facilities, but much more can be done with private contributions, such as student scholarships and creative faculty efforts which extend beyond normal instructionally-supported areas.
Facilities which cannot be provided through available public funding also depend upon outside contributions. The beautiful Louise Carlson Memorial Tower (designed by the late French sculptor Andre Bloc) and the Isabel Patterson Child Development Center are outstanding examples of such bequests.
Because Foundation resources can be allocated with greater flexibility than those of the University itself, they possess an added potential for responding to the changing needs of society and the community, including the financing of innovative projects.
Counseling and consulting services are available to potential donors. Information can be secured from the Foundation office on the campus or by addressing a letter to the California State University, Long Beach Foundation.

## Alumni Association

Organized in 1950, the Alumni Association has more than 50,000 members. Its major objectives are to advance the general welfare of California State University, Long Beach, to serve its members, to promote good will in the community and to provide support for the educational and charitable projects for the University
All graduates or persons who attended the University as regular registered students for a period of one semester or more and who left in good standing are eligible for membership in the Association. Associate memberships for friends and supporters who have not attended the University are also available. For membership information contact the Alumni Office at the University. To keep abreast of Alumni Association activities and programs, members are urged to have a current address on file in the Alumni Office

The Association serves its members through sponsorship and/or participation in extended education progams; academic, athletic, and cultural programs; library and University Union privileges; job placement and career counseling services; and University publications. Association membership also provides access to many commercial services, usually at reduced prices.
Association membership funds provide emergency loans to current students, scholarships, research grants to faculty and development of special programs.

## Fine Arts Public Performances and Exhibitions

The School of Fine Arts, composed of the departments of art, dance, music and theatre arts, sponsors more than 175 art exhibitions, plays, concerts and dance events each year. Some of these presentations are by professionals invited to faculty and student artists. aculty and student artists.
The Fine Arts Galleries (A, B and C), located between buildings FA2 and FA3 provide programs and exhibitions in the visual arts for the entire University community. Included are exhibitions of the work of nationally known artists, and the Center for Southern California the Museum Studies Certificate Program displays of work by M.A. and M.FA studies in the Visual Arts. There are also exhibits of work by members of A. students in the Art Department and biennial programs are often included All events Department faculty. Special lectures and Gallery hours are: $12.4 \mathrm{pm} . \mathrm{m}$. Monday-Friday 14 pmarge and open to the public. closed Saturdays and university holidays. 1.4 p.m. Sunday. The Galleries are

Tickets for all dance, music and theatre arts performances are sold through the CSULB Fine Arts Ticket Office located in the southwest corner of the Theatre Arts Building. The Ticket Office is open from 10 a.m. to 4 p.m. Monday-Friday and is open one hour prior to performance. Faculty, staff and student rates are available for most performances.

The Theatre Arts Building also houses the Studio Theatre, a complete "flexible" theatre seating 230 and the University Theatre with a proscenium stage and a seating capacity of 509 .

The Dance Department produces two formal studio concerts each year, a faculty-choreographed concert in the fall and a performance of student choreography in the spring. The concerts are presented in either the Studio Theatre or the University Theatre. In addition, the Department in conjunction with Orchesis, a student dance organization, sponsors a studio concert of student works, lecture demonstrations and informal concerts by guest artists. These programs are presented in the dance studio located in the Theatre Arts Building.

The Music Department sponsors 18 active performing organizations which include two orchestras, six choral groups, four bands as well as a number of ensemble groups. On-campus performances are held in a variety of places including the University and Studio Theatre, the University Union, Music Recital Hall, 127 and Music Rehearsal Hall, 123 (the latter two are located in the Music Building). Many of the concerts are free.

The Theatre Arts Department produces eight to ten major productions each year. The season includes a musical drama, an opera and a touring children's play. The conclusion of each season is marked by a multi-faceted experimental theatre weekend in the spring.

## Extended Education

## Extension

The University offers a variety of the courses from this Bulletin as well as many special classes through a comprehensive program of extended education. A schedule of these offerings is published twice yearly, in early August and in midDecember. It is distributed by mail to those who have requested to be on the mailing list. Classes not listed in the schedule are also offered to meet particular demands and are announced in direct mailings to groups and individuals deemed to have a direct interest in them. Requests to be on the mailing list should be sent to the Office of Extended Education.

There are two kinds of credit courses offered as extension classes:
Courses numbered 300 through 499 listed in this Bulletin. Credit earned in such courses offered through extension applies to degrees onferred and credentials awarded by the University, subject to limitations stated under "Extension and Military Credit."

Courses numbered 800 through 899. These courses are designed for persons who hold degrees, certificates or licenses and who wish to improve their professional skills, or as work to be honored by employers in considering job promotions.

Students not matriculated in the University may sample selected university courses on a seats available basis with the permission of the Department Chair through Concurrent Enrollment. Full details on procedures and cost may be found in the current Extension Bulletin.

Other offerings in extended education are non-credit special classes designed to serve a variety of community educational needs. Credit earned does not apply to any degrees or credentials awarded by the University

## Summer Sessions

The University offers summer programs of varying length in order to provide a number of options for students. They are designed to serve the needs and interests of resident students, transfer students and summer visitors who wish to earn credit

that may be applied toward graduation from another college or university Course offerings are comparable to those of the regular academic year, but many additional clinics, conferences, workshops, seminars and field studies are offered.

The Summer Sessions Bulletin is usually available on or about the first of April and may be obtained from the Summer Sessions Office.

## Winter Session

The University's early semester calendar of instruction provides the opportunity o schedule specialized programs during the approximately three-week interval between the fall and spring semesters. This program is offered through the Office of Extended Education and is designed for students who wish to earn additional units of credit in an accelerated instructional calendar. The schedule of offerings is available on or about the last week in November.

## Fees, Financial Assistance and Expenses

## Institutional and Financial Assistance Information

The following information concerning student financial assistance may be obtained from Mr. Eric Godfrey, Associate Director, Financial Aid, SS/AD BIdg., Rm. 276, 498-4641:

1. Student financial assistance programs available to students who enroll at California State University, Long Beach;
2. The method by which such assistance is distributed among student recipients who enroll at California State University, Long Beach;
3. The means, including forms, by which applications for student financial assistance is made; the requirement for accurately preparing such applications; and the review standards employed to make awards for student financial assistance; and
4. The rights and responsibilities of students receiving financial assistance.

The following information concerning the cost of attending California State University, Long Beach is available from Mr. Eric Godfrey, Associate Director, Financial Aid, SS/AD BIdg., Rm. 276, 498-4641:

1. Tuition fees;
2. Estimated costs of books and supplies;
3. Estimates of typical student room and board costs or typical community costs; and
4. Any additional costs of the program in which the student is enrolled or expresses a specific interest.
Information concerning the refund policy of California State University, Long Beach for the return of unearned tuition and fees or other refundable portions of costs is available from Mr. Joseph Kolano, Director of Accounting, SS/AD Bldg. Rm. 156, 498-5456.

Information concerning the academic programs of California State University, Long Beach may be obtained from Mr. Leonard Kreutner, Director of Admissions, SS/AD Bldg., Rm. 123, 498-4141:

1. The current degree programs and other educational and training programs;
2. The instructional, laboratory, and other physical plant facilities which relate to the academic program;
3. The faculty and other instructional personnel; and
4. Data regarding student retention at California State University, Long Beach and, if available, the number and percentage of students completing the program in which the student is enrolled or expresses interest.

2-79140

## Fees

Schedule of Fees, 1979-81
Tuition is not charged to legal residents of California. The following reflects the fees and expenses for the semester system.

All students are charged the following fees and expenses each semester:
Fees are subject to change without advance notice.

## All Students

|  | Number of Units |  | Number of Units |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Fall, Spring 1979, 1980 |  | Spring, Fall 19801981 |  |
|  | 1-6.0 | 6.1 ormore | 1-6.0 | 6.1 ormore |
| Student Services Fee | \$57.00 | \$72.00 | \$57.00 | \$72.00 |
| Facilities Fee | 3.00 | 3.00 | 3.00 | 3.00 |
| Instructionatly Related |  |  |  |  |
| Activity Fee | 5.00 | 5.00 | 5.00 | 5.00 |
| Student Body Fee | 10.00 | 10.00 | 10.00 | 10.00 |
| University Union Fee | 10.00 | 13.00 | 10.00 | 13.00 |
| Total Per Semester | \$85.00 | \$103.00 | \$85.00 | \$103.00 |

Nonresidents (U.S. and Foreign) $\dagger$

Note: The total amount of nonresident tuition charged shall not exceed \$1,710 per academic year.

## Summer Session

Fee per unit

Student Body fee per session . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1.00
Health fee per session

## Extension $\ddagger$

Extension tuition

| Lecture or discussion course, per unit | 37.00 |
| :---: | :---: |
| Activity course, per unit | 48.00 |
| Science laboratory course, per unit | 74.00 |

[^1]| Other Fees or Charges | 1979-80 | 1980-81 |
| :---: | :---: | :---: |
| Application (and reapplication) fee (non-refundable) payable by check or money order at time application is made | \$ 20.00 | \$ 20.00 |
| Late registration fee (non-refundable). | 5.00 | 5.00 |
| Student identification card | 1.00 | 1.00 |
| Failure to meet administratively required appointment or time limit . | 2.00 | 2.00 |
| Check returned for any cause | 5.00 | 5.00 |
| Complete transcript of record | 1.00 | 1.00 |
| Diploma fee | 8.00 | 8.00 |
| Organ practice, per student, per semester | 10.00 | 10.00 |
| Organ practice, per student, per summer session . . . . per week | 50 | 50 |
| Parking fee per semester for all students | 18.00 | 18.00 |
| Parking fee per semester for less than four-wheeled self-propelled vehicles-automotive. | 4.50 | 4.50 |
| Residence hall room and board fee per academic year depending on type of accommodations (approximate) | \$1,57 | \$1,800 |

## Credit Cards

In the event a student desires to pay any fees by use of VISA, or Master Charge, he/she should contact the University Business Office. If the student's bank does not have a check service program through the campus, the student may obtain a cash advance at a local bank.

## Auditors Pay the Same Fees as Others

## Fees are Subject to Change Without Advance Notice

 Full Payment of Registration and Activity Fees must be Made at Time of RegistrationNo fees of any kind shall be required of or collected from those individuals who qualify for such exem ption under the provisions of the Alan Pattee Scholarship Act.

## Student Services Fee

A Student Service Fee was established by the Board of Trustees of The California State University and Colleges in January 1975. Previously, this fee was known as the Materials and Service Fee.

The student services fee provides financing for the following student services programs not covered by state funding:

1) Social and Cultural Development Activities: provides for the coordination of various student activities, student organizations, student government, and cultural programs.
2) Counseling: includes the cost of counselor's salaries and clerical support plus operating expenses and equipment.
3) Testing: covers the cost of test officers, psychometrists, clerical support, operating expenses, and equipment.
4) Placement: provides career information to students and faculty for academic program planning and employment information to graduates and students.
5) Financial Aids Administration: includes the cost of the counseling and business services provided in connection with the financial aid programs.
6) Health Services: provides health services to students and covers the cost of salaries of medical officers and nurses plus related clerical and technical personnel as well as operating expenses and equipment.
7) Housing: includes the cost of personnel providing student housing information and monitoring housing services.
8) Student Services Administration: covers $50 \%$ of the cost of the Dean of Students Office which has responsibility for the overall administration of student services.

## Procedure for the Establishment of a Student Body Fee

The law governing The California State University and Colleges provides that a student body fee, not to exceed $\$ 20$ per academic year, may be established by student referendum with the approval of $2 / 3$ of those students voting. The student body fee was established at CSULB by student referendum on November 19, 1952 The same fee can be abolished by a similar $2 / 3$ approval of students voting on a referendum called for by a petition signed by $20 \%$ of the regularly enrolled students. (Education Code, Section 89300) The level of the fee is set by the Chancellor upon recommendation by the campus. Student body fees support a variety of cultural and recreational programs, child care centers, and special student support programs.

## Refund of Fees

Fees may be refunded only as authorized by Sections 41802, 41803, and 41913 of Title 5, California Administrative Code. Whether a fee may be refunded and the circumstances under which a fee or any part of a fee may be refunded, vary depending on the particular fee involved. Requirements governing refund may include such matters as the reason for seeking a refund (for example, death disability, compulsory military service), the number of days of instruction which have elapsed before application for refund is made (for example, requests for refund of student services fees, student body organization fees, and student body enter tees must be made no later than 14 days following the commencement of instruction and requests for refund or extension course tuition fees must be made prior to the fourth meeting of the class), and the degree to which the campus has provided the services for which the fee has been charged. Details concerning the and the appropriate proded, the circumstances under which fees may be refunded, from the Financial Manager.

## Student Services Fee

If a student completely withdraws from the University, this fee may be partially refunded if written application for refund is submitted to the registrar within 14 the cost of registration. If reduction of the student's enrilmall be retained to cover to a lower fee category within the first 14 days, the enroliment causes a reduction refunded to the student.

If a student is unable to continue enrollment due to a university regulation complete disability or because of compulsory military service, the entire fee may be before any academic credit is given for the circumstances may be made any time registered.

## Nonresident (U.S. and Foreign) Tuition Fees

If a nonresident student withdraws from the University or drops in unit load, tuition fees may be refunded by application as follows:

## Time limit for receipt of refund application

Amount of
(1) Before or during the first week of the sem ester
(2) During the second week of the semester refund
(3) During the third week of the semester 100\%
(4) During the fourth week of the semest 90\%
(5) During 70\%
(6) During the sixth week of the semester 50\%
(7) Seventh week through the sem ester. 30\%
(7) Seventh week through the end of the semester. . . . . . . . . . . . . . . . 20\%

## Parking Fee

Partial refund of the parking fee is made according to the following schedule and the return of all relevant parking documents issued by the University, including parking permit, stickers and decals. If any of these are affixed to the vehicle, their removal by a campus security officer or under the officer's direction shall constitute appropriate return. Following is the schedule for refunds which will be paid:
Period

Amount of
Period refund
1.30 days

75\%
$31-60$ days
50\%
61.90 days $\ldots \ldots .25$

91 -end of semester
None
Associated Students Fees and University Student Union Fees
The Associated Students fee, instructionally related fee, and the University Union fee are refundable in full if a student withdraws from the University within 14 days after the start of instruction. After that date, no portion of these fees is refundable.

There is no refund of Associated Students fees, activity fee or University Union fees because of a reduction in unit load from more than six units to six or less units.

## Determination of Residence for Nonresident Tuition Purposes

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 Office of Admissions and Records

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 is found in Education Code Sections 68000-68090, 90403, 89705-89707.5 and 68122, 68124 and 68121, and in Title 5 of the California Administrative Code, Article 4 (commencing with Section 41900) of Subchapter 5 of Chapter 1, Part V. A copy of the statutes and regulations is available for inspection at the campus Office of Admission and Records.

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 are 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; maintaining permanent military address and home of record in California if one is in the military service, etc.

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 atleast one year immediately preceding the residence determination date in order to qualify as a "resident student" for tuition purposes. A residence determination date is set for each academic term and is the date from which residence is determined for that term. The residence determination dates for the 1979-80 academic year are September 20, 1979 and January 25, 1980. If you have any questions respecting the applicable date, the campus Admissions Office can give you the residence determination date for the term for which you are registering

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

1. Persons below the age of 19 whose parents were residents of California but who left the state while the student, who remained, 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 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 refugees. Certain alien graduates of California public high schools.
8. Certain credentialed, full-time employees of school districts
9. Full-time State University and Colleges employees and their children and spouses. This exception applies onty for the minimum time required for the student to obtain California residence and maintain that residence for a year.
10. Certain exchange students.
11. 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
12. 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 only make written appeal to:
The California State University and Colleges
Office of General Counsel
400 Golden Shore
Long Beach, California 90802
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 campus for further review. 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.

## Financial Assistance

The Financial Aid Center at CSULB provides both financial and advisory assistance to enable students to pursue a quality education in spite of increasing costs. It administers funds made available by the federal and state governments and by private sources that are awarded to students who demonstrate a need to cover educational expenses.

Preferential filing deadlines are set to establish priorities for awarding. Financial aid applications are processed in the order of completion-files completed first are awarded first. Students are advised to complete files early since funds are limited:

File Aid
Submit Documentation
on or before
February 1, 1979
February 1, 1980
on or before

April 15, 1979
1979-80
1980-81

## Application

To apply for financial aid from CSULB, students must file the Student Aid Application for California (SAAC). The SAAC is a multiple-purpose form that also is used to apply for California Grants from the California Student Aid Commission and for Basic Educational Opportunity Grant (BEOG) funds from the federal government. The SAAC must be mailed to the College Scholarship Service (CSS), the national processor designated by CSULB. New students may obtain the SAAC rom high school counselors or local college financial aid offices. Students currently enrolled at CSULB may pick up the SAAC from the Financial Aid Center All students may obtain detailed information about the CSULB financial aid program by requesting the University Application Prospectus.
The submission of various supportive documents is required of all financial aid applicants. They include the following: (1) verification of all taxable and nontaxable icome reported on the Financial Aid Form; (2) financial aid transfer records from all colleges previously attended; and (3) other clarifying information requested by the Financial Aid Center.
Upon receipt of all documentation, the applicant's file is evaluated to determine eligibility for financial aid. A student is automatically considered for all programs
for which he/she qualifies at the University by submitting the FAF, SAAC, and appropriate supporting documents. All loan, grant and work programs are available for the academic year, however, work-study typically is available for summer session.

## Financial Aid Eligibility

To determine eligibility the standard need analysis system of the College Scholarship Service is used. This system allows the Financial Aid Center to analyze family financial strength and ability to contribute toward the cost of attending CSULB. Depending upon support status, the parental contribution, the applicant's (and spouse's) earnings from employment, savings, asset contribution, and other resources are then subtracted from the student's educational expenses to arrive at financial need. A "package" consisting of various types of funds (loans, grants, work) is awarded to meet full need.

## Notification of A wards

All applicants who submit completed files by April 15 will be mailed their award notification by June 15. Applications completed after the deadline date will go on an alternate list and will only be considered if funds are available after fall registration. Upon the student's acceptance of the award, funds are reserved at the beginning of each academic term. The Business Office disburses financial aid in instatlments each semester according to the schedule accompanying award notification.

## Unit Load and Citizenship Requirements

In addition to demonstration of financial aid eligibility, all undergraduate and graduate applicants must be in good standing, be enrolled at least half-time and show satisfactory academic performance. Full-time undergraduate students must maintain a minimum academic course load of 12 semester units (complete 24 units per academic year). Undergraduate students attending half-time must carry a minimum of 6 units per semester (complete 12 units per academic year). For graduate students, the minimum full-time course load is 8 graduate level units; 4 units of graduate level course work constitutes half-time status. Failure to complete the required number of units may disqualify a student for renewal of inancial aid.

To receive federal or state funds, a student must be a U.S. citizen or permanent resident of the United States.

## Students Owing Educational Debts

Loans are not given to any student with a history of non-payment of debts. A student who defaults on any loan made by CSULB or under the federally insured or guaranteed loan program will be denied further aid. A student who owes a refund on grants previously received under the Basic Educational Opportunity Grant or Supplemental Educational Opportunity Grant Program will not receive funds from the University until corrective action is taken. Students are barred from discharging after leaving the University.

## Appeal Procedure

All students have the option of discussing their aid award with a financial aid counselor and appealing decisions. Petitions for appeal may be obtained from the intake advisors and are acted upon by the Associate Director and Director of Appeals Committee for final review and decision.

## Campus Financial Aid Programs

1. National Direct Student Loans (NDSL)

The NDSL is a federal program providing long-term, low interest loans to both graduate and undergraduate students. Students may borrow up to a maximum of $\$ 2,500$ for the first two years; up to $\$ 5,000$ for the bachelor's degree; and up to a cumulative total of $\$ 10,000$ for undergraduate and graduate or professional study. The amount will depend upon availability of funds, determined eligibility, and the number of units carried. The interest rate is 3 per cent on the unpaid principal. Repayment of loan principal and interest at a minimum of $\$ 30$ per month begins nine months after graduation or withdrawal from the University and may extend over a 10 -year period. Repayment is deferred as long as a student is enrolled at least half-time or serving in the U.S. Armed Forces, VISTA, or the Peace Corps. There are cancellation provisions for full-time teaching in designated low-income schools, teaching the handicapped, and for active duty in the Armed Services.

A "revolving fund" is established from the collection of NDSL which provides for the needs of future generations of students. The promissory note, signed upon receipt of NDSL money, is a legally binding contract in which the student promises to pay the debt. CSULB must follow due diligence procedures in collecting this loan, even if it means using a collection agency or going through legal proceedings to recover the loan. Students have both a moral and legal responsibility to repay loans as agreed so the next needy person will not be denied an education for lack of money.

The NDSL gives students the opportunity to borrow money against future income. For students who have not established credit, the NDSL provides the opportunity to establish a good credit history through prompt loan repayments.
2. Supplemental Educational Opportunity Grant (SEOG)

The SEOG is a federally sponsored program for undergraduate students with exceptional financial need. Awards range from $\$ 200$ to $\$ 1,500$ per academic year and cannot exceed $\$ 4,000$ in total for all undergraduate years. Grants cannot exceed one-half of the total assistance provided the recipient. There are no work or repayment requirements for grants.

## 3. College Work-Study (CWS)

The CWS program is a federally funded employment program to expand parttime job opportunities for students in financial need. Students awarded CWS are placed in jobs according to their skills, career and academic goals and must see the Financial Aid Center CWS Coordinator for job referral. Positions are available on campus or with public or private, non-profit organizations off campus. Students may work up to 20 hours per week while classes are in session or 40 hours per week during vacation periods.
4. California State Educational Opportunity Program Grants (EOP)

EOP grants are provided by the State of California for a designated number of undergraduate students admitted to one of The California State University and Colleges under the Educational Opportunity Program. Eligibility is determined by the same need criteria as federal financial aid programs. Grants range from $\$ 200$ to $\$ 1,000$ for a maximum of ten semesters. Students also receive special academic counseling and tutorial assistance when needed. Further information may be obtained by contacting the EOP Office on campus.
5. Law Enforcement Education Program Loans and Grants (LEEP)

In-service law enforcement officers who are pursuing an academic program related to criminal justice are eligible for grants covering the cost of fees and
books. LEEP applicants on an academic leave from employment who are enrolled full-time are eligible for grants covering the cost of fees and books.

## 6. Federal Nursing Student Loans and Scholarships (NSLP)

This program provides low-interest loans to undergraduate and graduate students demonstrating financial need who are enrolled in the Department of Nursing. A nursing student may be eligible to borrow up to a maximum of $\$ 2,500$ for an academic year ( $\$ 10,000$ aggregate maximum). Repayment of the loan (plus 3 per cent interest per year) begins nine months after graduation or withdrawal from the nursing program. There is a maximum ten-year period in which to repay the loan. Under certain circumstances repayment of the loan may be deferred. For details contact the Financial Aid Center.
The Scholarship Program is designed to assist undergraduate and graduate students of exceptional financial need enrolled in the Department of Nursing. A nursing student may receive up to $\$ 2,000$ per academic year depending upon computed need.

## University Scholarships

The University scholarship committee and the Financial Aid Center administer a limited number of small scholarships. Most scholarships are awarded to students already in attendance at the University on the basis of academic excellence. Some scholarships are based on specific degree programs and are awarded directly by the department. Students may consult with their academic department or the Financial Aid Center regarding all scholarships.

Graduate Assistantships and Teaching Assistantships
Students interested in graduate assistantships and teaching assistantships should apply directly to the department of their academic major.

## State Graduate Fellowships

Fellowships are competitively available only to students pursuing a recognized or professional sime basis and who will enter their first or second year of graduate Graduate Record Examinationg in the fall semester. Qualifications depend upon Graduate Record Examination test scores, grade-point average and California to entry into graduate school. Application come early during the fall term prior Aid Center and the Office Gial may also be requested from the California Student Aid November. Information Street, Sacramento, CA 95814.

Winners will be selected
otential for success: consideration ability, achievement and backgrounds. Scholarships are for an amount given to students from disadvantaged differ among colleges according to their tuition and fees fees at CSULB. Awards

## Other Student Aid Programs

The following programs are administered by other agencies and coordinated by the Financial Aid Center:

## Cal Grant A

Cal Grant A, formerly the California State Scholarship, is awarded by the State of California to entering and continuing undergraduate students who are both U.S citizens or permanent residents and California residents. Cal Grant A awards are (\$105 per semester at CSULB) at any of the state colleges and are for fees only students applying to the University miate colleges and universities. New Application for California (SAAC) that they are indicate on the Student Aid Both new and continuing University students applying for the Cal Grant A. Supplement for Cal Grant A. Applications may stude must complete a Program Aid Center, high school counselors, or by cony obtained from the Financial Commission, 1410Fifth Street, Sacramento. California 95814.

Cal Grant B
Cal Grant B, formerly the College Opportunity Grant, is awarded by the State of California to entering undergraduate students who have not completed more than one semester of college. Applicants must be both U.S. citizens, or permanent residents, and California residents, and must demonstrate substantial financial need. Grants vary depending on educational costs; the maximum award for a CSUC student is $\$ 1,100$ per academic year for the first year. In addition, fees are normally provided in the second, third, and fourth years. The grant is renewable for four years.
New students applying to the University must indicate on the CSUC Student Aid Application for California (SAAC) that they are is also applying for Cal Grant B and must complete a Program Supplement. Information regarding the grant may be obtained from the Financial Aid Center, high school counselors, or by contacting the California Student Aid Commission, 1410 Fifth Street, Sacramento, California 95814.

## Basic Educational Opportunity Grant Program (BEOG)

The Basic Educational Opportunity Grant Program is a federal aid program designed to provide financial assistance to undergraduate students who demonstrate financial need under the guidelines of the program. Grants range from $\$ 200$ to $\$ 1,800$ per academic year. Once a student is determined eligible to the EFOG, the amount of the award is based on the cost of education at the school attended and enrollment on a half-time, three-quarter-time, or full-time basis. Eligibility is limited to U.S. citizens, permanent residents, and refugees.

After an applicant has completed the SAAC and forwarded it to the College Scholarship Service, the applicant will be sent a Student Eligibility Report (SER). The Student Eligibility Report must be submitted to the Financial Aid Center to be processed for a basic grant award.

## Federally Insured Student Loans (FISL)

The Federally Insured Student Loan Program enables eligible students to obtain oans through banks, credit unions, and other lending institutions outside of the University. During the time the student is enrolled at least half-time, the federal government pays the interest on cumulative borrowed.

Federal regulations allow any student to apply for the Federally Insured Student Loan providing the student: (1) is enrolled in and in good standing or has been accepted for enroliment at an eligible school; (2) is enrolled as at least a half-time student; and (3) is a citizen of the United States or is in the United States for other than a temporary purpose. Loan maximums are $\$ 2,500$ per year for undergraduate students ( $\$ 7,500$ total for all loans), and $\$ 5,000$ per year for graduate students ( $\$ 15,000$ total for all loans). Local lender policy is available from the Financial Aid Center.

See the Financial Aid Center for information on repayment.

## Alan Pattee Scholarships

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 are not charged fees or tuition of any kind at any California State University or College, according to the Alan Pattee Scholarship Act, Education Code Section 68121. Students qualifying for these benefits are known as Alan Pattee scholars. For further information contact the Admissions and Records Office, which determines eligibility.

## Other Types of Financial Assistance

## Emergency Loans

Emergency loans are available from the Financial Aid Center for a maximum of $\$ 150$ on a $30-90$ day repayment basis. The purpose of the short-term loan is to assist students with a temporary emergency situation. These loans take three days for processing and carry no interest charges.

## Bureau of Indian Affairs (BIA) Grants

Students who are at least one-fourth American Indian, Eskimo, or Aleut may apply for a BIA grant. The amount of the grant depends upon financial need and availability of funds. Students must complete an application for financial aid and then contact a financial aid counselor to complete a separate form.

## Cooperative Education (CO-OP)

The Cooperative Education Office places students in career or academic related positions with corporations, businesses, agencies and institutions. Students are paid at normal entry-evel wages. Minimum periods of employment for full-time Cooperative Education placements are one semester. For part-time placements, a minimum of 20 hours is required. Summer internships are also available. Contact the Experiential Learning Center, University Union, Room 110.

## Social Security Benefits

If parents receive Social Security retirement or disability benefits, or if they were eligible for these benefits but are deceased, the children may apply for monthly educational benefits. Contact the local Social Security Office for applications and information.

## Student Part-Time Employment

Listings are available and assistance is offered in the Financial Aid Center to students interested in part-time employment.

Several aid programs available to students at the University which are not handled by the Financial Aid Center include the following

## Veteran's and Dependent's Benefits

Veterans or dependents of veterans may be eligible for benefits under the following programs: Grants, these include regular GI Bill for veterans, disability compensation for disabled veterans and many other federal and state grants for eligible children, wives and widows of MIAs, deceased or disabled veterans; VA Work Study for full-time students on the GI bill who are paid the current hourly minimum wage, tax free for employment in any VA facility; and Short Term Loans provided from a revolving loan fund by the AMVET Department of California Service Foundation.

Any student interested in veteran's benefits should contact the Veterans' Affairs Office, Student Services/Administration Building 267, 498-5436.

## Vocational Rehabilitation Services

Students who have a physical, emotional, or other disability which handicaps them vocationally may be eligible for the services of the State Department of Rehabilitation. These services include vocational counseling and guidance training (with payment of costs such as books, fees, tuition, etc.) and job placement. Under certain circumstances students may also qualify for help with medical needs, living expenses, and transportation.

Appointments may be made by contacting the State Department of Rehabilitation in Long Beach or the cam pus Handicapped Student Services Center.

## Aid to Families with Dependent Children (AFDC)

For a single parent without employment or other sources of support, there is the AFDC program administered by the County Department of Public Social Services
(DPSS).

## Miscellaneous

Some scholarships and fellowships are not administered by the University. Interested applicants should consult the Scholarship Information Section of the University Library or any public library.

## Estimated Expenses

Students should be prepared to meet expenses for fees at the time of registration. Books should be purchased when classes begin. Other expenses are ongoing and must be anticipated monthly and included in the total cost of attendance. Expenses generally go up an average six to eight percent per year Actual costs depend upon where the student lives and if there are dependen children. Financial aid programs are designed to help students meet standard University-related expenses during the academic year. The following budgets wil assist students in planning costs for average expenses: (Costs include University fees, books and supplies, room and board, personal miscellaneous and transportation based on a standard 1979-80 CSULB budget.) Student living at home with parents-nine month term-\$2,355 Student living in a residence hall-nine month term-\$3,195
Single student living off-campus (apartment, house)-twelve-month term-\$5,325 (assumes shared housing)
tSingle student, one dependent living off-campus-twelve-m onth term-\$8,400 Married, spouse not a student, living off-campus-twelve-month term-\$8,400 Out-of-state fees will be added for non-residents of California.

[^2]
# Average Annual Costs and Sources of Funds Per Full-Time Equivalent 

 Student in The California State University and CollegesThe 19 campuses and the Chancellor's Office of The California State University and Colleges are financed primarily through funding provided by the taxpayers of California. Including capital outlay, the CSUC $1978 / 79$ budget totals $\$ 840$ million. Approximately $\$ 815$ million of the $\$ 840$ million total has been budgeted to provide support for a projected 237,080 full-time equivalent (FTE) students. Excluding capital outlay, the average cost per FTE student is $\$ 3,441$ per year. Of this amount, the average student pays $\$ 312$. Included in this average student payment calculation is the amount paid by non-resident students. The remaining $\$ 3,129$ in costs is 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:

## Total 1978/79 CSUC Budget

(Projected Enrollment: 237, 080FTE)

| Funding Source | Amount | Average Cost Per Student (FTE) $\dagger$ |  |
| :---: | :---: | :---: | :---: |
| State Appropriation (Support) | \$695,340,533(a) | \$2,933 | 85.2\% |
| Student Charges ............ | 73,970,331 | $312 \ddagger$ | 9.1\% |
| Federal (Financial Aids) ..... | 46,458,850 | 196 | 5.7\% |
| State Funding (Capital Outlay) | 23,873,000 | $\ddagger \ddagger$ | ¢ $\ddagger$ |
| Total | \$839,642,714 | \$3,441 | , |

[^3]
## Student Affairs Division

## Vice President for Student Affairs

The Vice President for Student Affairs is responsible for the management, supervision and coordination of the Student Affairs Division
The Student Affairs Division is particularly dedicated to assisting students in times of difficulty and stress, whether the problem is educational, physical or emotional. The division attempts to provide programs and activities which will enhance the students' social awareness and growth as well as assist in achieving academic and career success

The division also deals with problems and questions regarding student rights and responsibilities.

The major components of the division are as follows: Vice President for Studen Affairs; Career Planning and Placement; Counseling and Human Development Services; Experiential Learning Center, including EPIC and Cooperative Education, Health Services; Housing; International Education Center; Office of Student Affairs; Sports, Athletics and Recreation; Student Activities: Student Development Programs; Testing and University Student Union. In addition, there are specialized programs designed to further serve and assist certain groups of students. These include a Veterans' Affairs Office, the Handicapped Students Services, an educational program associated with the State Department of Correction, tutorial programs in the community, a Fair Housing program, Study Abroad, a Learning Assistance Center, the Office for Adult Reentry, a year-round orientation program, a leadership training program and several outreach counseling programs.

## Office of Student Affairs (SS/AD BIdg., Room 211)

The Office of Student Affairs, under the direction of the Vice President for Student Affairs, is responsible for the overall supervision and administration of the University Student Union, the Student Activities department, Handicapped Student Services, Judicial Affairs, Student Government, the Isabel Patterson Child Development Center, the University Orientation Program, and Project Chance.

The Office of Student Affairs provides assistance to students with crises, general information, emergencies, accidents, referrals and grievances. The Dean for Student Affairs feels that co-curricular involvement plays a significant part in student development and in the student's satisfaction with the total University experience, and welcomes opportunities for student conferences as they work to meet the needs and interests of the students

The Office of Student Affairs publishes annually the "Forty-Niner Student Handbook," the "Campus Policies, Information and Regulations," the Judicial Affairs Handbook, literature on Project Chance and Project Share. Copies of these publications may be obtained in the Office of Student Affairs and the University Student Union. The office is also responsible for the interpretation and enforcement of the campus regulations for students. Phone: 498-4181.

## Career Planning and Placement Center

The Career Planning and Placement Center facilitates employment processes for students, alumni and job recruiters, and is a clearinghouse for information vital to career planning and job procurement.

All services of the Career Planning and Placement Center and of the recruiters coming to the campus are made available to the students of California State University, Long Beach without any discrimination on the basis of race, color, religion, national origin, age, handicap, veterans status or sex.

Help is given to those in the process of delineating career goals. This is especially important for lower division students as they formulate educational and employment strategies. Various job fairs, discussion groups and speakers programs are all designed to encourage meaningful career exploration. The Career Resources Center provides a wide selection of materials relating to the world of work. Audio-video presentations are also in the center and available for student use.

More than 500 recruiters conduct interviews with applicants on campus each year. Counselors assist students in preparing for these interviews with job market information, resume preparation, interview techniques, letter writing and other application procedures. Orientation meetings for those beginning the job recruitment process are conducted regularly. Fall graduates should register for this program the first week of the fall semester in which they plan to graduate. Spring and summer session graduates should register at the end of the fall semester preceding the semester they graduate.

Counselors with relevant academic background and practical work experience assist students who seek to find the field which will provide them with maximum satisfaction. The counselors do not literally "place" graduates in jobs; rather, they attempt to create a situation wherein the student is offered the opportunity to explore many possible situations from which he or she may ultimately choose, and the counselors give assistance in the decision making process.

Teacher candidates receive assistance through the School of Education Candidates may maintain files of references which will be duplicated and sent in support of educational job applications
The campus may furnish, upon request, information concerning the subsequent employment of students who graduate from programs or courses of study which have the purpose of preparing students for a particular career field. This information includes data concerning average starting salary and the percentage of previously enrolled students who obtained employment. The information provided may include data collected from either graduates of the campus or graduates of al campuses in The California State University and Colleges. Interested prospective students may request copies of the published information from H. Edward Babbush. Associate Dean and Director of Career Planning and Placement, 1250 Bellflower Blvd., Long Beach, CA. 90840, 498-5551.

## Counseling and Human Development Services

## Counseling and Psychological Services

The Counseling Center offers three types of services to the University community: counseling, psychological assistance and consultation. The purpose of these services is to insure that the university experience will be of the most benefit to students who are enrolled at CSULB.

These three services are offered in a variety of ways by a staff of professionals, trained to help students at the appropriate level from a question of academic procedure to the more serious problems which occur in crisis intervention Consulting psychiatric services are available in the Center and a close relationship is maintained with the Student Health Services.

The staff of the Counseling Center has individual interests and competencies which permit services to be offered to special groups of students. These include veterans, adults returning to campus, handicapped students and minority students The staff includes counselors who are especially concerned with the problems
which are relevant to American Indian, Chicano and Black students.
Other specialized services offered by the staff include individual and group personal counseling, career counseling and testing, learning assistance, marriage counseling, and other services outlined in a brochure which can be obtained from the Counseling Center, in the Student Services/Administration Building, Room 226-Open 8 a.m. to 7 p.m., (Friday 8 a.m. to 5 p.m.). Phone: 498-4001.

## Learning Assistance Center

Located in the University Library, First Floor, East Wing, the Learning Assistance Center is a support service that seeks to help students increase the efficiency and effectiveness of their learning. Housing personal learning skills specialists and special collections of materials such as content glossaries, handbooks, outlines, programmed instruction, audio and audio-visual materials for self-learning and individualized review; plus, diagnostic and prescriptive materials for self-help in study management, textbook study-reading, listening/note-making, exam techniques, memory and concentration, it is accessible nearly 65 hours weekly. Utilizing a systems approach, it is learner-centered with a diagnostic/prescriptive rationale that considers learning to be "individualistic, mathemagenic, and cybernetic."
The Learning Assistance Center serves:

1. learners who want to improve, acquire, review, or maintain personal learning skills. Personal learning skills include time management, task organizational skills, memory, concentration, reading speed, flexibility, comprehension and retention, and computational skills.
2. students whose professors have provided for them course material so that learning can occur with the students choosing place, time, and pace.
3. students who need help to master facts or concepts that give them difficulty in their textbooks or lectures.
4. students who want to prepare for such standardized tests as the Medical College Admission, Law School Admission, Undergraduate Record Exam, Graduate Record Exam, Graduate Management Admission Test, and the National Teacher Exam.
5. international students who wish to improve their conversational command of the American language.
6. any student who needs tutorial help.

For further information phone: $498-5350$ or $498-4192$, or visit the Center.

## Explorations in Communication

This outreach program offers members of the University community an pportunity to meet in small groups to discuss campus issues and concerns of personal development. Phone: 498-4893 or 498-4001.

## Veterans Affairs Office

The Veterans Affairs Office serves as a clearinghouse of services and information for the CSULB student veteran or dependent. Here a student may initiate a request for veterans' benefits, receive information regarding these benefits, and get help with problems involving the Veterans Administration. Short term loans are available to students in temporary financial need. The office coordinates a VA work study program. (For further information on veteran's benefits, short term loans, and VA work study, see the Financial Aid section of this Bulletin.) Also available through this office are tutorial services, learning assistance, and a career information library. The office mails a newsletter to veterans to keep them informed of news of importance to them

All students receiving GI Bill benefits must register with the Veterans Affairs Office each semester in order to continue receiving benefits. The office is in the Student Services/Administration Building room 267, and is open from $8 \mathrm{a} . \mathrm{m}$. to 7 p.m. weekdays. Phone: 498-5436.

## Adult Reentry Counseling Office

Adults who are considering entering the University are encouraged to utilize the services of the Adult Reentry Counseling Office in the Counseling Center. Opportunity is given to explore various options concerning majors, graduate work, or specialized programs. This service is available to those who have not filed application for admission to the University, as well as those who are in the process of applying. In addition, adult students currently enrolled are urged to make use of the counseling services. Both male and female counselors are available.

Career/self-exploration groups are offered which promote self-understanding as related to career decision making for students planning a career after years at home or those seeking a new career.

Special assistance is offered to women who are beginning their college work transferring from a community college, reentering a university after an absence of several years or returning for graduate work. Personalized services include initial exploration of academic background, life experiences, future goals and further education prior to referral to academic advisers. Support and encouragement to help in home-college adjustment is offered through groups and individual contacts. Referral to campus resources is done on a person-to-person basis. Contact the Office for Women Returning to Campus, a service of Adult Reentry Counseling Telephone: 498-4001.

## Systems Consultation

Systems Consultation is a service aimed at organizational development, team building, and conflict resolution among staff, faculty and administrative groups.

## Community Counseling Services:

Services are provided to non-students from the community in the evening and on weekends by the Counseling Center staff (for a fee). Phone: 498-4001.

## Career and Personal Explorations

This is a course designed for, but not restricted to, entering and undeclared students which includes training in life problem-solving and self-management skills; intensive exploration of one's own values, interests and abilities; an intensive career information search; and optional modules. Instruction is by self paced materials, lectures, small group discussions, interviews and inputs from various campus departments. Phone: 498-4001.

## Dropout Intervention

The dropout intervention service includes contact with students on academic probation and personal exit interviews for those who leave the University before graduating to determine why students leave as well as to ascertain ways in which the University can meet student needs. Phone: 498-4001.

## Disabled Student Services

The Disabled Student Services office provides services, programs and activities for use by all disabled students and faculty of the University or visitors. Services include priority registration, registration assistance, fee authorizations from the Department of Rehabilitation, special parking, change of classrooms to accessible locations, counseling and advisement, special adaptive equipment, liaison with repair, referral to encers and attendant lists, emergency wheelchair loan and minor and job and career placement.

Special orientation tours of the campus are available to the disabled student by appointment. All services also are offered to students with temporary disabilities Further information is available from the Disabled Student Services office, 498 -

## Health Services

The Student Health Service, located on State University Drive near the Residence Halls (phone 498-4771), provides outpatient emergency care and first aid for acute illness or injury. This basic medical service, provided for all enrolled students, is without charge since it is covered by the Student Services Fee paid at registration. The Health Service is open from 8:00 a.m. to 7:00 p.m. Monday through Thursday and from 8:00 a.m. to 5:00 p.m. on Friday. Evening only students are given priority Monday through Thursday from 4:00 to 7:00 p.m. During summer sessions, periods between semesters, and on weekdays when classes are not in session, the Student Health Service is open from 8:00 a.m. to $5: 00 \mathrm{p} . \mathrm{m}$. No off-campus calls are made at anytime Medical emergencies arising when the Health Service is closed are directed to the Departm ent of Public Safety (phone 498-4101).

Other medical services provided by the Student Health Service include neaith and psychiatric counseling, immunizations, laboratory tests, x-rays, and physical therapy under the direction of the medical staff. Specialty consultant services include gynecology, dermatology, psychiatry, and minor surgery. Provision is also made for outside referrals in other medical specialties. In addition to basic medical service provided at no charge, there are other optional services available on a fee for service basis, such as Family Planning, pap smears, and elective physical examinations.

The Health Service Pharmacy provides many medications free of charge. Prescriptions for long-term or costly medication must be filled in outside pharmacies.

Physical examinations are not required for enrollment. However, each new student must complete a Health History to be kept on file at the Student Health Service. Students enrolling in physical education assume the responsibility for satisfactory health status appropriate for class activity.

The Student Health Service does not issue excuses from class for injury or ilness except for physical education activity classes. The decision to excuse a student from class is made by the instructor. For information concerning medical withdrawals, see Item 4 under "Withdrawal from Classes or the University," in the Bulletin.

Except on a first aid basis, University medical services are not provided for major, chronic, complicated or severe illness or injury. These are the responsibility of the individual student and his or her family. It is strongly recommended that students obtain supplementary group health, accident and hospital insurance Brochures and applications are available at the Student Health Service. This insurance must be purchased during or shortly following registration.

## Housing

## University Residence Halls

The campus residence hall complex consists of eight halls with a maximum capacity of 868 students. Double rooms and a very limited number of single rooms are available. The room-and-board rate for the academic year is approximately $\$ 1,675-\$ 1,900$, depending on the type of accommodation.

Residence hall application forms and additional information may be obtained from the Director of Housing. Applications for the academic year are accepted after January 1 of the same year, and applications for spring-only are accepted after September 1 of the preceding year.

University housing rules give priority to students who resided in the halls during the preceding semester (excluding summer sessions), according to the date application is received, residents of Callfornia, students under 18 years of age, students living outside a 20 -mile commuting zone and entering freshmen.

## Off-Campus Listing Service

A card file of rental listings is maintained in the Housing Office. These listings include rooms, rooms with board, rentals to share, furnished and unfurnished apartments and houses and a limited number of work-opportunity listings for
students who are interested in working for their room and board or room rent. It is suggested that prospective students visit Long Beach to make such living arrangements since information about these listings cannot be mailed

## Fraternity and Sorority Housing

Most of the fraternities and sororities own or lease homes near the cam pus and provide lodging and meals for their members and pledges. Students interested in affiliating with a sorority or fraternity should contact either the Panhellenic Office (for sororities) or the Intrafraternity Council (for fraternities), Office of Student Activities, University Union.

## Sports, Athletics and Recreation

The University sponsors a complete athletic program which is considered an important aspect of student life. For detailed information see the Physical Education section of this Bulletin.

## International Education Center

The University attracts many students from other countries because of its quality programs and also encourages its American students to take advantage of the many study abroad programs. The International Education Center is the primary office for contact and assistance for all study abroad and for foreign students, including new immigrant and permanent resident students who are nationals of other countries. At present there are over 1,900 students from some 90 foreign countries attending the University. The center provides the following essentia services for these groups:

## Counseling and Advising

A staff of specially trained counselors is available to assist U.S. students interested in study abroad (see section on International Programs in this Bulletin) and also to aid foreign students in becoming accustomed to working in a new educational environment with different demands and requirements and in adjusting to living in a cultural environment with new relationships, living style and pace of life. Students consult with counselors on a wide variety of educational problems selection or change of field of study, unfamiliar examination techniques, study skills, planning for vocation or advanced graduate study, appropriate academic load and anxieties related to academic pressures. Close contact is maintained with students' faculty advisers in academic departments both at the undergraduate and graduate levels. Students' personal problems also are often considered: finances and employment (on which there are legal restrictions); relations with other students, professors and other persons; problems of an ethical, cultural or moral nature; and anxieties encountered in growth toward maturity in personal and interpersonal development. Problems of health, legal difficulties and other unusual matters are referred to sources of specialized assistance in and outside the University. Counselors are on call to assist students in emergency situations.

Students from abroad should review courses listed under International Student Programs. (School of Social and Behavioral Sciences, for FOR courses and School of Humanities for American Language Program). This is especially important for learning American English and meeting certain General Education requirements. A booklet, "Planning your College Education," is available in the International Education Center

## Community Relations

The staff and a corps of volunteers from the International Community Council of Greater Long Beach with the International Student Committee of the Associated Students and representatives of national groups to conduct a continuing orientation program for new foreign students. Community assistance is given to find suitable living accommodations, often with families. Programs of an
educational, social, cultural and recreational nature are sponsored to assist in cross-cultural understanding.

## Administrative Services

The center is the source for applications and information on study abroad experiences. Pamphlets and catalogs on travel opportunities and advice on travel are available. The center also assists students and foreign scholars in complying with regulations of the U.S. Immigration and Naturalization Service. It provides applications for extension of stay, changes of student status, and certificates to permit foreign students to return to the U.S. after leaving the country; and requests to bring dependents to this country. It also issues letters of student standing in the University for consulates and embassies and requests for release of foreign currencies to support students in any critical emergencies. The center coordinates departmental programs and offers classes designed specifically for foreign students.

In assisting students in complying with Immigration regulations, the International Education Center will provide services only to those students who are applying for regular admission to the University or who have been regularly admitted and enrolled and their dependents (see Admission to the University, International (foreign) students). Enrollment in courses through Extended Education does not constitute admission to the University. Such enrollment may be counted as part of "a full course of study" for purposes of maintaining a valid student status under Immigration regulations only when approved in advance by the Director International Education Center, SS/Adm. 204.

Judicial Affairs (Student Services/Administration Building, Room 211)
The Judicial Affairs Office provides assistance with the interpretation and enforcement of campus regulations. Complete copies of the CSULB booklet entitled Policies, Information and Regulations, including a listing of infractions which may result in student disciplinary action under Title 5, Section 41301, of the California Administrative Code, "Probation, Suspension and Expulsion of Students," are available in this office; also available are copies of Executive Order 148, "Student Disciplinary Procedures for the California State University and Colleges." General assistance and aid in directing individuals to the proper procedures, departments and personnel may be obtained in this office.

Alleged violations are investigated primarily through informal office conferences with the involved students. The conferences which are held as a result of impending disciplinary action are: (1) to clarify the referral, the charges or the circumstances involved; (2) to prevent the incidence of, or further occurrences of violations; and (3) to educate as a preventive experience, and to indicate the possible consequences as a result of committing a violation. Discussion is ander possible, alternate paths or solutions are explored.

Student Activities (Plaza Level, University Student Union)
The Student Activities Office offers program advice to campus clubs and organizations and to the Associated Students.

The four professional staff members work with student departmental associations, the year-round orientation program, cultural events, service projects, concerts, the fall festival and the spring $49^{\prime}$ er Banjo, Fiddle and Guitar Festival Activities coordinators assist all of the campus organizations with leadership program and scheduling matters related to their groups. Organization constitutions and officer registration cards are maintained and mail distributed to groups hrough the office. There are over 200 recognized campus organizations in the ollowing categories: recognition and honor societies, professional and academic organizations, special interest groups, political and social action organizations service clubs, ethnic cultural groups, religious organizations, social fraternities and sororities (and auxiliaries to fraternities), coordinating councils and departmental associations.

The Activities staff also advises the various committees and commissions of the Associated Students. The Activities Office is interested in developing programs which meet the co-curricular needs of all campus community. Students are encouraged to bring suggestions and questions to the staff.

## Experiential Learning Center

The Experiential Learning Center serves as the link between the university community (faculty and students) and those public and private agencies interested in the Educational Participation In Communities Program, the Cooperative Education Program or the Summer Internship Program. These programs have been designed to offer currently enrolled students a wide selection of volunteer or paid supervised work experiences.

The interaction between the academic environment and work environment can help students more easily assess their capabilities, clarify values, explore career goals, develop on-the-job skills, and make more meaningful academic choices prior to completing their education.

The Educational Participation In Communities, Cooperative Education and Summer Internship Programs are housed in the Experiential Learning Center which is located on the Mall Level of the University Union, Room 110. Phone: 498-5395.

## Educational Participation In Communities (EPIC)

The Educational Participation In Communities (EPIC) Program provides volunteer opportunities for students who wish to participate in career related field experiences which are complementary to their classroom study. Students may volunteer from three to six hours per week for at least one semester in the following areas: Medical, Legal, Probation, Recreation, Government and Education.

Field experience classes are available. For course description see Experiential Learning Section of this Bulletin.

Cooperative Education (CO-OP)
The Cooperative Education Program (CO-OP) offers students practical on-thejob experience in vocational, educational, or cultural activities with successful professionals in the field. Students may choose from two Cooperative Education plans, the parallel plan for part-time paid work experience or the alternate plan for full-time paid work experience.

Students who qualify for the parallel plan will be placed in career related jobs and will be employed for 20 hours per week for at least one full sem ester.

The alternate plan requires that qualified students take an educational leave of absence for one semester. During this leave of absence, students will be employed for 40 hours per week in their career field. Upon completion of the one semester field experience, the students will return to college full-time.

Field experience classes are available. For course description see Experiential Learning Section of this Bulletin.

## Summer Internships

The Summer Internship Program offers students the opportunity to gain career or academic related experience during the summer break. Summer placements are paid, full-time positions and are available locally or nationally. Internships are available to all majors.

## Fraternities and Sororities

Eleven national Greek social fraternities and seven national sororities have chapters on campus. The fraternities are Acacia, Delta Chi, Kappa Alpha Psi, Kappa Sigma, Omega Psi Phi, Phi Beta Sigma, Phi Kappa Tau, Sigma Alpha Epsilon, Sigma Chi, Sigma Pi, Theta Chi. The sororities are Alpha Kappa Alpha, Alpha Omicron Pi Alpha Phi, Delta Delta Delta, Delta Gamma, Delta Zeta and Gamma Phi Beta

Most of the fraternities and sororities own or lease homes near the campus and provide lodging and meals for their members and pledges. Students interested in affiliating with a sorority or fraternity should contact either the Panhellenic Office
for sororities) or the Interfraternity Council (for fraternities), Office of Student Activities, University Student Union.

## University Radio Station

Radio station KSUL ( 90.1 on the FM dial) provides students the opportunity to gain practical experience in broadcasting. Managed by student directors, the station is advised by the faculty of the Departments of Radio-Television and Journalism, and members of the Long Beach community. It is funded by the School of Humanities, Associated Students and outside sources. KSUL offers a variety format. With its transmitter located in downtown Long Beach, KSUL has a potential audience in excess of 500,000 . KSUL is located in Faculty Office Building 1.

## Student Development Programs

The Office of Student Development Programs (SDP) is directed toward assisting in the admission and retention of low income and minority students who might not otherwise be enrolled in the University due to inadequate prior educational opportunities, and/or inadequate financial support. Programs currently under SDP include the Educational Opportunity Program and the federally-sponsored Student Special Services, Talent Search and Upward Bound programs.

## Educational Opportunity Program

The Educational Opportunity Program (EOP) identifies potential candidates, guides them through the admissions and financial aid process, and provides academic and personal support. EOP provides orientation, academic and personal advisement, and study skills instruction to all students admitted into the program to insure the maximum opportunity for success in the University.

## Student Special Services Program

The Student Special Services Program provides tutorial assistance and small group instruction to students admitted through EOP. First year academic support is provided in the areas of Bilingual Communications, Language Skills, Reading Development Mathematics-Sciences and Social Sciences. In addition, staff assist in the testing and orientation of incoming students and sponsor a summer instructional program in basic academic skills.

## Talent Search/Educational Information Services

The Talent Search/Educational Information Services program provides college advisement for low income youth residing in the greater Long Beach area. Professional and student counselors are stationed at local target high schools and community colleges to provide assistance to students in choosing an appropriate post-secondary educational institution, applying for admission and completing financial aid application materials.

## Upward Bound Program

The Upward Bound Program is a pre-college preparatory program designed to identify and assist low income and minority high school students who demonstrate a potential to succeed in college but suffer from inadequate secondary school preparation. Summer and weekend instructional programs are held in basic subject areas with tutorial and counseling assistance given to each student. The program also facilitates the admission of these students into college through advisement and orientation. Presently the Upward Bound Program is working with five local high schools: Artesia, Centennial, Excelsior, Compton, and Long Beach Polytechnic

## Testing

The Testing Office provides individual testing services to help students with educational, personal or vocational problems. Students seeking help should first contact the Counseling Center for individual interviews so that appropriate tests may be assigned

All entering freshmen and sophomores are required to complete the American College Testing Program (ACT) or the College Entrance Examination Board (CEEB) Scholastic Aptitude Test. Information and applications can be obtained from high
 and all new and returning lower division students (those All first-time frestransferable semester units) who will graduate from the CSUC with fewer than 56 transferable of the 1977-78 and subsequent Bulletins are under the degree requirements of the Test (EPT), with the exceptions of students required to take the English Placen

1. Satisfactory scores on the CSUC English Equivalency Examination,
2. Scores of 3,4 or 5 on the Advance Placement Program English Examilable after Students must take the test at the first a fee.
admission. EPT registration does not require a fee. mathematics
Candidates for the Elementary Education Department are required to take the Aptitude part of the Undergraduate Record Examination.
Aptitude part of the Undergrent Test is required of all students who take certain The Mathematics placement requirements or course prequisites. Students math courses as exif reck specific requirements in the University Bulletin. Exceptions: should check specific requirematics 100 or who have satisfactorily completed Students who plan to enter wathin the past four years.
a college course in calculus within the pastred of all students planning to enroll in
The Chemistry Placement Test is required of all students planning to enroll in Chemistry 111A or Chemistry 300.

All prospective master's degree candidates should check with their advisers or the Testing Office in their first semester of residence regarding specific testing requirements.

Students who miss the regularly scheduled examinations should notify the Testing Office immediately.

The University reserves the right to administer additional tests to all students whenever it is deemed appropriate for the im provement of instruction.

## Admission to the University

Requirements for admission to California State University, Long Beach are in accordance with Title 5, Chapter I, Subchapter 3, of the California Administrative Code. Prospective applicants who are unsure of their status under these requirements are encouraged to consult a high school or community 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.

## Use of Social Security Number

Applicants are required to include their social security number in designated places on applications for admission pursuant to the authority contained in Title 5, California Administrative Code, Section 41201. The social security account number is used as a means of identifying records pertaining to the student as well as identifying the student for purposes of financial aid eligibility and disbursement and the repayment of financial aid and other debts payable to the institution.

## School Relations Office

The School Relations Office provides information about the University and its academic programs to educators, counselors and prospective students. It serves as the contact point for the public to assure prompt responses to inquiries received in this regard. Staff is available to visit high schools and community colleges with information and materials on instructional offerings and services. Educators, counselors and students wishing to visit the campus should contact this office at 498-5358 for appointm ents.

## Undergraduate Application Procedures

Prospective undergraduates, whether applying for part-time or full-time programs of study, in day or evening classes, must file 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. Prospective undergraduates, whether applying for part-time or full-time programs of study, in day or evening classes, must file 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. An alternative choice campus and major may be indicated on the application, but applicants should list as alternative campus only that campus of The California State University and Colleges that they will attend if the first choice
campus cannot accommodate them. Generally, an alternative degree major will be considered at the first choice campus before an application is redirected to an alternative choice campus. Applicants will be considered automatically at the alternative choice campus if the first choice campus cannot accommodate them. Transcripts and other supporting documents should not be submitted until requested by the campus.

## Locally and Systemwide Impacted Programs

Impacted programs are those in which applications received in the first month of the filing period exceed the total spaces available, either locally (at an individual campus) or systemwide. You must make application for an impacted program during the first month of the filing period and may file more than one application and fee. Nonresidents, foreign or domestic, usually are not considered for admission to impacted programs.
High school and comm unity college counselors are advised prior to the opening f the fall filing period which programs will be impacted. Supplementary admission criteria are used by the campuses to determine which applicants will be allocated space in impacted programs.

Locally Impacted Programs
In selecting first-time freshmen and lower division transfers with fewer than 12 transferable semester units, at least one-half of the available space will be reserved for the most highly qualified applicants based on previous academic performance as measured by the eligibility index. High school grade point averages based on grades earned in the final three years of high school exclusive of physical education and military science, as reported by applicants on the application, and test scores received by the campus no later than the end of the first month of the filing period will be used to compute the eligibility index. You shoud take the ACT or SAT test at the earliest date, although the inability of fall 1979 applicants to supply test scores by December 1, 1978, will not jeopardize admission priority. Remaining space may be allocated on the basis of self-declared grade point average or other criteria, details of which will be given applicants by the campuses. Applicants who cannot be accommodated will be considered at the same campus in an alternative major or redirected to an alternative campus where the program is not impacted.

## Systemwide Impacted Programs

The supplementary admission criteria used by the individual campuses to screen applicants to systemwide impacted programs appear periodically in the Counselor's Digest and are sent to all applicants under consideration. Unlike unaccommodated applicants to locally impacted programs who may be redirected to another campus in the same major, unaccommodated applicants to system wide impacted programs may not be redirected in the same major but may choose an alternative major either at the first choice campus or another campus.

## Application Filing Periods

| $\begin{gathered} \text { Terms in } \\ 1979-80 \end{gathered}$ | First Accepted | Filing Period Duration | Student Notification Begins |
| :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { Summer Qtr. } \\ & 1979 \end{aligned}$ | Feb. 1, 1979 | Each campus accepts applications until capacities are reached. Most campuses | March 1979 |
| Fall Sem. or Qtr. 1979 | Nov. 1, 1978 | accept applications up to a month prior to the opening day of the term. Some | Dec. 1978 |
| Winter Qtr. 1980 | June 1, 1979 | campuses will close individual programs as they reach | July 1979 |
| Spring Sem. or Qtr. 1980 | Aug. 1, 1979 | capacity. | Sept. 1979 |

## Space Reservation Notices

Most applicants will receive some form of space reservation notice from their first choice campus within two months of filing the application. A notice that space has been reserved is also a request for records necessary to make the final admission decision. It is an assurance of admission only if evaluation of the applicant's previous academic record indicates that admission requirements have been met. Such a notice is not transferable to another term or to another campus.

## Hardship Petitions

There are established procedures for consideration of qualified applicants who would be faced with extreme hardship if not admitted. Prospective hardship petitioners should write the Admissions Office regarding specific policies governing hardship admission.

## Undergraduate Admission Requirements

First-time freshman eligibility is governed by an eligibility index. The index is computed using the high school grade point average on all course work completed in the last three years of high school, exclusive of physical education and military science; and the ACT composite, or the SAT total score. Thie table of grade point averages, with corresponding test scores and the equation by which the index is computed, is reproduced on p. 63.

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

American College Testing Program,Inc.
Registration Unit, P.O. Box 168
lowa City, Iowa 52240

SAT Address
College Entrance Examination
Board
Box 592
Princeton, New Jersey 08540

## First-Time Freshman Applicants

## (California high school graduates and residents)

Applicants who are graduates of a California high school or legal residents for tuition purposes must have an eligibility index which places them among the upper one-third of California high school graduates. The minimum index is 741 (ACT) or 3072 (SAT). The following table illustrates grade point averages and test scores needed to qualify for admission.
$l$
$\left.\begin{array}{l}\text { Excerpts from Admissions Eligibility Table for } \\ \text { California High School Graduates } \\ \text { GPA }\end{array} r \begin{array}{lrrrrrr} \\ \text { ACT score } & 2.00 \dagger & 2.20 & 2.40 & 2.60 & 2.80 & 3.00 \\ \text { SAT Score } & 35 & 31 & 27 & 23 & 19 & 15 \\ \text { SAT } & 1472 & 1312 & 1142 & 992 & 832 & 672\end{array}\right) 512$
$\dagger$ Below 2.00 not eligible.
$\ddagger$ Above 3.20 eligible with any score.

## First-Time Freshman Applicants (Non-resident

The admissions requirements for non-resident applicants are higher than those or California residents. Applicants who are neither residents for tuition purposes hor graduates of a California high school must have an eligibility index which laces them in the upper one-sixth of California high school graduates. The minimum index for such students is 826 (ACT) or 3402 (SAT).

## First-Time Freshmen Applicants (graduates of secondary schools, etc.,

## in foreign countries)

An applicant who is a graduate of a secondary school in a foreign country or who has equivalent preparation in a foreign country, may be admitted as a first-time freshman if his or her preparation and ability are such that in the judgment of the appropriate campus authority, the probability of academic success at the campus is equivalent to that of eligible California high school graduates.

## First-Time Freshmen Applicants (high school non-graduates)

An applicant who is over 18 years of age, but who has not graduated from high Aool, will be considered for admission only when preparation in all other ways is such that the campus believes promise of academic success is equivalent to that of eligible California high school graduates.

## Undergraduate Transfer Applicants (resident and non-resident)

Transfer admission eligibility is based on transferable college units attempted, rather than on all college units attempted. California Community College transfers should consult their counselors for information on transferability of courses. Applicants in good standing at the last institution attended may be admitted as undergraduate transfers if they meet either of the following requirements.

1. Eligible for admission in freshmen standing (see Freshmen requirements) with a GPA of C (2.0 on a scale where $A=4.0$ ) or better in all transferable college units attempted.
2. Completed at least 56 transferable semester units or 84 transferable quarter units with a GPA of C ( 2.0 on a scale where $A=4.0$ ) or better if a California resident. Non-residents must have a GPA of 2.4 or better.

## International (foreign) Students

Special application forms are required of foreign student applicants. Such forms and directions for their use may be obtained from the Admissions Office. Foreign students are required to submit with their application evidence of competence in the English language as indicated by a minimum TOEFL score of 500, a medical certificate of health, and evidence of financial resources adequate to provide for all expenses (approximately $\$ 435$ United States currency per month) during the period that they expect to be registered as a student in the University.

Among citizens of other countries than the U.S. who do not already hold status as Permanent Resident Aliens (Form 1-151), the University will admit and enroll only those applicants who, through their admission to this University, (1) will be admitted to the U.S. by the Immigration Service to study here or (2) are currently in valid nonimmigrant status in the U.S. or will achieve or continue such status. Enrollment in courses through Extended Education does not constitute admission to the University. For purposes of maintaining valid nonimmigrant student status ( $F$ or J visa) under Immigration regulations, enrollment in courses through Extended

Education will be counted as part of "a full course of study" only when approved in advance of registration by the Director, International Education Center.

All foreign students for whom English is a second language are required upon arrival to take the Examination in English as a Second Language (EESL) and enrol in any necessary class in English as a second language. In some cases this will mean that students will be required to take reduced course loads in their major field until English proficiency can be demonstrated in the English classes. The requirements cannot be postponed

Admission of foreign graduate students will involve consultation with the graduate adviser from the department or school to which the student is applying for study. Scholastically eligible foreign graduate students may be admitted, dependent upon the preparation of the student as assessed by the Admissions Officer and the graduate adviser of the appropriate school or department. The graduate adviser of the appropriate school or department in consultation with the Admissions Officer and the Director of the American Language Program will decide the English standard to be applied to foreign students applying to that school.

## Auditors

Persons who have not been accepted by the University for the semester they wish to attend may request permission to audit courses only after the close of registration. Applicants must present to the Admissions Office written authorization from the instructor of the course they wish to audit, after which the Admissions Office will issue a class admission card upon payment of regular fees. Once enrolled, the student is restricted to auditor status and may not apply for credit at any time for work completed during the semester restricted to audit.

Other students who have been accepted by the University and registers for credit may in addition audit courses. See the regulation under "Grades and Administrative Symbols." At the end of the semester the instructor will report audit on the grade sheet to the Records Office. However, such students may, in a later session, enroll in the course audited previously and complete it for credit.

## Summer Session Students

Students who do not intend to become candidates for degrees or credentials at the University need not file an application for admission nor transcripts of record. Registration for credit in the summer session is limited to graduates of accredited high schools and to persons of sufficient maturity to profit by enrollment in couses offered. Adults who do not wish to enrol for credit may register as auditors with the approval of the instructor and payment of fees. Registration in the summer session does not insure the privilege of enrolling in the fall semester. Students entering the University during the summer session who wish to re-enroll in the fall semester must file application and the necessary official transcripts of record at the Admissions Office and receive a registration permit before the opening of the fall semester.

## Other Applicants

Applicants not admissable under one of the preceding provisions should enroll in a community college or other appropriate institution.

## Applicants with Particular Majors

Applicants who do not meet the preceding provisions may be admitted to the University for the purpose of pursuing a major for which appropriate course work is not offered at the college from which they seek to transfer when they meet all of the following:

1. They have completed all appropriate course work offered.
2. They have attained a grade point average of $2.0(\mathrm{C})$ in all transferable college work attempted.
3. They were in good standing in the last college attended.

They can, in the judgement of the University, succeed in that degree objective.

## Returning Students

Any student previously enrolled in the University who has been absent more than A apply for admission and pay the application fee as though a new student. Students who have enrolled previously only in summer sessions or extension courses at the Who have
Any解 fourth week of instruction, must file a complete application with the Office of Admissions and Records for admission the following semester. The application fee will waived unless the person attended or is in attendance at a college elsewhere during the absence

## High School Students

Students still enrolled in high school will be considered for enrollment in certain special programs if recommended by the principal and if preparation is equivalent to that required of eligible California high school graduates. Such admission is only for a given program and does not constitute the right to continued enrollment.

## Recommended Preparation

Overall excellence of performance in high school subjects and evidence of academic potential provide the basis for admission at California State University Long Beach. While no course pattern is required, the applicant to be properly prepared to undertake a full program of studies and particularly to pursue the required program in General Education, is strongly encouraged to include the following subjects as minimally adequate background for college work:

1. College preparatory English
2. Foreign language.
3. College preparatory mathematics.
4. College preparatory laboratory science
5. College preparatory history and/or social science.
6. Study in speech, music, art, and other subjects contributing to general academic background.

## Eligibility Index

The following chart is used in determining the eligibility of graduates of California high schools (or California legal residents) for freshm an admission to a CSUC campus. Grade point averages are based on work completed in the last three years of high school, exclusive of physical education and military science. Scores shown are SAT Total and the ACT Composite. Students with a given grade point average must present the corresponding test score. Conversely, students with a given ACT or SAT score must present the corresponding grade point average in order to be eligible

The minimum eligibility index is: SAT $=3072$ and $A C T=741$. The 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 com posite ACT score.

|  | A.C.T. | S.A.T. |  | A.C.T. | S.A.T. |  | A.C.T. | SA T |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| G.P.A. | Score | Score | G.P.A. | Score | Score | G.P.A. | Score | Score |
| $(-)^{1}$ |  |  | 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 | $1-)_{2}^{2}$ |  |  |
|  |  |  |  |  |  |  |  |  |

${ }^{1}$ Students earning grade point averages above 3.20 are eligible for admission.
${ }^{2}$ Students earning grade point averages below 2.0 are not eligible for admission

## Transfer of Undergraduate Credit

## From Accredited Community Colleges

A maximum of 70 sem ester units earned in a community college may be applied toward the degree, with the following limitations:
(a) No upper division credit may be allowed for courses taken in a community college.
(b) No credit may be allowed for professional courses in education taken in a community college, other than an introduction to education courses.

## From Accredited Four-Year Colleges

Refer to Residence under Degree Requirements in this Bulletin.

## Extension and Military Credit

A maximum of 24 semester units of extension and correspondence credit may e accepted toward the baccalaureate degree Such credit must be accepted for degree purposes by the institution in which the work was taken. Extension credit may not be used to fulfill the minimum residence requirement

Credit for military service is allowed in accordance with credit recommendations
the American Council on Education. To receive credit, students must file a photostatic copy of their discharge record with the Office of Admissions and Records.

## Acceleration of University Studies

The University provides several means by which students may accelerate their college studies. Students currently enrolled as well as prospective students are urged to acquaint themselves with the various alternatives for acceleration outlined below and are strongly encouraged to take advantage of them. However, each of the following options may be subject to restrictions and regulations within the department concerned. Thus, before applying for any of these options the student should consult with the department concerned to learn its policy on the course or courses in question. Any course or requirement which is not so restricted or regulated may be substituted for in one of the following ways:

Waiver of Course Requirement
Students who feel that previous training has sufficiently prepared them in a certain area may request waivers of specific course requirements. Requests for waiver of course requirements can be made on an application form available in the Office of Admissions and Records. A waiver of specific course requirements does not reduce the total number of credits required for a degree, but it does allow students to take additional courses better suited to their background, interests and needs.

## Credit by Examination

Students may apply also for course credit by examination. Credits earned in this manner will be recorded as CR (credit) on the student's transcript and will be counted toward the total number of units required for the degree although they will not be included in calculation of the grade point average. If a student fails the examination, the grade will not be included on his or her record. A student may take any examination once per academic year, repeating it a maximum of three times. Credit by examination may not be used to fulfill the minimum residence requirement.

The University sets no maximum on the number of credits a student may receive by examination. However, to receive credit in excess of 15 units a petition must be made to the Scholastic Standards Committee through the appropriate department chairperson. A student may not receive credit by examination for any course which is a prerequisite to one for which credit has been received, to remove a grade of $F$ or to satisfy the courses required for a major in a master's degree. Application forms to apply for credit by examination are available in the Office of Admissions and Records.

The following statements of policy should be adopted as governing the rights and limits of departments, regarding such policies as they may wish to adopt in terms of accelerated study:

1. Each department shall adopt a policy statement on credit or waiver by examination, consistent with state law and the governing rules of the University, and shall make such a statement available to any student requesting it. In the absence of a policy statement, all of the courses offered by a given department shall be presumed available for credit or waiver by examination.
2. No department shall be expected to offer credit or waiver by examination in any courses the content or procedure of which it deems academically unsuitable to such examination.
3. No department shall be expected to offer credit or waiver by examination for which the department and its faculty and staff are not in some ways reimbursed, by such means as staffing formula credit, released time, extension or fees.

## Advanced Placement

The University grants credit toward its undergraduate degrees for successful completion of examinations of the Advanced Placement Program of the College Entrance Examination Board. Students who present scores of three or better will be granted six sem ester units of college credit.

## English Placement Test

All lower division students (those who enter with fewer than 56 transferable semester units) are required to take the CSUC English Placement Test (EPT) so that information can be available to help in the selection of appropriate course work in writing skills and to prepare for meeting the graduation requirement. Failure to take the English Placement Test at the earliest opportunity after admission may lead to administrative probation which, according to Section 41300.1 of Title 5, California Administrative Code, and CSUC Executive Order 186, may lead to disqualification from further attendance. The results of the EPT will not affect admissions eligibility.

Information bulletins and registration materials for the EPT will be mailed to all students subject to these requirements. Alternatively, the materials may be obtained from the Office of Admissions and Records. Information on currently available ways to meet the EPT may be obtained from Department of English Humanities Office Building, Room 419.

## Earn College Credit Prior to High School Graduation

High school students in the last semester of their senior year may enroll in a course at the University which is taken concurrently while they are finishing their high school requirements. Outstanding high school students may enroll also in college courses during the summer between their junior and senior year. These programs are particularly useful to students who wish to fulfill the general education requirements early in their college career. Students are accepted for these programs on the bases of their high school record and the recommendation of their principal.

## Admission Procedures

Permission to register in the University requires authorization from the Admissions Office. No student may attend any class without written verification of acceptance by the University and without registering and payment of fees.

## Classification of Students

The class standing of undergraduate students at the time of admission is based on the number of units accepted. Undergraduate students who have completed fewer than 30 units are classified as freshmen; fewer than 60 units, sophomores: fewer than 90 units, juniors; 90 units or more, seniors.

## 3-79140

## Admission of Postbaccalaureate and Graduate Students

## Post-Baccalaureate Application Procedures

All applicants for any type of post-baccalaureate status (e.g., master's degree Alicants, those seeking credentials and those interested in taking courses for personal or professional growth) must file a complete application within the ap accalaureate degree candidates should apply as and need not complete form B. A complete application for post-baccalaureate status includes all of the materials required for undergraduate applicants plus the supplementary graduate admissions application. 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 application fee. Since applicants fort-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. 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.

In order to register for study at the University, a student must be admitted by the dmissions Office. Students holding a baccalaureate degree or its equivalent from an accedited college or university, having been in good standing at the colleges or accredited for graduate universities attended, aded with post-baccalaureate standing.

All students seeking a graduate degree or recommendation for certification for a public school service credential must request the registrars of all colleges or niversities attended to forward official transcripts to the Office of Admissions and necords; transcripts presented by students are not acceptable. However, student ust have a complete copy of their transcript to present to the department faculty us requesting advice about advanced degree or credential programs.

An applicant for graduate admission with a degree objective for whom a complete set of transcripts is not available at the time of registration may be allowed to rgister, pending receipt of the missing transcripts, upon presentation of evidence warranting such action to the Office of Admissions and Records; and were applicable to the appropriate School director or department adviser of raduate studies. This is a tentative or provisional permit; should later information
 work completed under provisional acceptance may not be applied toward graduate degree programs should admission be denied on the basis of non-completion of the baccalaureate.

Applicants seeking financial aid should also complete a "Preliminary Financial Aid" application and submit it with the material specified above.

## Postbaccalaureate Standing. Unclassified

For admission to unclassified postbaccalaureate standing, a student must: (a) hold an acceptable baccalaureate degree from an institution by a regional accrediting association or have completed equivalent academic preparation as determined by an appropriate campus authority; (b) have attained a grade point of at least 2.5 (on a five-point scale) in the last 60 sem ester units attempted; and, (c) have been in good standing at the last college attended. Admission to a California State University or College with postbaccalaureate unclassified standing does not constitute admission to graduate degree curricula.

## Postbaccalaureate Standing. Classified.

A student who is eligible for admission to a California State University or College in unclassified standing may be admitted to classified postbaccalaureate standing for the purpos e of enrolling in a particular postbaccalaureate 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 classified postbaccalaureate 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 she or 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

## Special Action.

An applicant who does not qualify for admission under the previous provisions may be admitted by special action if in the judgment of the appropriate faculty of the department/school concerned there exists acceptable evidence that the applicant possesses sufficient academic, professional and other potential pertinent to her/his educational objectives to merit such action, as shown through aptitude scores, recent academic performance and experiential background. For declared majors, departmental and school standards for special action will apply. Special action for undeclared majors will be determined by the Dean of Graduate Studies.

## Registration Procedures

When admission requirements have been satisfied, the student is ready to register for classes at the University. Generally, registration involves securing the Permit to Register, final health clearance and payment of fees

Students who have been accepted for admission should purchase the Schedule of Classes in the University Bookstore before registration. Registration dates, time and detailed instructions are included in the Schedule of Classes.

Graduate students are not permitted to attend any class nor complete any program requirements for which they have not officially registered.

## Concurrent Enrollment

Students wishing concurrent enrollment at this University and one of the other 18 California State Universities and Colleges must request permission to do so from the Registrar. Concurrent enrollment within The California State University and Colleges system is limited to students who have completed a minimum of one semester and 12 units at CSULB with a 2.0 grade point average and must have paid fees at CSULB for 12 units or more. No additional fees may be collected after the last day to add classes.

Undergraduate students wishing to have concurrent enrollment at this University and another institution outside of The California State University and

Colleges system must request permission from the Director of Admissions and Records.

No graduate student may register concurrently at this and any other collegiate institution without advance permission. Permission may be given for concurrent enrollment at CSULB and other institutions if recommended by the department enrollment at CSU and approved by the Dean of Graduate Studies. Forms for graduate adviser and approved by the Dean of Graduate Studies. concurrent enrollment may be obtained from the Office of Graduate Studies. When accordingly.

## General Regulations and Procedures

## Changes in Rules and Policies

Although every effort has been made to assure the accuracy of the information in this catalog, students and others who use this catalog should note that laws, rules, and policies change from time to time and that these changes may alter the information contained in this publication. Changes may come in the form of statutes enacted by the Legislature, rules and policies adopted by the Board of Trustees of The California State University and Colleges, by the Chancellor or designee of The California State University and Colleges, or by the President or designee of the institution. Further, it is not possible in a publication of this size to include all of the rules, policies and other information which pertain to the student, the institution, and The'California State University and Colleges. More current or complete information may be obtained from the appropriate department, school, or administrative office.
Nothing in this catalog shall be construed, operate as, or have the effect of an abridgement or a limitation of any rights, powers, or privileges of the Board of Trustees of The California State University and Colleges, the Chancellor of The California State University and Colleges, or the President of the campus. The Trustees, the Chancellor, and the President are authorized by law to adopt, amend, or repeal rules and policies which apply to students. This catalog does not constitute a contract or the terms and conditions of a contract between the student and the institution or The California State University and Colleges. The relationship of the student to the institution is one governed by statute, rules, and policy adopted by the Legislature, the Trustees, the Chancellor, the President and their duly authorized designees

## Nondiscrimination on the Basis of Sex

The California State University and Colleges does not discriminate on the basis of sex in the educational programs or activities it conducts. Title IX of the Education Amendments of 1972, as amended, and the administrative regulations adopted thereunder prohibit discrimination on the basis of sex in education programs and activities operated by CSULB. Such programs and activities include admission of students and employment. Inquiries concerning the application of Title IX to programs and activities of CSULB may be referred to Jan Howell, the campus officer assigned the administrative responsibility of reviewing such matters or to the Regional Director of the Office of Civil Rights, Region 9, 760 Market Street, Room 700, San Francisco, California 94102.

## Nondiscrimination on the Basis of Handicap

The California State University and Colleges does not discriminate on the basis f 504 of the Rehabilitation Act of 1973, as amended, and the regulations adopted thereunder.

More specifically. The California State University and Colleges does not discriminate in admission or access to, or treatment or employment in, its programs and activities. John W. Shainline, Vice President for Student Affairs, has been designated to coordinate the efforts of CSULB to comply with the Act and its implementing regulations. Inquiries concerning compliance may be addressed to this person at CSULB 1250 Bellflower Blvd., Long Beach, California 90840, (213) this pers
$498-5587$.

## Privacy Rights of Students

The federal Family Educational Rights and Privacy Act of 1974 (20 U.S.C. 1232g) regulations adopted thereunder (45 C.F.R. 99) and California Education Cod Section 67100 et seq., set out requirements designed to protect the privacy of students concerning their records maintained by the campus. Specifically, the statute and regulations govern (1) access to student records maintained by the campus, and (2) the release of such records. In brief, the law provides that the campus must provide students access to official records directly related to the student and an opportunity for a hearing to challenge such records on the grounds that they are inaccurate, misleading or otherwise inappropriate; the right to a hearing under the law does not include any right to challenge the appropriateness of a grade as determined by the instructor. The law generally requires that written consent of the student be received before releasing personally identifiable data about the student from records to other than a specified list of exceptions. The institution has adopted a set of policies and procedures concerning mplementation of the statutes and the regulations on the campus. Copies of these policies and procedures may be obtained at the Office of Student Affairs, Room 211, SS/A Building.

Among the types of information included in the campus statement of policies and procedures is: 1) the types of student records and the information contained therein; 2) the official responsible for the maintenance of each type of record; 3) the ocation of access lists which indicate persons requesting or receiving information from the record; 4) policies for reviewing and expunging records; 5) the access rights of students; 6) the procedures for challenging the content of student records; 7) the cost which will be charged for reproducing copies of records, and 8) the right of the student to file a complaint with the Department of Health, Education and Welfare. An office and review board have been established by the Department to investigate and adjudicate violations and complaints. The office designated for this purpose is: The Family Educational Rights and Privacy Act Office (FERPA), Department of Health, Education and Welfare, 330 Independence Avenue, SW, Washington, D.C. 20201

The campus is authorized under the Act to release public directory information concerning students. Directory information includes the student's name, address, telephone listing, date and place of birth, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, the most recent previous educational agency or institution attended by the student, and any other information authorized in writing by the student. The above designated information is subject to release by the campus at any time unless the campus has received prior written objection from the student specifying information which the student requests not be released. Written objections should be sent to the Office of Student Affairs (Room 211, SS/A Building).

The campus is authorized to provide access to student records to campus officials and employees who have legitimate educational interests in such access. These persons are those who have responsibilities in connection with the campus; academic, administrative or service functions and who have reason for using student records connected with their campus or other related academic responsibilities

## Grades and Administrative Symbols

## General Policy

. University policy requires that final grades shall be based on at least three and preferably four or more, demonstrations of competence by the student.
2. In no case shall the grade on the final examination count for more than one third of the course grade.
. Instructors are expected to keep a record of students' scores on each of the demonstrations of competence on which the final grade is based.
. Students have a right to be informed promptly of their scores and to review each of their demonstrations of competence with their instructors.
5. Instructors are expected to provide students with an opportunity fo demonstration of competence, relevant to the determination of their final grade in the course, as early as is reasonable and no later than the mid-point of grade in the coursummer session.
6. Instructors are further expected to make clear to their students during the first week of instruction what grading policies and practices will be employed in the class and what rules will apply to withdrawals.
7. If materials submitted for a demonstration of competence are not returned these materials will be retained for one semester by the instructor or, should the instructor be on leave, by the department. A qualified instructor may be appointed by the chair, in the absence of the original instructor, to review the demonstrations of competence with the student.

## Grade

Students' work in each course is recorded in the Records Office on one of seven grades.
A: Performance of the student has been of the highest level, showing sustained excellence in meeting all course responsibilities and exhibiting an unusua degree of intellectual initiative
B: Performance of the student has been at a high level, showing consistent and ffective response in meeting course responsibilities
C: Performance of the student has been at an adequate level, showing understanding of the basic requirements of the course content.
D: Performance of the student has been less than adequate, showing inconsistency in meeting the course requirements and minimal mastery of the basic requirements of the course content.
F: Performance of the student has been such that course requirements have not been met.
CR: Credit-evaluation of work at A, B or C level of competence
NC: Credit evaluation of work at $D$ or $F$ level of competence.
The symbol "I" (incomplete) may be assigned if all of the required course work has not been completed, but there is a possibility of completing the remaining requirements satisfactorily. CR will be used to note satisfactory completion of such courses as student teaching, supervisory and field work. (Examples: Secondary Education 481A-B, Student Teaching in the Secondary Schools; Elementary Education 481, Student Teaching in the Elementary Grades; Education Single Subject 300, Preliminary Directed Field Experiences). Graduate students eceiving grades lower than $C$ in required courses must repeat them to earn a higher grade.

Grades reported to the Admissions and Records Office are official. Correction of grades can be made only by the instructor on the basis of clerical error or grade appeal.

## Credit-No Credit Grading

The present system of credit/no credit for California State University, Long Beach was approved by the Chancellor effective Fall Semester, 1973, for undergraduate students. Graduate students should refer to the "Regulations

Governing Master's Degrees" section of this Bulletin. CR is equivalent to A, B, or C on the traditional scale, and NC is equivalent to D or F. Neither grade counts toward a student's grade point average, but the system is so structured that a student must offset any units graded NC with an equal number of units graded A, or twice as many units graded B , to avoid being placed on probation. The policies governing the availability of CR/NC grading at CSULB are as follows:

CR/NC grading shall be available to any undergraduate students in residence at CSULB in any class or classes they choose, subject to limitations imposed by University or department policy. The University allows a student to elect no more than 24 units in residence, 12 units in upper division cosrses or eight units per semester on a CR/NC basis, excluding courses taken at another institution, courses credit for which are earned by examination or courses at CSULB that are uniformly offered on a CR/NC basis. Subject to School guidelines, departments and interdepartmental programs may regulate the availability of CR/NC grading in courses offered within the department and/or required for degree concentrations controlled by the department. Units taken under the previous pass/fail policy will count toward the total of $24 \mathrm{CR} / \mathrm{NC}$ units.

To receive a grade of CR or NC for a class in which they are enrolled, students must inform the Admissions and Records Office of their preference by the end of the fourth week of instruction, at which time they must (1) have obtained approval from the department offering the course and from the major department; (2) attest to their awareness of the irreversibility of their decision and of the fact that CR/NC grading may not be acceptable to certain graduate schools and employers; and (3) supply certain confidential information requested by the University in its attempt to assess and evaluate the CR/NC system

## Administrative Symbols

## Audit (AU)

Enrollment as an auditor is subject to the permission of the instructor provided that enrollment in any course as an auditor is permitted only after students otherwise eligible to enroll in the course on a credit basis have had an opportunity to do so. Auditors are subject to the same fee structure as credit students and regular class attendance is expected. Once enrolled as an auditor, a student may not change to credit status unless such a change is requested prior to the last day to add classes.

A student who wishes to audit a course must file an Audit Card in the Admissions and Records Office after the end of the regular registration period and by the last day to add classes.

## Incomplete (I)

The "I" symbol signifies that a portion of required course work (normally not more than one-third) has not been completed and evaluated in the prescribed time period due to unforseen, but fully justified, reasons and that there is still a 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. Agreement as to the conditions for removal of the incomplete shall be reduced to writing by the instructor on a "Requirements for Assigning an Incomplete Grade" form. A copy of the agreement is to be given to the student, a copy is to be filed with the department chairperson and a copy is to be filed with the Admissions and Records Office at the time final grades are submitted. 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 on which it was assigned. This limitation prevails whether or not a student maintains continuous enrollment. Failure to complete the assigned work will result in an "incomplete" being counted as equivalent to an " $F$ " for grade point computation but the " 1 " will not be changed to an " $F$ " or "NCR" on the student's transcript. Any extension of this time period must receive prior
approval of the department chairperson. Students should not re-enroll for an incompleted course.

## Report Delayed (RD)

The "RD" symbol may be used in those cases where a delay in the reporting of a grade is due to circumstances beyond the control of the student. The symbol is assigned by the Registrar when the instructor's grades are not available and must be replaced by a more appropriate grading symbol as soon as possible. An "RD" is not included in calculations of grade point average.

## Satisfactory Progress (SP)

The "SP" symbol is used in connection with courses that extend beyond one academic term. The symbol indicates that work in progress has been evaluated as satisfactory to date but that the assignment of a precise grade must await the completion of additional course work. Cumulative enrollment in units attempted may not exceed the total number applicable to the student's educational objective. All work is to be completed within one calendar year of the date of first enrollment and a final grade is to be assigned to all segments of the course on the basis of overall quality. Any extension of this time period must receive prior authorization by the dean of the school.

## Withdrawal (W)

The symbol "W" indicates that the student was permitted to drop a course after the fourth week of instruction with the approval of the instructor and appropriate campus official. It carries no connotation of quality of student performance and is not used in calculating grade point average.

Students are held responsible for completion of every course in which they register. Application for withdrawal from the University or from a class must be officially filed by the student at the Admissions and Records Office whether he or she has ever attended the class or not; otherwise, the student will receive a grade of
" $U$ " (unauthorized incomplete) in the course. Application for withdrawal is made at the Admissions and Records Office.

1. Withdrawals during the first four weeks of instruction. Students may withdraw without prejudice and the course will not appear on their permanent records during this period. To do this a student must file a Complete Withdrawal Application to drop all classes or a Change of Program Card for a specific class or classes along with a Request to Withdraw from a Class Card for every class dropped.
2. Withdrawals after the fourth week of instruction and prior to the final three weeks of instruction. Drops during this period are permissible only for serious and compelling reasons. The procedure for withdrawals during this period are the same as in item No. 1 except that the approval signatures of the instructor and department chairperson are required. The requests and approvals shall state the reasons for the withdrawal. Students should be aware that the definition of "serious and compelling reasons" as applied by faculty and administrators may become narrower as the semester progresses. Copies of such approvals are kept on file in the Admissions and Records Office.
3. Withdrawals during the final three weeks of instruction. Withdrawals during the final three weeks of instruction are not permitted except in cases such as accident or serious illness where the circumstances causing the withdrawal are clearly beyond the student's control and the assignment of an incomplete is not practical. 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. Request for permission to withdraw under these circumstances must be made in writing on forms available at the Admissions and Records Office. The requests and approvals shall state the reasons for the withdrawal. These requests must be approved by the instructor, department chairperson and dean of the school. Copies of such approvals are kept on file in the Admissions and Records Office.
4. Medical withdrawals. A student who becomes seriously ill or injured, or is hospitalized and hence is unable to complete the academic term may withdraw without academic penalty. A Physician's Statement for medical withdrawal without academic penaly. A Phe completed by the student's obtainable from the Student Health Service, must be completed by the student s attending physician and submitted to the Medical Director. Additional evaluation by the Director of Financial Aid may be required for those students receiving financial aid. The Health Service, upon approval of such a request, will forward its recommendation to the Admissions and Records Office.
5. Unauthorized incomplete (U). The symbol "U" indicates that an enrolled ludent did not withdraw from a course but failed to complete course studen requirements. It is used when, in the opinion of the instructor, completal assignments or course activities or both were insufficient to make normal evaluation of academic performance possible. For purposes of grade point average and progress point computation, this symbol is equivalent to an " $F$."
6. Instructor withdrawals. An instructor may withdraw a student who has never attended a class by completing an "Instructor Drop" card, and submitting it to the Admissions and Records Office with the accompanying enrollment verification list at the end of the third week of classes. Students, however, should not rely on the instructor's doing this and should officially withdraw from classes themselves to avoid getting "U's" on their records.

An instructor may also withdraw a student who has enrolled in a course requiring "Instructor Permission" if the student has not properly secured this permission before enrolling.

## Adding Classes

Students may add classes for two weeks after classes begin. A student may petition to add classes after the second and no later than the end of the fourth week. No petitions to add classes will be considered after four weeks unless there is a technical error and such addition does not necessitate additional fees.

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## Final Grade Reports

Reports of final grades are mailed to each student at the end of each session.

## Student Grade Record

The Registrar shall eradicate originally awarded grades from official transcripts when the following grade changes are made:

1. Grade change due to a clerical error on the part of the instructor of record.
2. Grade change due to a favorable grade appeal.
3. Grade change due to a resolution of RD (report delayed) grade.

The Registrar shall not eradicate original grades from student transcripts when the following situations occur:

1. Resolution (make-up) of an Incomplete.
2. Repetition of a course.

The Registrar shall indicate some grade or administrative symbol for any student enrolled in a course beyond the fourth week.

## Grade Appeals

Students have the right to appeal their final grades, and only their final grades, in any course. The basis of appeal is the claim that the grade was prejudicially or capriciously assigned. Such an appeal must be initiated by the student who claims to be aggrieved within the first regular semester after the assignment of the grade in question, and the appeal must first be directed to the instructor of the course, orally or in writing. If further action in deemed necessary, the student should next direct his or her appeal to the department chairperson, or to such persons as may be designated departmental representatives in grade appeals matters. If the issue remains unresolved, the student may direct the appeal to a grade appeals committee of the school concerned. Information about grade appeals procedures can be obtained from the offices of the school deans.

## Faculty Office Hours

The faculty of the University are available to meet student needs through the maintenance of office hours. Members of the full-time faculty keep a minimum of five office hours a week spaced over at least three days of the week. Part-time faculty keep one office hour a week for each class of their teaching load. In addition to the regularly scheduled office hours required of each faculty member, many members of the faculty are available to students through the scheduling of appointments. Times of office hours are posted outside each faculty office and are available through inquiry at the department office.

## Academic Renewal

A student may petition to have all grades and units received during one or two semesters (or up to three quarter terms) of undergraduate work disregarded in the computation of grade point average and academic standing. The work so disregarded may have been taken at any collegiate-level institution but no work taken during the disregarded terms, even if satisfactory, may apply toward baccalaureate requirements. All grades and units attempted will remain on record. At least five calendar years must have elapsed since the work in question was completed and the student must have subsequently completed 15 semester units with a 3.0 grade point average (or 30 semester units with a 2.5 or 45 semester units with a 2.0) at this University before filing a request for disregarding the course work.

Petitions for disregarding course work shall be submitted to the Records Office. Final determination shall be made by the Vice President for Academic Affairs in consultation with the University Scholastic Standards Committee. The petitioning student must certify that the work to be disregarded was not reflective of his or her present level of academic performance. This certification must include a statement explaining the extenuating circumstances causing the substandard performance during the term in question. The student must also provide evidence that it would be necessary to complete additional units or semesters in order to qualify for the baccalaureate degree if the request were not approved.

## Repetition of Courses

Under the conditions cited in paragraph 2 below, a student who has received a grade of D, F, U or NC in a course taken at CSULB may repeat the course and receive the grade assigned by the instructor under whom the course is repeated. The course may be repeated more than once and, for undergraduate students, the first $D, F, U$ or NC grade will be omitted from the computation of units attempted and grade points earned. Subsequent repetition of the course will be included in the computation of units attempted and grade points earned, but the extra units taken may not be counted toward graduation. All grades received in repetitions of courses will remain on record.

In exercising this option, students must repeat the course at this campus. The student must also file a formal request at the Records Office for permission to have the grade disregarded for grade point computation before the end of the semester in which the course is repeated. This request must be approved by the chairperson/program director of the department in which the course is offered.

A student who receives a CR or $C$ or better in a course may not repeat the course.

## Repeatable Courses

A student may repeat for additional units of credit toward a baccalaureate degree any course specified as repeatable in this Bulletin up to the limits specified. Each department determines the unit limits and any other limitations for courses that may be repeated. In general, except for activity courses, a student may not enroll in a course having the same content as the one for which credit was initially received.

## Scholastic Probation and Disqualification

## Academic Probation

Undergraduate students are placed on academic probation if at any time their umulative grade point average in all college work attempted or their cumulative cumaint average at California State University, Long Beach falls below 2.0 (C) or if during any semester while they are enrolled they fail to earn at least two times as many progress points as all units attempted. Graduate students are placed on academic probation when their cumulative grade point average falls below 3.0

The grade point average is computed by dividing the number of grade points by the number of units attempted. The progress point average is computed by dividing the number of progress points by the number of units attempted. Progress point average is computed for a single term only. Excess progress points from a previous semester may not be used to offset a progress point deficiency from a subsequent semes

Following is a chart showing the points assigned each grade used in computing the grade point average and the progress point average:

Grade Point Computation
A receives 4 points per unit
Breceives 3 points per unit Creceives 2 points per unit Dreceives 1 point per unit
Freceives 0 points per unit U receives 0 points per unit

Progress Point Computation
A receives 4 points per unit
$B$ receives 3 points per unit C receives 2 points per unit D receives 1 point per unit Freceives Opoints per unit $U$ receives 0 points per unit CR receives 2 points per unit NC receives 0 points per unit

Symbols of AU (Audit), RD (Report Delayed), SP (Satisfactory Progress) and W (Withdrawal) are not used in computing the grade point average or the progress point average

Undergraduate students shall be removed from academic probation when their cumulative grade point average in all college work attempted and their cumulative grade point average at California State University, Long Beach is 2.0 (C) or higher and when they earn at least twice as many progress points as all units attempted in a semester.

## Academic Disqualification

Undergraduate students on academic probation are subject to academic disqualification:
A. As a lower division student (less than 60 semester hours of college work completed) if they fall 15 or more grade points below a 2.0 (C) average on all units attempted or on all units attempted at California State University, Long Beach.
B. As a junior ( $60-89$ semester hours of college work completed) if they fall nine or more grade points below a 2.0 (C) average on all units attempted or on all units attempted at California State University, Long Beach.
C. As a senior ( 90 or more sem ester hours of college work completed) if they fall six or more grade points below a 2.0 (C) average on all units attempted or on all units attempted at California State University, Long Beach
D. Regardless of class level or cumulative grade point average, if in any semester while they are on probation they fail to earn at least twice as many progress points as units attempted.
In addition to the above disqualification standards applicable to students on probation, individuals not on probation may be disqualified when the following circumstances exist:

1. At the end of any semester the student has fewer cumulative grade points than cumulative units attempted, and
2. The cumulative grade point deficiency is so great that in view of the student's overall educational record it seems unlikely that the deficiency will be removed within a reasonable period.

## Administrative-Academic Probation

An undergraduate or graduate student may be placed on administrative cademic probation by action of appropriate campus officials for any of the following reasons:
A. Withdrawal from all or a substantial portion of a program of studies in two successive semesters or in any three semesters.
B. Repeated failure to progress toward the stated degree objective or other program objective (when such failure appears to be due to circumstances within the control of the student).
C. Failure to comply, after due notice, with an academic requirement or regulation which is routine for all students or a defined group of students (example: failure to take placement tests, failure to complete a required practicum).

## Administrative-Academic Disqualification

A student who has been placed on administrative-academic probation may be disqualified from further attendance if:
A. The conditions for removal of administrative-academic probation are not met within the period specified.
B. The student becomes subject to academic probation while on administrativeacademic probation
C. The student becomes subject to administrative-academic probation for the same or similar reason for which he or she has been placed on administrative-academic probation previously, although not currently in such status.

## Reinstatement

In order to be considered for reinstatement to the University, a disqualified student must demonstrate academic ability. This demonstration can be achieved by: (1) completing courses through the Continuing Education and/or Summer Session programs at CSULB, earning grades that reduce the student's grade point deficiency by one-halft; or (2) completing classes at other academic institutions, earning grades that would, if computed with the CSULB academic record, reduce the grade point deficiency by one-half. All classes taken, whether at CSULB or other academic institutions, must be applicable for degree credit. Grades earned at other institutions do not actually reduce the CSULB grade point deficiency or change the CSULB grade point average. Grades earned elsewhere are only indicators of academic ability. Grade changes are not sole indicators of academic ability unless the deficiency of grade points is reduced within the standards.

After reducing the grade point deficiency by one-half and/or demonstrating academic ability at other institutions, $\dagger$ the student may then petition the University Scholastic Standards Committee for reinstatement.

Petition forms are available at the Office of Admissions and Records

[^4]
## Examples

## Progress Point System

## General Principles

1. Academic status is based on both quality of performance and progress toward student's educational objective
2. The grade point average is based on courses in which letter grades are earned.
3. Progress is based on the relationship of registered units attempted to progress points earned.
4. Credit/No Credit course units, while not included GPA computation, are included in progress point computation.

STUDENT A

| CR/NC | Letter graded | Total registered units | Grades | Progress points | Grade points |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $3_{3}^{3}$ | 3 |  | $\begin{aligned} & \text { NC } \\ & \text { NC } \\ & A \\ & A \end{aligned}$ | $\begin{aligned} & 12 \\ & 12 \end{aligned}$ | $\begin{aligned} & i q \\ & 12 \end{aligned}$ |
| 6 |  | Progress OK since student eerned twice as many progress points as registered units |  |  |  |
|  |  | G.P.A. $=4.0$ |  |  |  |

Academic Status: Good Standing
Student A, despite NC grades in two courses, remains in good academic standing because of A grades in the other courses. This illustrates that strong students can withstand some NC grades since the balance of their excellen record sustains them

STUDENT B

| CR/NC | Letter graded | Total registered units | Grades | Progress points | Grode points |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 3 3 | 3 <br> 3 |  | CR NC B B | $\begin{aligned} & 6^{\circ} \\ & 9 \\ & 9 \\ & 9 \end{aligned}$ | 9 |
| 6 | 6 | 12 |  | 24 | 18 |
|  |  | Progress OK since student earned twice as many progress points as registered units. |  |  |  |
|  |  | G.P.A. is 3.0 since asterisked points generated by CR grade are not included in computing G.P.A. |  |  |  |

## Academic Status: Good Standing

"Credit grade is assigned same grade point value as $C$ grade in order to compute student's progress. Neither points or units of CR grade or units of NC grades are used in computing G.P.A.
Student B, like Student A, has an overall record that provides good standing. Student B has B grades in two courses and earned CR (Credit in one of the two other courses. Again, this overall record keeps Student B in good standing.

## STUDENT C

| CR/NC | Letter graded | Total registered units | Grades | Progress points | Grade points |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3 3 3 3 |  | C D C C | 6 3 6 6 | 6 3 6 6 |
|  | 12 | $\left.\right\|^{12} \begin{aligned} & \text { Pro } \\ & \text { studer } \\ & \text { mo } \\ & \text { tere }\end{aligned}$ | C | 21 | 21 |
|  |  |  | nsatisfact d not ear gress poin |  |  |
|  |  | G.P. | 1.75 |  |  |

Academic Status: Probation
Student C is on probation both on progress points and grade points.

## STUDENT D

| REGISTERED UNITS |  |  | PERFORMANCE |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| CR/NC | Letter graded | Total registered units | Grades | Progress points | Grade points |
| 1st Term |  |  |  |  |  |
| 3 3 |  |  | CR NC |  | . |
|  | 3 3 |  | c | $\begin{aligned} & 06 \\ & 6 \end{aligned}$ | 6 |
| 6 | 6 | 12 |  | 18 | 12 |
|  |  | Prosress unsatisfectory |  |  |  |
|  |  |  | $=2.0$ bec | asterisked in computation |  |

Academic Status: placed on Academic Probation


Academic Status: Academic Disqualification

[^5]Student $D$ is at the minimum level (C) in graded courses and, thus, cannot afford any NC grades. Thus, Student $D$ is disqualified after two semesters. Note the difference between this student and Students $A$ and $B$ who have good enough grades to offset the NC grades.

## Grading System



* Credit/No Credit course units are not included in grade point computations; however, ** If not completed within one calendar year, the "In" will be counted as an "Fomputations. point and progress point calculation.


## Student Load

Students who carry 12 units or more in a fall or spring semester are classified as full-time students. Those who carry less than 12 units are part-time students.

Maximum unit load:
Graduates.
First Semester Freshmen

Students on Academic Probation . ................................................... 17
All Other Students .
Summer and Winter Sessions ................ 1 unit per week of attendance
Exceptions to these limits may be made only on the basis of proven academic ability and the feasibility of the student's schedule. Permission must be obtained (prior to registration) from appropriate authorities: in the regular session, from the student's major department, in summer and winter sessions, from the school dean who governs the student's major. (Unclassified majors must consult the Counseling Center.)

A student whose outside employment could be expected to interfere with the normal unit load should reduce his or her academic program accordingly.

In general, students enrolled in teacher education should not register for more than 14 units of course work during the semester of student teaching, including the units for student teaching.

Veterans should inquire about unit load requirements for state and federal benefits.

For graduate student load, see "Regulations Governing Master's Degrees" section of this Bulletin.
Undergraduate international students on non-immigrant visas must carry and omplete a minimum of 12 nis load is authorized by the student's adviser and the International Center. Reduced unit loads may be granted for substantial academic reason or compelling personal reasons beyond the control of the student. Failure to secure such authorization results in violation of student status under Immigration and State Department regulations, warranting discontinuance of enrollment.

## Class Attendance

Students are expected to attend classes regularly because classroom work is one of the necessary and important means of learning and of attaining the educational objectives of the institution.

Students should not miss classes except for valid reasons, such as illness, accidents or participation in officially approved University activities. When a student is absent from classes, it is his or her responsibility to inform instructors of the reason for the absence and to arrange to make up missed assignments and class work insofar as this is possible.

Any student who expects to be absent from the University for two weeks or more for any valid reason, and who has found it difficult to inform his or her instructors, should notify the academic department office and the Office of the Vice President for Student Affairs. The department office will notify the student's instructors of the nature and duration of the extended absence. It remains the responsibility of the student to arrange with instructors to make up any academic work missed.

## Final Examinations

It is the policy in most courses to have several examinations during the semester and a comprehensive final examination. Final examinations are required in all courses for all students, except in certain activity courses or when the Dean of the School authorizes an exception. The general supervision of examinations, and the scheduling and control of final examinations, is the responsibility of the Director of Academic Planning

Permission to take a final examination at a time other than that regularly scheduled must be secured at least one week in advance of any change. The instructor may not change the schedule without authorization from the Dean of the School

## Educational Leave

Any registered undergraduate or graduate student in good academic standing is eligible to request an educational leave. Students requesting such a leave must complete an educational leave form to include an explanation of their reason for seeking an educational leave and a statement of when they intend to resume academic work. The completed form is to be submitted to the student's academic adviser

The minimum initial leave will be one full semester; the maximum will be one calendar year. A student may request, in writing, an extension of leave at least two months prior to its termination. Under no circumstances shall the total of successive leaves exceed two calendar years.

Students returning from an approved educational leave are required to submit an application form but will not be required to pay another application fee if terms of the leave have been satisfied.

Students who plan to enroll for credit at another institution of higher education during the leave period must obtain prior approval from the University. (See educational leave form.)

Applications for an educational leave must be filed with the Admissions and Records Office at least six weeks prior to close of the last semester before leave is taken.

If housing or financial aid is to be requested upon return to the University,
arrangements must be made with the appropriate offices according to their published schedules.

## Change of Objective

The evaluation of credits transferred to the University is based in part upon the objective indicated on the application for admission. Students who are candidates for a certificate program must also file an application card. Students who wish to change their degree or credential objective must file a change of objective form with the Office of Admissions and Records. (See Election of Regulations.)

## Transferability of Credit for Cross-Listed <br> \section*{Interdisciplinary Courses}

Certain interdisciplinary courses are listed in this Bulletin under more than one department. Normally, students will receive credit for such a cross-listed course in the department under which they register for it. They may, however, have the Registrar indicate that this course may be credited to a different department which also lists it, provided that they make this request no later than the end of the semester preceding anticipated graduation.

## Degree Check

Senior and graduate students who expect to receive degrees and/or credentials at the end of any session must complete the Graduation Application card and/or Credential Application card. The appropriate application for June candidates must be filed by the preceding September 15; for February and summer session graduates, by the preceding February 1 at the Admissions and Records Office.

## Credential Programs for Public School Service

Candidates for public school service credentials at the University are advised to familiarize themselves with the requirements for these programs. Descriptions of credential programs appear in the Credential Advisement Handbook. Specific information and applications to individual programs are available in program offices of the School of Education and departmental offices through which they are offered. Application for student teaching and for field work in credential programs must be filed by October 1 for spring semester and March 1 for summer session and fall semester

## Conduct on Campus

Violation of Sections 41301 and 41302 in Article 1, Subchapter 3, Chapter 5, Title 5 of the California Administrative Code can result in disciplinary action on campus.

## Expulsion, Suspension and Probation of Students

41301. Expulsion, Suspension and Probation of Students. Following procedures consonant with due process established pursuant to Section 41304, any student of a campus may be expelled, suspended, placed on probation or given a lesser sanction for one or more of the following causes which must be campus related:
(a) Cheating or plagiarism in connection with an academic program at a campus
(b) Forgery, alteration or misuse of campus documents, records, or identification or knowingly furnishing false information to a campus.
(c) Misrepresentation of oneself or of anganization to be an agent of a campus.
(d) Obstruction or disruption, on or off university property, of the campus educational process, administrative process, or other campus function.
(e) Physical abuse on of off campus property of the person or property of any member of the campus community or of members of his or her family or the threat of such physical abuse.
(f) Theft of, or non-accidental damage to, campus property; or property in the possession of, or owned by, a member of the campus community.
(g) Unauthorized entry into, unauthorized use of, or misuse of cam pus property.
(h) On campus property, the sale or knowing possession of dangerous drugs, restricted dangerous drugs, or narcotics as those terms are used in California statutes, except when lawfully prescribed pursuant to medical or dental care, or when lawfully permitted for the purpose of research, instruction or analysis.
(i) Knowing possession or use of explosives, dangerous chemicals or deadly (i) Knowing possession or use on campus property or at a campus function without prior authorization of the campus president.
(j) Engaging in lewd, indecent, or obscene behavior on campus property or at a campus function.
(k) Abusive behavior directed toward a member of the campus community.
(l) Violation of any order of a campus president, notice of which had been given prior to such violation and during the academic term in which the violation occurs, either by publication in the campus newspaper, or by posting on an official bulletin board designated for this purpose, and which order is not inconsistent with any of the other provisions of this Section.
(m)Soliciting or assisting another to do any act which would subject a student to expulsion, suspension or probation pursuant to this Section.
(n) For purposes of this Article, the following terms are defined:
(1) The term "member of the campus community" is defined as meaning California State University and Colleges Trustees, academic, nonacademic and administrative personnel, students, and other persons while such other persons are on campus property or at a campus function.
(2) The term "campus property" includes:
(A) real or personal property in the possession of, or under the control of the Board of Trustees of the California State University and Colleges, and
(B) all campus feeding, retail, or residence facilities whether operated by a campus or by a campus auxiliary organization.
(3) The term "deadly weapons" includes any instrument or weapon of the kind commonly known as a blackjack, sling shot, billy, sandclub, sandbag, metal knuckles, any dirk, dagger, switchblade knife, pistol, revolver, or any other firearm, any knife having a blade longer than five inches, any razor with an unguarded blade, and any metal pipe or bar used or intended to be used as a club.
(4) The term "behavior" includes conduct and expression.
(5) The term "hazing" means any method of initiation into a student organization or any pastime or amusement engaged in with regard to such an organization which causes, or is likely to cause, bodily danger, or physical or emotional harm, to any member of the campus community; but the term "hazing" does not include customary athletic or other similar contests or competitions.
(o) This Section is not adopted pursuant to Education Code Section 89031.
(p) Notwithstanding any amendment or repeal pursuant to the resolution by which any provision of this Article is amended, all acts and omissions occurring prior to that effective date shall be subject to the provisions of this Article as in effect immediately prior to such effective date.
41302. Expulsion, Suspension or Probation of Students; Fees and Notification. The President of the campus may place on probation, suspend, or expel a student for one or more of the causes enumerated in Section 41301. No fees or tuition paid by or for such student for the semester, quarter, or summer session in which he or
she is suspended or expelled shall be refunded. If the student is readmitted before the close of the semester, quarter, or summer session in which he or she is suspended, no additional tuition or fees shall be required of the student on account of the suspension. In the event that a student who has not reached his or her eighteenth birthday and who is a dependent of his or her parent(s) as defined in Section 152 of the Internal Revenue Code of 1954 is suspended or expelled the President shall immediately notify his or her parent or guardian of the action by registered mail to the last known address, return receipt requested.
During periods of campus emergency, as determined by the President of the individual campus, the President may, after consultation with the Chancellor, place into immediate effect any emergency regulations, procedures, and other measures deemed necessary or appropriate to meet the emergency, safeguard persons and property, and maintain educational activities.

The President may immediately impose an interim suspension in all cases in which there is reasonable cause to believe that such an immediate suspension is required in order to protect lives or property and to insure the maintenance of order. A student so placed on interim suspension shall be given prompt notice of charges and the opportunity for a hearing within ten days of the imposition of interim suspension. During the period of interim suspension, the student shall not, without prior written permission of the President or designated representative, enter any campus of The California State University and Colleges other than to attend the hearing. Violation of any condition of interim suspension shall be grounds for expulsion.

The university or college conducts all disciplinary procedures according to the policies of the Board of Trustees of The California State University and Colleges and adheres to Executive Order No. 148, Student Disciplinary Procedures of the California State University and Colleges, issued March 8, 1972.

The current University regulation on alcoholic beverages is stated in the "CSULB Policies, Information and Regulations" handbook published by the Office of Student Affairs.

Additional detailed information relating to conduct on campus is available in the Office of Student Affairs, and from the Office of the Vice President for Student Affairs.

## Cheating and Plagiarism

California State University, Long Beach has adopted a policy on cheating and plagiarism.

Cheating is defined as the act of obtaining or attempting to obtain credit for work by the use of any dishonest, deceptive or fraudulent means. Examples of cheating would include, but not be limited to the following: copying, either in part or in whole, from another's test or examination; discussion of answers or ideas relating to the answers on an examination or test when such discussion is prohibited by the instructor; obtaining copies of an exam without the permission of the instructor; using notes, "cheat sheets", or otherwise utilizing information or devices not considered appropriate under the prescribed test conditions; plagiarism as defined; altering or interfering with the grading procedures
someone other than the officially enrolled student to represent the same. another and offering them as one's own, without giving credit to the source. Such an act is not plagiarism if it reasonably appears that the thought or idea was arrived at through independent reasoning or logic or where the thought or idea is common knowledge. When sources are used, acknowledgement of the original author or source must be made through appropriate references, i.e., quotation marks, footnotes, etc. Examples of plagiarism include, but are not limited to, the following: the submission of a written work, either in part or in whole, completed by another; failure to give credit in a footnote for ideas, statements, facts or conclusions which rightfully belong to another; failure to use quotation marks when quoting directly from another, whether it be a paragraph, a sentence, or even a part thereof; close and lengthy paraphrasing of another's writing.

One or more of the following actions are available to the faculty member who
suspects a student has been cheating or plagiarizing. These options may be taken by the faculty member to the extent that the faculty member considers the cheating or plagiarism to manifest the student's lack of scholarship or to reflect on the student's lack of academic performance in the course.

1. Review-no action
2. An oral reprimand with emphasis on counseling toward prevention of further occurrences
3. A requirement that the work be repeated
4. A reduction of the grade earned on the specific work in question
5. A reduction in the course grade as a result of Section 4. above
6. Referral to the Dean of Students' Office (see discussion above)

Sanctions from the Dean of Students' Office are pursuant to the authority provided in Section 41301 of Title 5 of the California Administrative Code. Copies of Section 41301 of Title 5 may be found in the University Bulletin and the Campus Regulations, available in the Dean of Students' Office, and the Office of Judicial Affairs. Copies of Chancellor's Executive Order 148, Student Disciplinary Procedures for The California State University and Colleges, are also available upon request. Opportunities for appeal regarding the sanctions from the Dean of Students' Office are provided for students involved in the proceedings as outlined by Executive Order 148.

In addition to the rights described elsewhere in the document, the student is entitled to the following as extracted in pertinent part: to receive notice of the nature of the charges and available evidence, via an informal office conference with the professor; where more than one person has been accused stemming from a common time and incident, to choose to have his case heard separately, or as a member of the group, and decisions rendered accordingly; to have the discussions and notes held confidential except as they may pertain to subsequent legal or administrative proceedings; to appeal relative to the course grade received; to have allegations brought within 120 calendar days of discovery of the possible cheating or plagiarism offense; and to be informed that the policy on cheating and plagiarism exists.

Copies of the entire document are available in every academic departmental office, and in the Office of Student Affairs.

## 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 University dormitory or library fees, or when the student fails to pay for other services provided by the University at the request of the student.

Should a student or former student fail to pay a debt owed to the institution, the institution may "withhold permission to register, to 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 (see Title 5, California Administrative Code, Sections 42380 and 42381). For example, the institution may withhold such a service as furnishing copies of a student's transcript. If a student believes that he or she does not owe all or part of an unpaid obligation, the student should contact the University Business Office. The Business Office, or another office of the University to which the student may be referred by the Business Office, will review the pertinent information, including information the student may wish to present, and will advise the student of its conclusions with respect to the debt.

## Classification and Designation of Courses

## Unit of Credit

The unit of credit is the semester unit and the value for each course is indicated in parentheses following the title. In typical lecture and discussion courses, the number of units indicates the number of class hours per week. Activity courses, laboratory courses, and some lecture and discussion courses require class hours weekly in excess of the number of units of credit specified, as indicated in the Schedule of Classes published for each session. Summer session classes normally require the same number of class hours of instruction per session as are required in regular semester terms for courses having the same unit value.

## Course Numbers and Classification

Lower division courses carry numbers 100-299. Such courses are open to reshmen and sophomores and are primarily designed to provide much of that breadth of understanding known as general education as well as the foundations for the generally more specialized work of the third and fourth years. All such courses are open to upper division and graduate students, but do not count as upper division or graduate work in any curriculum.

Certain courses with a first digit of zero carry no unit credit.
Upper division courses carry numbers $300-499$. Such a course in any area is open o those students who have completed a lower division course, or courses, in the area; except in those cases in which the subject is of such nature that an elementary course demands the maturity of the upper division student, in which case upper division status becomes the prerequisite.

Enrollment of a lower division student in an upper division course requires the approval of the department concerned except where prerequisites have been satisfied and enrollment in upper division courses is necessary to complete the pattern and sequence of the degree major.

Courses numbered 500 through 699 are graduate courses. Courses in the 500 599 series are usually open only to students with acceptable baccalaureate degrees. Courses numbered 600 to 699 focus upon methods and techniques of research (696), directed research (697), development of theses (698), and seminars designed to meet requirements for advanced degrees. Only students who have earned acceptable bachelor's degrees may enroll in these courses.

## Experimental Courses Program

The Experimental Courses Program is designed to encourage educational innovation and experimentation by freeing a limited number of course offerings from the standard rules and procedures. By the program the University hopes to permit a more flexible and rapid response to new situations, ideas and needs, and to encourage new departures in methods of instruction, interdisciplinary learning unit allocations, scheduling, faculty assignments and student-instructor relationships.

Courses will be found in the Schedule of Classes and will be identified with " "E" after the course number in each case.
The student shall be permitted to count no more than 12 units of experimental course credit in the total of 124 for graduation. Classes taken as experimental which have subsequently been approved as regular curricular offerings will be excluded from this limitation, if in the transition from experimental to regular course status there has been no change in content, method of instruction or unit value, as determined by the curriculum committee of the appropriate school Whether a particular experimental course may or may not be used to fulfill General dion sequences will depend upon the decision of the appropriate agency in each case Students planning to enroll in experimental courses should ascertain in advance the requirements which the course may be used to meet. Students should be advised that experimental courses may not be accepted by other institutions for transfer credit.

Graduate students may be given graduate credit for upper division experimental courses. However, no experimental courses shall be applicable to the master's degree program unless approved for inclusion in the University Bulletin prior to the date of the student's graduation.

A maximum of 12 units of experimental courses may apply toward the five-year credential program, of which not more than six upper division units may be allowed for graduate students toward the 30-unit fifth-year program.

Experimental courses may be suggested by student organizations or groups, or by the faculty acting individually or in groups or in their administrative capacity. They must be endorsed by departments and have approval of the dean or curriculum committee of the appropriate school or, in the case of interdisciplinary courses, by a school or joint agency appointed by the deans of the several schools involved. The endorsing agency is responsible for the supervision and evaluation of its segment of the program. Courses may be offered with experimental designations for a maximum of three years after which, on the basis of evaluation, they must either be dropped or proposed for incorporation in the regular curriculum of the University.

## Course Listings

Courses are listed as follows: number, title, semester units (in parentheses), session offered and faculty normally teaching the course. F indicates Fall Session; S indicates Spring Session and SS indicates Summer Session. Many of the courses offered during the fall and spring semesters are offered during the summer. The Summer Session Schedule of Classes should be consulted to determine the particular offering. Courses offered during the summer session only are indicated in this Bulletin. Courses offered only in alternate years are so designated. Included with some of the course numbers is a supplementary letter, such as L for laboratory designation or $A$ and $B$ for year sequence. $A-B$ means that the courses must be taken in sequence but if only one semester's work is completed, the student is allowed credit for that semester. A,B designates related courses which need not be taken in sequence and if only one semester's work is completed, the student is given credit for that semester. An asterisk preceding the course title indicates that the course is acceptable for the master's degree. The University reserves the right to make changes in course offerings without notice.

## Baccalaureate Degrees

## Baccalaureate Degree Requirements

All students seeking a baccalaureate degree must fulfill all of the following requirements:

## 1. General Education

Students in all major fields of study must complete a pattern of courses (40 units arrayed in various categories) to meet the general education requirement. Those students transferring from another college who have not yet completed the requirement should enroll in appropriate courses after consultation with an adviser. For further information about general education see the appropriate section.

## 2. Major

The total number of units and individual subjects required to satisfy specific majors are outlined in detail for the various areas of study.

## 3. Double Major

Although students may not work toward nor receive two degrees concurrently at CSULB, they may complete the requirements for a second major and have this fact noted on their transcript.

## 4. Additional Baccalaureate Degree

A student who wishes to pursue an additional baccalaureate degree and maintain undergraduate status may do so by completing a minimum of 30 units after graduation. The 30 units must include any deficiencies in the general education requirements then in effect and all of the courses for the new degree as specified by the departm ent.

A second semester senior, with advance approval of the Scholastic Standards Committee, may earn a maximum of six units toward the additional degree. Any courses to be applied to the additional degree must be specified and taken in addition to those needed to satisfy the requirements of the previous degree

## 5. Minors and Certificates

A minor consists of a minimum of 18 units (as specified by the department or program), at least nine of which must be upper division. The minor may be in a single subject or interdisciplinary. No courses in the major department may be counted toward the minor. Courses outside the major department may count both toward the minor and toward requirements for the major.

Students should refer to the requirements of the department and school of their
major, to see whether a minor is required for that major. Even if a minor is not required, students may elect to complete one or more minors from those available and have that so noted on their transcript

Students may elect to complete a certificate and it will be noted on their transcript. Undergraduate certificates at CSULB will be awarded only concurrently with, or subsequent to, the awarding of the bachelor's degree.

## 6. Writing Skills Requirement

To qualify for the baccalaureate, each student must be certified proficient in ritten composition in English. Proficiency must be demonstrated by passing an approved certification examination required by the major department or school or by passing the general University examination. The responsibility for developing the skills necessary to pass the examination is the student's.

Every baccalaureate candidate should take the examination during the first nior year. The examination may be retaken as many times as necessary, but no more than once a semester or three times a year (including the Summer Session).

The University Committee on Writing Proficiency shall have the responsibility of proving examinations to be used to demonstrate writing proficiency, of verseeing the administration and grading of the examinations, and of certifying to he Records Office that a student has met this graduation requirement
To cover the costs of administration and scoring, a fee of $\$ 10$ will be charged each time a student takes the examination

## 7. Requirements in United States History, Constitution and American Ideal

To qualify for graduation, all undergraduate students shall demonstrate competence in the Constitution of the United States; in American history, including the study of American institutions and ideals; and in the principles of State and local government established under the Constitution of this State. These requirements may be satisfied by passing a comprehensive examination on these fields prepared and administered by the University or by completing appropriate courses. Students should contact the Chairperson of the Department of Political Science or the Chairperson of the Department of History

## 8. Units

A total of 124 units is required for the bachelor of arts and the bachelor of vational education degrees which must include a minimum of 40 units of upper division work (courses numbered 300 or above).

The bachelor of science degree, which requires from 124 to 132 units, is designed for curricula where a more intensive major field of study is considered a requisite background for vocational competence. The total number of units and individual subjects required to satisfy specific majors in those areas where this degree is offered are outlined in detail for the offerings of the academic divisions. Otherwise, all requirements for the bachelor of science degree are identical with those for the bachelor of arts degree.

A total of 132 units is required for the bachelor of music degree which must include a minimum of 40 units of upper division work.

## 9. Extension Units

A maximum of 24 semester units of extension and correspondence credit may be accepted toward the baccalaureate degree. Such credit must be accepted for degree purposes by the institution in which the work was taken.

Extension work taken at this University may not be used to meet the 30 -unit esidence requirement

## 10. Activity Units

Activity courses are those which provide practice in such areas as music speech, theatre arts, and physical education. Within the 124 -unit requirement, a student may earn credit of not more than eight units in activity courses in any one area, nor more than 20 units in activity courses in all areas

## 11. Scholarship

The minimum scholarship requirement for the bachelor's degree is a grade point average of $2.0(\mathrm{C})$ in all units attempted at the University, as well as a 2.0 (C) average on the student's entire college record. For graduation, a student shall also attain:

1. A $2.0(C)$ average in all courses in the major.
2. A 2.0 (C) average in all courses in the major completed at the University.
3. A 2.0 (C) average in all upper division courses in the major completed at the University.
Students who plan to pursue teacher education programs should recognize that the academic scholarship requirement for certain credentials is a minimum grade of $C$ or better in specified courses and an overall grade point average of 2.5 (C plus) Students on academic probation at the University are not permitted to enroll in education classes

## 12. Residence

Except as otherwise provided in this section, 30 semester units shall be earned in residence in the University. Twenty-four of these units shall be earned in upper division courses and 12 of the units shall be in the major

Extension credit or credit by evaluation shall not be used to fulfill any requirement prescribed by this section; provided, however, that the Chancellor may designate specified extension couses that may be offered for residence credit and may establish policies and procedures under which residence credit may be earned by evaluation.

When the circumstances of an individual case make it appropriate, the appropriate campus authority may authorize the substitution of credit earned at other campuses or institutions for residence credit.

## 13. Faculty Approval

Proficiency of a student in any and all parts of a curriculum is properly ascertained by the faculty of the University. A favorable vote of the faculty shall be required to make a student eligible to receive a degree.

## 14. Election of Regulations for Degree Requirements

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

The term "continuous attendance" means attendance for a regular academic year, except where such attendance is interrupted by illness or by military service.

Failure to remain in continuous attendance will mean that the student must meet the regulations current at the time of resuming the degree program, or those applicable at the time of graduation. A change in the major for the degree automatically carries with such a change the acceptance of the current regulations pertaining to the new course of studies.

## Graduation with Honors

The following criteria applies for graduation with honors:

1. Two University categories shall be identified for honors
a. Students with GPA between 3.50 and 3.74 will be graduated with distinction.
b. Those between 3.75 and 4.00 will be graduated with great distinction.
2. A student may be considered eligible for honors at graduation provided that a minimum of 45 units are earned at California State University, Long Beach. The GPA will be determined from units earned at CSULB plus transferred units.
3. With the approval of the Dean of the School, Departments may elect to honor as many as three of their graduates according to criteria other than GPA.
4. University honors will be noted on the transcript and the diploma; Department honors will also be noted provided that the Department advises he Admissions and Records Office by the last official day of the semester or session

## Honor Lists

Undergraduate students exhibiting outstanding scholastic achievement are honored by being included on the President's or Deans' Honor List. Policies governing the honors list were under revision when this Bulletin was being prepared. For information concerning the honors list please contact the Office of the Vice President for Academic Affairs.

## Phi Beta Kappa

Phi Beta Kappa, founded at the College of William and Mary in 1776, is the oldes and most prestigious honor society for students of the liberal arts and sciences Pursuant upon action taken by the United Chapters of Phi Beta Kappa exactly two hundred years after the original foundation, a chapter was established at California State University, Long Beach in 1977.

Graduating seniors are elected to membership in Phi Beta Kappa on the basis of extraordinary scholarly performance at this University, after detailed study of their records by faculty members who are themselves members of Phi Beta Kappa. No specific action on the part of the student is necessary to initiate consideration. However, students interested in qualifying should note the following minimum requirements:

1) Evidence of broad cultural interests, scholarly achievement, and good character.
2) Residence at CSULB for at least four full semesters ( 60 units) at the time of graduation.
3) A major in one of the liberal arts or sciences, with at least 90 semester hours of credit in liberal subjects. (There are minor exceptions to this rule.)
4) A grade-point average of 3.70 or more in courses taken at this university, with no more than 10 units taken on a CR/NC or similar basis. (There are minor exceptions to this rule.)
5) A knowledge of mathematics at least minimally appropriate to a liberal education. This requirement will normally be interpreted to mean satisfactory completion of course work through Mathematics 115B, 115S, or 122, or their equivalent.
6) A knowledge of a foreign language at least minimally appropriate to a liberal education. This requirement will normally be interpreted to mean satisfactory completion of eight units of foreign language instruction at the college level, or its equivalent.
Inquiries should be directed to the President of the University chapter of Phi Beta Kappa, Dr. Lawrence S. Lerner.

## Baccalaureate Degrees

## Bachelor of Arts Degree

The University is authorized to grant the bachelor of arts degree with majors in the following fields of study:

| American Studies | Geography | Physics |
| :--- | :--- | :--- |
| Anthropology | German | Political Science |
| Art Asian Studies | History | Psychology |
| Biology | Home Economics | Radio-Television |
| Black Studies | Human Development | Recreation |
| Chemistry | Industrial Arts | Religious Studies |
| Communicative Disorders | Journalism | Russian |
| Dance | Liberal Studies | Social Welfare |
| Comparative Literature | Mathematics | Sociology |
| Economics | Mexican American Studies | Spanish |
| English | Music | Special Major |
| Entomology | Philosophy | Speech Communication |
| French | Physical Education | Theatre Arts |

## Bachelor of Fine Arts Degree in Art

## Bachelor of Music Degree

## Bachelor of Science Degree

The University is authorized to grant the bachelor of science degree with majors in the following fields of study:

## Botany

Chemical Engineering
Chemistry
Criminal Justice
Dietetics and
Food Adm inistration
Earth Science

Geology
Health Science Industrial Design Industrial Technology Marine Biology

Microbiology
Nursing
Physical Therapy
Physics
Zoology

## Bachelor of Science Degree in Business Administration

## Accounting <br> Administrative Systems <br> Finance

## Bachelor of Science Degree in Engineering

Biomedical Engineering
Civil Engineering
Computer Engineering

Operations Management Quantitative Methods

Manpower Management Marketing

Bachelor of Vocational Education Degree

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## General Education

## Rationale

Because students spend only a small percentage of their adult lives in formal and organized academic preparation, higher education is-at best-an introduction and an incentive to lifelong learning and to intelligent participation in society. With that in mind the University has sought to provide each student with an opportunity to participate in the following aspects of the learning adventure:

## -Information:

-Methods of Inquiry:
-Basic Skills:

## Qualities of Mind:

The academic major which each student selects provides training in depth within a single discipline. The provision in most majors for a number of free electives allows students to follow personal interests. Beyond these important aspects of every student's academic career lies education for breadth-the opportunity to explore other societies, their cultural variety, and the products of human thought and mechanical ingenuity; the chance to learn new analytical approaches and to evaluate other perspectives and problem-solving techniques; the promise of an introduction to new areas of knowledge and new career options. The general education requirement is the introductory phase of the breadth process.

## Resources

To aid students in the process of developing a meaningful and integrative program in general education the University offers these further forms of assistance
(1) Academic advisement including assistance with general education throughout the year.
(2) A special listing, in the Schedule of Classes, of those courses which the
the raw material for thinking, analysis, reflection and discourse
a training of the intellect in the varieties of methodology developed in the several discipline categories
the ability to analyze ideas and data, to relate these to other materials, to develop arguments at once logical and cogent, to reach conclusions, and to present the results of this process with clarity and style in a variety of communicative media
a respect for data and unpleasant facts; an appreciation for the arts; tolerance, commitment, a taste for learning; perpetual curiosity and a sensitivity to ethical considerations.

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faculty have speciified as being appropriate for the general education requirement in each category.
(3) An Advising Section in the Schedule of Classes with information and suggestions about how to maximize educational opportunities through general education and the wise use of electives.

## Requirements

The present policy of the Board of Trustees of The California State University and Colleges is that students graduating from any CSUC campus must fulfill min mineadth requirements. These minim requirements consist of 40 semester units of courses approved by a campus for general education. At least 32 semester units must be taken in categories defined as natural science, social science, humanities and basic subjects, with at least two courses in each of those categories. Partial or full credit may be transferred from another institution; a community college may, for example, certify that a student has met all of these equirements.
Each campus in to dermine which courses are satisfy general certher full credit has been certified), to add requirements, and to enact other limitations. At this University it is the policy that only courses specifically approved may be used to fulfill the general education requirement. A list of approved courses appears in the Schedule of Classes. It is also the policy of this University that natural science shall include at least one laboratory course, that humanities shall include at least one course in the fine arts, and that basic subjects shall be interpreted as basic communications. In addition; this University has included within the 40 units of breadth requirement a Trustee requirement for competence in American history, government and Constitution; a campus requirement for one course in English composition; and an optional category which allows courses from any school or program on campus to qualify for general education.

Throughout, this University has tried to insure that each student has a great deal of freedom in choosing specific courses, though it is hoped that choices will be made on the basis of a well-thought-out plan which incorporates the principles set forth above. For students who wish to combine this requirement in a meaningful are available. The Liberal Studies core program satisfies all General Education requirements, as do selected courses in the General Honors Program

All of these possibilities are subject to the following limitations. At least 320 the 40 semester units must be chosen from Categories I through V. To satisfy the minimum 40 units of breadth requirement a student may not use more than 15 units in any single department or program, more than nine units in the category in which the student's major is listed, or any courses in the student's major department (with the exception of those courses required to satisfy Category V ). There are, of course, no limits on what a student takes for breadth beyond the first 40 units, and it is the policy of the University to encourage students to broaden their education as much as possible.

The six categories recognized at California State University, Long Beach are defined as follows:
I. Natural Science-Two or more courses (totaling six or more urits). At least one laboratory science course must be included

Courses in the natural science category aim at developing in the student a general understanding of and appreciation for a part of the body of knowledge accumulated by the natural sciences. They seek to acquaint the student with the scientific method, and to foster an understanding of the principles which provide the material basis of natural phenomena
Students in courses in the natural sciences should develop the ability to think analytically, to reason critically and to synthesize information from varied sources through the application of qualitative and quantitative problem solving methods. These courses should enable the student to follow new developments in the natural sciences in intelligent laymen's terms and
should consequently enable the student to think in an informed manner about hum an issues which involve natural phenomena.

Courses which may be used to satisfy the natural science laboratory requirement should provide the student with first-hand experience in the use of the scientific method, the gathering of facts through experiments and observations, the organization of data, and the analysis and interpretation of this information. The student should gain some acquaintance with the methods and techniques used by practicing scientists. Natural science courses which are aimed at training the student in a specific limited set of applied skills rather than acquainting the student with the principles of natural phenomena may not be used for General Education credit.

Courses for which students earn credit in this category are expressly identified as carrying category I credit in the Schedule of Classes.
II. Social Sciences-Two or more courses (totaling six or more units) exclusive of any courses chosen to satisfy the requirements of U.S. History, Government and Constitution, included in category V.

Courses included in category II provide students with a broad introduction to a discipline in the social or behavioral sciences. These courses will emphasize the variety of individual and social experience as seen from a cultural, economic, environmental, historical, political, psychological or sociological perspective. They will assist students to understand how individual behavior, institutions, societies or cultures develop, interact and influence value systems.

Courses included in category II are intended to introduce students to methods of thinking analytically about human behavior based upon knowledge from systematic observations of individuals, groups and institutions in various societies. Such courses should enhance the students' sensitivity to behavior, societies or cultures which may be different from their own.

Courses primarily devoted to statistics, measurement and computer skills are not included in this category.

Courses for which students earn credit in this category are expressly identified as carrying category II credit in the Schedule of Classes.
III. Humanities and Fine Arts-Two or more courses (totaling six or more units).
A. Literature and Philosophy (minimum of 3 units)-Courses in the first subdivision of category III provide students with a realization and appreciation of the cultural heritage of man in what are normally recognized as the Humanities. These courses emphasize the exploration and development of social, ethical, spiritual or intellectual values.
The courses in this category encourage students to develop the spirit of scholarly inquiry, including critical thought, sensitivity to languages and creativity.
B. Fine Arts (minimum of 3 units)-Courses in the second subdivision of category III give students a knowledge of, and experience with, various conceptual and physical approaches to the creation of a work of fine art, combined with theory and relevant historical examples.
The courses focus on developing the student's capacity for understanding and appreciating the visual and performing arts.
Performance and activity courses that are oriented to developing specialized skills are not included in this category.
Courses for which students earn credit in this category are expressly identified as carrying category III credit in the Schedule of Classes.
IV. Basic Communication-Two or more courses (totaling six or more units).

Courses in category IV are intended to develop those personal communication skills which facilitate the student's acquisition and utilization of knowledge in the Natural Sciences, the Social Sciences and the Humanities.
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Students in these courses should develop their verbal or quantitative ability to learn and communicate by

1. speaking and/or writing clearly and effectively in English or a foreign language, or
2. using a quantitative symbolic language in the form of mathematics, statistics, logic or computer programming.

Courses for which students earn credit in this category are expressly identified as carrying category IV credit in the Schedule of Classes.
V. Special Subjects-One course in United States history; one course in United States government and Constitution (Political Science Department); and one course in English composition. The student has the option of receiving credit by examination; departments will make such examinations available. A student who fails any such examination has the option of repeating the examination without penalty, or taking the course(s) which satisfy the requirement. A student who has met any of these requirements prior to enrollment at CSULB is exempt. Unit credit (to be included in the 40 -unit general education requirement total and in the total number of units required for graduation, but not in the student's grade point average) shall be granted for satisfactory completion of examination in these subjects. Credit by examination, however, is subject to conditions specified in this Bulletin.
VI. Optional Electives-Within the total of 40 units required, up to eight units may be selected. All courses in the University may count in this category. They must, however, be outside the School of the student's major, except that units in health science and physical education may be elected under this option by all students except health science and physical education majors.

## Graduate Degrees



A student who plans to become a candidate for a master's degree must hold a bachelor's degree from an accredited institution or have completed equivalent academic preparation as determined by the appropriate department and/or school and certified by the Dean of Graduate Studies. The student must have completed undergraduate coursework substantially equivalent to that required at California State University, Long Beach in the discipline of intended graduate study, or must be prepared to undertake additional work to make up any deficiency. Usually graduate programs are based upon adequate preparation at the undergraduate level. Undergraduate preparation is considered adequate if a candidate has met the upper division requirements of this University for a bachelor's degree in the subject matter area of the master's degree program.

## Nature of Graduate Study

A graduate course represents advanced work in a field of study beyond the upper division level. It demands a higher level of independent critical analysis and a higher degree of specialization than is usually required in an undergraduate course. A graduate course may be conducted in several ways:
(a) As a course designed to organize the results of original research or to expand an advanced field of knowledge.
(b) As a seminar in which the instructor and a small group of graduate students present the results of their special study and original research for group criticism, evaluation, and discussion.
(c) As individual research or creative activity conducted under the supervision of the instructor.
Graduate study is primarily designed to inspire independence of mind and originality in the quest for knowledge, truth, and useful application. Candidates for a master's degree are required to demonstrate mastery in their chosen field of study either through independent research culminating in an acceptable thesis and/or through successfully passing a final comprehensive examination.

Graduate curriculum is designed to provide the student advanced study in a discipline. All courses listed in a master's degree program, including those outside the major field, must be graduate or upper division courses approved by the student's graduate committee and department graduate adviser.

## Degrees Offered

## Civil Engineer Degree

## Master of Arts Degrees:

Anthropology
Art
Asian Studies
Biology
Communicative Disorders
Economics
Education
English
French
Geography
German
History
Home Economics
Industrial Arts

## Linguistics

Mathematics
Music
Philosophy
Physical Education
Physics
Political Science
Psychology
Sociology
Spanish
Special Major (Interdisciplinary Studies)
Speech Communication
Theatre Arts
Vocational Education

Master of Business Administration Degree
Master of Fine Arts in Art

## Master of Public Administration

## Master of Public Health

Master of Science Degrees:

Biochemistry
Business Administration
Chemistry
Civil Engineering
Criminal Justice
Counseling
Electrical Engineering
Engineering

## Geology

Health Science
Mechanical Engineering
Microbiology
Nursing
Physics
Psychology
Recreation Administration
Special Education
requirements. Student teaching cannot be included in any master's degree program.
5. A thesis and/or final comprehensive examination must be completed. A minimum of four and a maximum of six semester units shall be allowed for a thesis. Failure of the comprehensive examination or thesis requirement is failure of both options. Thus, a student failing the comprehensive examination may not proceed to the thesis option or vice versa. Once a student has completed a semester of enrollment towards fulfillment of either the comprehensive examination or thesis option, the student may not change from one option to the other without the approval of the faculty concerned, of the department chair and of the appropriate dean or designee.
6. Not less than 24 semester units shall be completed in residence at the University. The Dean of Graduate Studies may authorize department/school approved substitution of credit earned by alternate means for a part of the residence requirement. All units, including continuing education or extension, accepted by transfer for application toward the minimum 30 units required for a master's degree cannot be used to fulfill the minimum unit requirements in the 500/600 series. This 500/600 unit requirement must be completed in the major discipline and in residence at this University.
7. All requirements of the degree program must be completed within seven years of the date the program was initiated. An extension of time beyond the limit may be granted by the Dean of Graduate Studies if warranted by individual circumstances and if the outdated work is validated by comprehensive examination in the relevant course or subject field work, or such other demonstration of competence as may be prescribed by the department and/or school.
8. A graduate student who expects to receive a degree at the end of any semester or summer session must be enrolled during that semester or session and must complete the Graduation Application Card within the firs three weeks of classes of the prior semester. Students completing their degrees in May or in the following summer sessions should file the application by the preceding October 1 . Students completing their degrees in January should file by the preceding February 15 at the Admissions and Records Office. Note: Graduate Studies 700 may be used to fulfill the enrollment requirement if the applicant has completed all degree program coursework prior to the sem ester of graduation.
9. Proficiency of a student in any and all parts of a curriculum is properly ascertained by the faculty of the University. A favorable vote of the faculty is required for a student to receive a master's degree.

## Thesis

No student may register for course 698 (Thesis) unless that student has been advanced to candidacy for the Master's degree (see "Steps to be Taken by the Master's Degree Candidate," paragraphs 3. and 4.) or unless advancement to candidacy will occur in the semester in which initial registration for 698 occurs Prior to registration in 698, the student must have conferred with the departmental graduate adviser and the appropriate faculty members to establish an officially appointed thesis committee and to agree upon a thesis topic.

A thesis will be undertaken only by an individual student. It is stongly recommended that students maintain continuous enrollment in course 698 until the work is completed for a total of not less than four nor more than six units of credit as specified in the student's approved graduate program. Final grade for the thesis will be officially recorded only after all the following steps have been completed: (1) the faculty thesis committee has signed the approval page, (2) the Thesis Reviewer (who is located in the Library, Room 305W) has approved the thesis format, (3) the Dean of Graduate Studies has received the thesis for the University.

Students should check with the Thesis Reviewer for the deadline dates for submission of theses. These dates are usually four weeks prior to the deadline for submission of final grades for the Fall and Spring semesters and two weeks before

## General Requirements for the Master's Degree

The requirements for graduation depend upon the particular master's program undertaken and upon the major field of study. Specific departmental requirements are listed in a later section of this Bulletin. The following requirements apply to all graduate degree programs.

1. The candidate for a master's degree must earn at least a $3.0(B)$ average in all upper division and graduate courses taken at this University after completion of the baccalaureate degree. A course in which no letter grade is assigned will not be used to compute the grade point average. Exceptions to the 3.0 (B) average in all graduate work taken at this University may be made only on the recommendation of the departmental faculty offering the degree and approval by the University Graduate Council
2. At least a $3.0(B)$ average $m$ ust be maintained in the major.
3. No course with a grade lower than C may be applied toward the fulfillment of degree requirements
4. The program for the master's degree must contain a minimum of 30 units in upper division and graduate courses. A minimum of one-half of the units required for the degree shall be in the 500 and/or 600 level series and these shall be completed at this University, consistent with departmental
the end of the appropriate summer sessions. For departments requiring an examination on the thesis, the results of this examination must be reported to the Dean of Graduate Studies prior to the end of the semester in which the student expects to receive the degree.

All theses must conform to the regulations specified in the document titled, Policies for Format of Theses, available in the office of the thesis reviewer. In addition, it should be determined whether the cognizant department or school has approved the use of William G. Campbell and Stephen V. Ballou, Form and Style: Theses, Reports, Term Papers, or Kate L. Turabian, A Manual for Writers of Term Papers, Theses, and Dissertations, both of which are approved by the University Graduate Council. In certain departments there are specific instructions on matters of style beyond those described in Policies for Formats of Theses which are described in departmental or school brochures. Questions regarding special requirements for the preparation of manuscripts should be directed to the departmental graduate adviser, school directors of graduate study, or the Thesis Reviewer. The number of copies of the thesis and their disposition is detailed in Policies for Format of Theses.

## Thesis Committee

A student's thesis committee shall consist of at least three members; at least two shall be full-time faculty members at CSULB. Composition of the thesis committee shall include (1) a full-time faculty member, usually from the departmen onferring the least one person qualified in the area of the thesis topic who need not be the thesis committee chair. The committee shall be responsible for the guidance of the student throughout the thesis effort. Any change in the committee's composition requires justification and must be approved by the appropriate department graduate adviser and/or school Director of Graduate Studies.

## Grading Practices

The committee determines the grade for the thesis; the chair is responsible for canvassing the committee and reporting the grade. Only after the thesis has been completed and after the committee has signed the approval page, shall the grade be submitted.

## Comprehensive Examination

Each department or school requiring a final comprehensive examination determines the content of the examination. Such examinations may be written or oral or both. A faculty committee shall represent the department in preparing questions, administering, and reading the examination. Through the comprehensive examination, the faculty provides an opportunity for the master's degree candidate to demonstrate knowledge of the discipline and analytic ability. Working with the department chair or dean of the school and the appropriate committee, the departmental graduate adviser usually assumes responsibility for scheduling the examinations and for selecting the other faculty members to participate.

Students may not enroll for courses in preparation for the comprehensive examination or take the comprehensive examination unless they have been advanced to candidacy for the master's degree or unless advancement to candidacy will occur in the semester in which the enrollment takes place.

During the first semester of residence, the graduate student should ascertain from the faculty adviser what preparation will be expected. Early in the final semester of study for the degree, the candidate should contact the departmenta graduate adviser to make arrangements for taking the examination. The department or school will notify the Dean of Graduate Studies whether the student has passed or failed the final comprehensive examination. A candidate who has failed will be allowed to take the final comprehensive examination a second time, and the departmental graduate adviser should be contacted for specific procedures for the second attempt. To award a candidate the master's degree for a particular semester, the results of the comprehensive examination must be reported to the Dean of Graduate Studies prior to the end of the semester.

## Graduate Studies 700

Registration in Graduate Studies 700 will be restricted to graduate students who have been advanced to candidacy, have departmental and school approval and require additional utilization of University facilities to complete their thesis or comprehensive examination. This course is a credit/no credit course which does not require class attendance and is administered by the Dean of Graduate Studies. Although no unit credit is added to the student's degree program or transcript, the course is considered as one unit of credit for fee payment purposes. A student may not register for a third consecutive semester of GS 700.

## Steps to be Taken by the Master's Degree Candidate

1. Admission. Every student who intends to complete a master's degree program must apply to the Office of Admissions and Records to obtain admission to the University. The Office of Admissions and Records will notify the student by mail of the action taken and specify the student's academic classification.

The student must request all institutions of higher learning attended to send an official copy of transcripts directly to the Office of Admissions and Records, and where applicable, to the appropriate School director or Department adviser of graduate studies. Transcripts presented to the Admissions Office by the student are not acceptable Graduates of California State University, Long Beach must follow these same procedures when making application to a graduate program.

All candidates for a master's degree must have a complete set of transcripts in their possession when conferring with faculty advisers for program advisement.
2. Graduate Tests. Candidates for advanced degrees in some disciplines may be required to take various admissions and aptitude tests. Each student should refer to the department or school statement in this Bulletin to determine if such a requirement exists. Arrangements must be made at least three weeks before the scheduled examination date for paying fees at the Business Office and presenting the receipt to the Testing Office when registering. For some examinations, such as the Admission Test for Graduate Study in Business

The Schedule of Classes lists the dates on which the tests are administered. Graduates may request professional interpretation of the test results by appointment in the Counseling Office.
3. The Degree Program. A student must consult with the graduate adviser of the department to prepare a tentative degree program. After completing prerequisites and other requirements, the student must formulate an official program and apply for advancement to candidacy.

The department will assign the student a faculty adviser who should be consulted about preparing a degree program. The adviser should have an official evaluation of the student's previous work from the Office of Admissions and Records, although transcripts provided by the student may be used to develop a entative program and discuss degree requirements. When the Admissions Office's valuation and the results of tests are available, the faculty adviser can assist each tudent in drawing up a master's degree program. This program must be approved by the student's faculty adviser, the departmental graduate adviser, and school director of graduate studies or the Dean of Graduate Studies. The program must list the following:

1. Courses required for removal of undergraduate deficiencies
2. All courses taken prior to advancement to candidacy which are to apply toward the 30 -unit minimum
3. Required courses
4. Elective courses

The official degree program as approved serves as a basis for the Records Office's graduation check which is required before the degree can be granted. Students who have not been advanced to candidacy are subject to all changes as ublished in the Bulletin, Policy Statements and certifications.
Graduate degree programs may be revised as the student advances toward the degree. Such revisions must be recommended by the faculty adviser and approved
by the departmental graduate adviser and the school director of graduate studies of the Dean of Graduate Studies

An approved graduate degree program remains in effect as long as a candidate is making satisfactory progress. To insure minimum satisfactory progress toward the degree objective, the student must enroll in at least one session during any 12 month period and complete all degree requirements within seven years of initiating the program. The student may not change the graduate major without filing a new degree program.
A student entering military service after having been admitted to candidacy for an advanced degree will be considered as not having withdrawn from candidacy, provided that the student is inducted, enlisted or called to active duty during a semester in which he is enrolled or not more than one semester thereafter, and provided that the student enrolls for work toward a degree within one calendar year of the date of release from service.
4. Graduate Standing and Advancement to Candidacy. A department or school recommends a student for advancement to candidacy by forwarding a graduate degree program (Step 3) for approval to the school director of graduate studies or the Dean of Graduate Studies. After the student's degree program has been processed and approved, a copy of the completed program and a letter advancing the student to candidacy will be mailed to the candidate, with copies filed with the department or school and the Records Office.

A student must be enrolled in the semester or summer session in which advancement to candidacy takes place, and this must occur no later than one semester or summer session prior to completion of course requirements. Before being considered for advancement to candidacy, the graduate student must have:

1. Completed qualifying examinations and other prerequisite requirements, if any are specified by the area of major concentration.
2. Earned at least a $3.0(\mathrm{~B})$ average in all upper division and graduate courses completed at this University or accepted for transfer to meet degree requirements.
3. Had a graduate degree program approved by the departmental adviser or school director of graduate studies of the candidate's major field or the Dean of Graduate Studies.
4. Thesis (Course 698) and/or the Comprehensive Examination as required by the Degree Program. Refer to the appropriate section of the Bulletin for specific details.
5. Language Requirement. When the department or school lists a language as a requirement for the degree, the student should consult with the graduate adviser and take whatever steps are necessary to prepare for and pass the examination French, German, Latin, Russian, and Spanish are acceptable generally, but some departments limit this group further. When a different language is a specific tool in the work required for the master's degree, the department may recommend the substitution of the language to the Dean of Graduate Studies for approval.
6. Graduation Application Fee. The candidate must file a Graduate Application Card and pay the Graduate Application fee within the first three weeks of the semester preceding the one in which the student expects to complete the last requirement for the degree. The graduation application card may be obtained at the Office of Admissions and Records and must be completed and submitted to the Bookstore at the time the graduation fee is paid. The card should then be presented to the Office of Admissions and Records in order to initiate the graduation records check. The Schedule of Classes lists the dates for filing and paying graduation fees.
7. Commencement. Commencement ceremonies are held annually at the end of the spring semester. Candidates who have completed all requirements for a graduate degree in the period following the last commencement are encouraged to participate. Attendance is, however, a matter of individual choice.
Each school in the University sponsors its own ceremony. Prospective graduates may inquire of time and place at the school or department office in early spring. Special recognition is given to master's degree candidates, usually in the form of a hooding ceremony for each graduate.

## Academic Load

Twelve units per semester is a normal academic load for a full-time graduate student engaged in study toward a master's degree. If a candidate wishes to exceed this limit, it should be discussed with the departmental graduate adviser. The maximum load for graduate students working toward a master's degree is 16 units per semester. Students who are employed full-time should not exceed six units per semester.

Graduate students who wish to register for more than one unit of credit per week of attendance during the summer session must secure advance approval from the Dean of Graduate Studies. Petition forms and information may be obtained in the school offices or Office of Graduate Studies.

## Standard of Scholarship, Disqualification

Every graduate student who has been advanced to candidacy is expected to maintain an average of at least three grade points per unit ( $B$ ) in all upper division and graduate courses attempted. Candidacy for an advanced degree may be revoked if a student's overall grade-point average falls below 3.0 at any time. Students who become subject to dismissal from an advanced degree program will be notified of the action taken by the school director of graduate studies or the Dean of Graduate Studies.

## Waiver of Course Requirement and Credit by Examination

No waiver of course requirements or credit by examination may be used to satisfy master's degree requirements. However, the following rules govern course waivers or credit by examination in satisfying prerequisites for admission to candidacy in any master's degree program.

Any candidate for a master's degree who believes that previous training has provided adequate preparation in a certain area may request a waiver by examination of a specific course prerequisite. Request for such waivers must be made to the department concerned and all such examinations must be approved by the department chair and graduate adviser.

A candidate may also apply for course credit by examination. Such course credit applies only to prerequisite courses and may not be used to satisfy any of the requirements for the master's degree. Requests for such examinations must be made to the department concerned and approved by the department chair. No more than 15 semester units of credit by examination will normally be permitted to satisfy such prerequisites.

All course credit by examination will be recorded as P (Pass) and will not be ncluded in calculation of grade point averages; such credit may not be used to remove a grade of $D$ or $F$ in a course already attempted, nor may course credit by examination be granted for any course which is a prerequisite to one for which credit has been received. The grade of $F$ will be included in the record of any student who requests an examination for course credit and then fails the examination. This grade may not be removed by subsequent examination for credit, and the course must be registered for and successfully completed if required as a prerequisite.

Examinations are interpreted broadly to include whatever activity, test or demonstration the instructor deems appropriate for evaluating understanding, skills, or knowledge required by the objectives of the course. Instructors currently teaching the course shall evaluate and ascribe credit. In semesters when the course is not offered, an instructor who has previously taught the course will assume this responsibility. A score of B or better is necessary to receive a P (Pass) grade and all examinations for credit or waiver of a specific course prerequisite must be filed in the department or school and available to authorized personnel.
Credit by examination is restricted to courses published in the Bulletin.

## Graduate Study in the International Programs

Students planning to participate and receive unit credit toward a master's degree in an International Program should consult with the graduate adviser in the
department of their major and with the Dean of Graduate Studies before entering the program.
Graduate students who have not been admitted to candidacy for a master's degree and who participate in the International Programs may, upon their return to California State University, Long Beach, petition the University Graduate Council to have not more than six units earned as resident credit in the International Programs included on their official program for the master's degree. In no case may excess grade points earned in the International Programs be used to bring a grade point deficiency at California State University, Long Beach to the required 3.0 ( $B$ ) average.
Students admitted to candidacy for a master's degree who plan to participate in the International Program of Studies must obtain permission, prior to beginning their study abroad, to have units earned abroad applied toward satisfaction of their degree requirements. A candidate's petition to apply units earned abroad must be reviewed and recommended by the department offering the degree. The specific courses to be taken on the foreign campus, thesis research which is to be done abroad, or any other requirements such as examinations to be taken upon the student's return must be listed on the official master's degree program. Usually no more than six units of credit may be transferred to apply toward the minimum 30 units for an advanced degree as a result of participation in the International Program of Studies, but a maximum of 12 units may be allowed by the Dean of Graduate Studies in consultation with the University Graduate Council in a special case.

A copy of the candidate's graduate degree program must be forwarded to the Resident Director, who must certify that any credit earned abroad is appropriate to meet graduate degree requirements

Pending the faculty's evaluation of the student's work, a Report Delayed (RD) grade will be assigned all courses in which work was completed abroad and which are offered to satisfy requirements toward an advanced degree.

## Withdrawal from the Degree Program

Students who have been admitted to candidacy for an advanced degree and who complete no courses at this University within a calendar year will be withdrawn from the graduate program.

If a student wishes to resume graduate study after withdrawal, a petition for readmission to the graduate degree program must be filed in the department or school and be approved by the Dean of Graduate Studies.

## Election of Regulations

Graduate students advanced to candidacy will be held responsible for the regulations governing master's degrees in effect at the time of advancement or at the time the last requirement for the degree is met, whichever is more conducive to the student's course of study. A change in master's degree objective or readmission to a graduate program following withdrawal requires that a new degree program be filed under the current graduate policies as published in the latest edition of the Bulletin.

## Change of Objective

Evaluation of credits transferred to the University is based in part upon the objective indicated on the application for admission. Candidates desiring a change in graduate objective from that indicated on the original application must follow these procedures:
(1) obtain a Petition to Change Objective form in the Records Office;
(2) obtain the signatures of the faculty adviser, the graduate adviser, and/or the chair of the department or dean of the school or designee in which registration will occur, and
(3) submit a graduate program in the new discipline

## Second Master's Degree

A graduate student who holds a master's degree from this or any other accredited institution but desires to become a candidate for a second master's degree in a field from this University is subject to the following regulations:

1. All admission requirements of the University/School/Department must be met (all general regulations listed in the Bulletin apply to the second master's degree).
2. Enrollment and approval of candidacy for the second degree will be granted only after the first degree has been completed and awarded.
3. All requirements for the new degree must be completed.
4. After awarding of the first master's degree, a minimum of 24 units of graduate residence credit must be earned at this University including the minimum of 500/600 series units mandated by the major department in which the student is earning the second master's degree.
5. No more than six units earned on the first degree may be applied to a second master's degree program.
6. Prerequisites for an advanced course must be completed prior to enrollment in the advanced course. No course credit will be granted for a course which is a prerequisite to one for which credit has been received.
7. All prerequisites must be completed prior to application for candidacy.
8. Two master's degrees cannot be awarded concurrently.
9. The area or discipline in which the second degree is earned shall be designated on the transcript and a second diploma awarded.

## Certificate Programs and Graduate Study

Students, whether graduates of CSULB or another accredited institution, may complete requirements for and be awarded certificates while in graduate standing.

When certificate programs so provide, $500 / 600$ level courses (except 698) may be used toward the requirements of such certificates. Prerequisites for these courses must be completed prior to registration in 500/600 level courses.

Courses used to meet requirements for the master's degree may also be used to meet certificate requirements when the certificate programs so permit, but such overlap shall not exceed 15 units. Any certificate program that requires or permits graduate courses must receive approval of the University Graduate Council.

## Graduate Credit Earned as a Second Semester Senior

Graduate credit usually may not be earned in advance of the baccalaureate degree. However, based upon faculty recommendation, academic performance (usually a grade point average of 2.75 overall and a 3.0 ( $B$ )in the major), and promise of academic achievement in post-graduate study, a second semester senior may be granted approval to earn a maximum of six units of course work in the 300, 400 and 500 level taken at this university to his/her prospective graduate program, subject to the following conditions: (a) the course work must be in addition to that required by the department or school for the undergraduate major; (b) the undergraduate student must have a "Petition to Earn Graduate Credit in the Senior Year" approved by the departmental graduate adviser and the Graduate Dean or the Directors of Graduate Studies of the Schools of Applied Arts and Sciences, Business Administration, Education, Engineering, Humanities, or Natural Sciences
In those areas in which graduate credit is for a credential be filed with the Associate Dean. School of Education. A copy of the approved betition with to be forwarded to the Registrar
petition is to be forwarded to the Registrar.
All petitions must be approved by all offices before registration in the classes is permitted.

## Senior Enrollment in Graduate Courses for Undergraduate Credit

Under special conditions, seniors who have an overall 3.0 grade point average or better and who have adequate undergraduate preparation in the subject may enroll in a course in the 500-599 series to fulfill the elective requirements of the bachelor's degree only. The course work may not be applied to the units of 500/600 level course work required by the department or school for the master's degree. The student must have a "Petition to Earn Credit Toward a Bachelor's Degree for a 500 Level Coarse Taken in the Senior Year" approved by the instructor, department, school and/or Graduate Dean before registration in the class(es) is permitted.

## Extension/Continuing Education and Correspondence Courses

At the option of the school or department offering an advanced degree a total of six units of approved extension/continuing education or transfer credit is acceptable on master's degree programs. Extension courses completed at campuses including California State University, Long Beach shall be acceptable within the six-unit transfer limit provided the work can be properly evaluated and the course is acceptable as graduate work for an equivalent graduate degree on the campus where taught. For the Schools of Applied Arts and Sciences, Business Administration, Education, and Engineering, extension/continuing education and transfer course material shall be evaluated and approved by CSULB faculty teaching in the topic area in conjunction with the school director of graduate studies. For all other schools, course materials shall be evaluated and recommended for approval/disapproval by the CSULB faculty teaching in the topic area and the appropriate graduate adviser. Final approval/disapproval shall be the responsibility of the Dean of Graduate Studies.
Extension/continuing education credit may not be used to reduce the minimum units required in a discipline for a master's degree, nor may excess grade points earned in extension classes be used to offset a grade point shortage in the total graduate record
Grades earned at another institution may not be used to offset grade point deficiencies in courses taken at this University. However, grades of $C$ earned at another institution in courses transferred to satisfy subject matter requirements for an advanced degree at this institution must be balanced by grades of $A$ at this University to meet the required $3.0(B)$ overall average.

Credit earned by correspondence or by examination may not be used to satisfy master's degree requirements.

## Credit-No Credit Grading

Graduate students may enroll in upper and lower division coursework on a creditno credit basis providing departmental regulations do not prohibit this option. For graduate students a grade of at least B will be considered a CR grade in upper division work ( $300-400$ series courses) and a grade of at least $C$ will be considered a CR grade in lower division work ( $100-200$ series courses). No formal limitation is imposed on the number of upper division courses in which a graduate student may enroll for CR/NC; however, the CR/NC option may not be applied to any coursework included on the master's degree program submitted for advancement to candidacy. A student may, however, apply a maximum of six units of fieldwork, practicum and/or internship courses to the master's degree, all or part of which may be taken CR/NC. The CR/NC grading is not applicable to $500 / 600$ series courses with the exception of student teaching and field work courses.

## Academic Probation and Disqualification

For purposes of determining eligibility to remain at the University, both quality of performance and progress toward the student's objective will be considered Eligibility will be determined by use of grade points, grade point average, and progress points. The progress point scale is based on the grade point computation for letter grades and augmented by the assignment of two points per unit for the CR grade and no points per unit for the NC grade.
Students who are enrolled in a graduate degree program in conditionally classified or classified standing will be subject to academic probation if they fail to maintain a cumulative grade point average of at least 3.0 (grade of $B$ on the five point scale) in all units attempted subsequent to admission to the program.

Students who are enrolled in any post-baccalaureate status other than in conditionally classified or classified standing will be subject to academic probation if they fail to meet criteria established by the University.
Graduate or post-baccalaureate students will be subject to disqualification if while on probation they fail to earn sufficient grade points to be removed from probationary status. Disqualification may be either from further registration in a particular program or from further enrollment at the campus as determined by the appropriate departm ent and/or school.
An unclassified student who fails to maintain a cumulative grade-point average of 2.5 on all units attempted and on all units attempted at the University will be placed on probation.
A student on probation who, prior to the beginning of the next fall term, fails to attain a cumulative grade-point average of 2.5 on all units attempted and on all units attempted at the University will be disqualified. A student who at any time is reported to the Scholastic Standards Committee as deficient in scholastic achievement is subject to disqualification.

A student who is disqualified because of scholastic deficiency may petition the Standards Committee for readmission only after an absence of two semesters or upon successful completion of summer session courses which remove the grade-point deficiency.

Petitions for readmission must indicate the reason for requesting readmission and must include a statement of any academic work successfully completed since disqualification or of any other activity which gives evidence in support of the petitioner's belief for readmittance. An application for admission and required transcripts, as well as the petition, must be submitted to the Office of Admission before the dates established by the University for filing applications.

Classified graduate students must maintain a $3.0(B)$ average or be subject to review by the Graduate Council in respect to their degree classification.

## Grievance Procedures

The steps required in a grievance are available from the Office of Graduate Studies.

## The Graduate Dean's List of University Scholars and Artists

The Graduate Dean's List provides for University recognition of its most outstanding graduate students. Candidates for this honor must have completed a minimum of 12 units of course work applicable to their graduate programs at the University. The annual list is limited to one percent of the University's graduate enrollment. Those honored will be named in the Commencement Program and will receive a certificate from the Graduate Dean.


## American Indian Studies

## Director: Mr. Richard W. Band

Undergraduate Adviser: Mr. Richard W. Band

The American Indian Studies program exists to explore and make more widely known the American Indian heritage and role in the development of America and to and problem s of the American Indian today with a view to formulating possible solutions and publicizing the results of its investigations. The formulating possible solutions and publicizing the results of its and urban American program aims not only to meet the needs of the reservation and urban American Indian but also to enlighten students who are interested in widening their own understanding and cultural backgrounds. Since the program will draw upon a variety of traditional disciplines, the student will be exposed and way of life which ill revel differing opinions about this minority, its problems, and future. is this proarm is designed to serve the interests and goals of (1) ano knowledge about American Indian students who wish to broaden their own knowledge about American Indians, (2) Indians and non-Indians alike who may enter such diverse fields as law, administration, counseling and American Indian affairs, teaching, social work, (3) the general student who wishes to explore a further educational dimension by focusing on an ethnic minority.

The program attempts to develop and coordinate activities in the community that will not only serve the interests of the community but also provide students the epportunity to placed within numerous and varied community-oriented agencies, such as nearby ndian centers, free clinics, correctional facilities, Title IV educational programs and schools.

Students may pursue a program in American Indian Studies through a minor or certificate, a concentration in American Indian Studies within the liberal studies degree program or an individually-designed undergraduate special major program nder the Special Programs Office. Advisement in American Indian Studies is available in the program office, FO 4-174.

## Certificate in American Indian Studies

Students pursuing any approved degree or credential program of the University nay the to meet the requirements may also simultaneously be used, where applicable, to meet General Education requirements or the degree or credential requirements of cooperating departments. Certification of successful completion of requirements
will be issued upon the recommendation of the Director of the American Indian Studies Program.

Requirements for the Certificate in American Indian Studies

1. A bachelor's degree with a major in a traditional discipline. (Certificate requirements may be completed prior to the completion of the B.A. requirement.)
2. Submission of all college/university transcripts to the academic advising coordinator, who will work with the student to develop a well integrated program of studies. Interested students are strongly encouraged to meet with the undergcaduate adviser after having completed the lower division core courses.
3. A minimum of 24 units, distributed as follows:
a. Lower division core courses (six units): American Indian Studies 100 and 101.
b. Upper division core course (three units): American Indian Studies 335.
c. Upper division regional history course (three units), selected from American Indian Studies 303, 304, 305, and any other such course offered by the program
d. Upper division community studies course (three units), American Indian Studies 310, and any other such course offered by American Indian Studies; and,
e. Upper division elective courses (nine units), selected from American Indian Studies, Art 411C, Anthropology 321, 322, 347, 349, History 473, and any other related course approved by the undergraduate adviser. (The student is advised to employ these elective units in the development of an area of emphasis.)

## Minor in American Indian Studies (code 0-8420)

A minimum of 18 units which must include American Indian Studies 100, 101, 335; three units selected from American Indian Studies 303, 304, 305; American Indian Studies 310; three units selected from an American Indian Studies course, Art 411C, Anthropology 321, 322, 347, 349, History 473.

## Lower Division

100. American Indian History: Pre 1871 (3) F, S Faculty

A survey of the histories and cultures of American Indian peoples in North America from pre-contact to 1871 and an analysis of the political, cultural, legal and military relationships that developed between the American Indians and foreign nations. Not open to students with credit in American Indian Studies 130.
101. American Indian History: Post 1871 (3) F, S Band

A survey of the histories and cultures of American Indian peoples in North America from 1871 to the present. Not open to students with credit in American Indian Studies 131.
297. Fieldwork in American Indian Studies (3) F,S Band

Prerequisites: Lower division standing, consent of instructor. Supervised experiences relevant to specific aspects of the American Indian community in off campus settings. Regular meetings with faculty supervisor and written reports required. Must be taken Credit/No Credit.

## Upper Division

303. California Indian History (3) F Faculty

Histories and cultures of the American Indian peoples in California, emphasizing Spanish and American influences. (Lecture-discussion 3 hours.)
304. Southwest Indian History (3) S, 1980 and alternate years Faculty Histories and cultures of the American Indian peoples in the Southwest; a major focus on Spanish and American colonization. (Lecture-discussion 3hours.)
305. Plains Indian History (3) S, 1981 and alternate years Faculty

Histories and cultures of the American Indian peoples in the Plains, with an mphasis on their relationships with the United States government. Not open to students with credit in American Indian Studies 331.
310. American Indian Community Development (3) S Faculty

Overview of the economic structure of Indian reservations and Indian urban communities, describing in detail the economic base and development of resources. Attention will be given to the historical interplay of Indian resources and non-Indian resources and the possible future of this interplay, especially in the light of Indian demands for sovereignty.
320. American Indian Art (3) F, S Faculty

A survey of North American Indian and Alaskan native arts ranging from preColumbian through current personal and production-for-sale arts. Designed to expose the student to the wide range of American Indian materials, use, styles, regional characteristics and color use employed in the arts, including and beyond those in current popularity. Not open to students with credit in American Indian Studies 132.
335. American Indian Philosophies (3) S Faculty

Prerequisite: American Indian Studies 100 or Anthropology 321 or 406 or consent Prerequisith emphases on systems of knowledge, explanations of natural phenomena, and relation of the American Indian to nature through ritual and ceremonial observances.
339. American Indian Psychology (3) F,1979 and alternate years Faculty

Indian behavior will be studied at the level of the individual person, rather than at he more commonly ured culture, Areas to be covered include self-解 oncept, Indian reactions to prejudice, spen contemporary life styles, and issues in education

## 340. American Indian Literature (3) F Facuity

Prerequisite: American Indian Studies 100 or 335 or Anthropology 407 or consent f instructor. An analysis of the written and oral literary traditions developed by American Indians. Not open to students with credit in American Indian Studies 333.

## 345. The American Indian and the Mass Media (3) F, 1980 and alternate years

Faculty
Prerequisite: American Indian Studies 100, 101 or consent of instructor. An analysis of the role and image of the American Indian in media especially as concerns the television and film industries. (Lecture-discussion 3 hours.)

## 361. American Indian Education (3) $S$ Band

Prerequisite: American Indian Studies 100, 101 or consent of instructor. A study of the historical developments of American Indian education and proposed solutions to selected problems of education in the various types of schools. (Lecture-discussion 3 hours.)
370. American Indian Women (3) S, 1980 and alternate years Faculty

Overview of the role of women in traditional Indian societies and in the modern world Changes in Indian societies occasioned by contact with Europeans and how these changes have altered sexual role definitions will be examined. (Lecturediscussion 3 hours.)
375. The Bureau of Indian Affairs (3) S, 1980 and alternate years Faculty An analysis of the origin, history and function of the Bureau of Indian Affairs, with emphasis given to its influence upon today's American Indians. Not open to students with credit in American Indian Studies 332.
380. Law and the American Indian (3) S, 1981 and alternate years Faculty The concept of tribal sovereignty, involving the relationship of tribal governments, will be examined through the historical development of the case law The powers of tribal governments will be studied, including problems of jurisdiction, taxing and civil rights. (Lecture-discussion 3 hours.)
385. American Indian Leaders
(3) F, 1979 and alternate years

Faculty
Overview of the diverse philosophies of the leaders of various Indian nations, the political, sociological and religious aspects of their lives and the conditions that cause them to rise to power. Attention will be given to the impact of Indian-White relations. (Lecture-discussion 3 hours.)
420. American Indian Studio Art (3) F, 1980 and alternate years Faculty

Selected arts and crafts. Designed for student practice in North American Indian arts. Manual demonstration and instruction in some of the widely practiced Indian art expressions and film instruction in some of the lesser known arts. (Lectureactivity 6 hours.)
490. Special Topics in American Indian Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Topics of current interest in American Indian studies selected for intensive development. May be repeated for a maximum of six units. Topics will be announced in the Schedule of Classes

## 497. Fieldwork in American Indian Studies (1-3) F,S Band

Prerequisites: Upper division standing, consent of instructor. Supervised experiences relevant to specific aspects of the American Indian community in offcampus settings. The fieldwork project must be directly related to the student's major or certificate program. Regular meetings with faculty supervisor and written reports required. May be repeated for a maximum of six units.

## 499. Directed Studies (1-3) F,S Band

Prerequisite: Consent of instructor. Directed Studies to permit individual students to pursue topics of special interest. May be repeated for a maximum of six units.

## American Language Program

The American Language Program is a series of semi-intensive courses in nglish as a second language. The courses are designed for international students olding student visas, permanent residents and certain immigrants who have significant difficulty in their use of English. The Examination in English as a Second Language at CSULB is required of all visa students for whom English is the second anguage they have learned, and also for similar immigrant refugee students and citizens. Exemptions from this test are granted only if English is the student's firs language or if the student entered the United States more than 10 years ago Evidence of course work taken at other schools is not considered in granting exemption from this examination, although it will be considered in evaluating equirements for graduation. Students should take the examination as early as possible, but definitely before registering for classes at CSULB
Depending upon the results of the EESL test (and TOEFL, if available), students will either be placed in American Language Program courses during the firs semester(s) of their enrollment or waived from the program entirely. Exemption from these courses can be granted only by superior test scores or waiver by the student's graduate coordinator. If students must take Am erican Language Program courses, the number of other courses will be adjusted accordingly. The equirements that students take the EESL test and complete American Language Program courses as indicated cannot be postponed. This also applies to transfer students, both undergraduate and graduate.

Elective credit is given for all American Language Program courses. However admission and release from the program is determined by the student's level o language performance, and not $m$ erely by courses completed, here or elsewhere.

## Lower Division

121. American Language Program I (6) F, S Faculty

Intensive study of English as a second language, including grammar, composition, vocabulary, conversation, reading and comprehension. Twelve class hours per week.
122. American Language Program II (2) F,S Faculty

Study of English as a second language, emphasizing reading and research writing. May be taken concurrently with American Language Program 123. Four class hours per week.
123. American Language Program III (1) F,S Faculty

Study of English as a second language, emphasizing reading and expository writing. May be taken concurrently with American Language Program 122. Two class hours per week.

124A-B. American English Phonology (3,2) F,S Faculty
Essentials of perceiving and articulating American English sounds in context. Individual laboratory work also required.

## 125. American Language Program IV (3) F,S Faculty

Study of English as a second language, emphasizing rhetoric and oral style. Five class hours per week.

## American Studies

## Program Director: Dr. Albert F. Gunns (History)

Faculty Advisers: Cunningham (Journalism), Fine (English), Higgins (History), Leiter (Political Science), Levine (Comparative Literature), Nelson (English), Outwater (Geography), Peck (English), Pomeroy (English), Scott (Political Science).

American studies is an interdisciplinary program leading to the bachelor of arts degree. The major consists of (1) a series of core courses designed to explore particular issues and problems in American civilization, utilizing interdisciplinary methods and materials, (2) a breadth requirement in American literature and intellectual history, and (3) a sequence of elective courses from various departments chosen in accordance with the student's area of interest.

In addition to providing a broad liberal education focusing on American culture, traditions and institutions, the major in American Studies offers a useful background for students planning to enter professional careers in teaching, law, library science, journalism, public service, government and business. The program also provides the foundation for graduate work in American studies and related fields.

In preparation for the upper division major in American studies, students are expected to have completed lower division courses appropriate as background to the study of American culture. Students planning to major in American studies should consult the program director or one of the above-named faculty advisers early in their academic careers for general education and preparatory course recommendations and for teaching credential information.

## Major in American Studies for the Bachelor of Arts Degree (code 2-6004)

A minimum of 35 units distributed as follows:
Core Course Requirement: American Studies 300, 490, 498 (nine units).
Breadth Requirement: English 370A,B; History 476A,B or 477A,B (14 units).
A. American Institutions: Criminal Justice 301 or 403 ; Economics 360 or History 475; History 479A,B, 489, Political Science 314, 315; Home Economics 312 or 413 or Sociology 320; Political Science 391; Political Science 322 or 423 or 424.
B. The American People: American Indian Studies 100 or Anthropology 321; Anthropology 347; Asian American Studies 200 or 220; Black Studies 120 or History 486; History 476A,B; Home Economics 312 or 413 or Sociology 320; Mexican American Studies 100 or 300; Sociology 445.
C. The American Environment: Biology 203 or 300; Geography 160, 204, 306; History 471A,B, 472, 474; Sociology 419; Urban Studies 201 or 401; Economics 305 or Geology 305.
D. The Arts and Communication in America: American Indian Studies 320 or Art 411C; Art 317B, 413A,B; Black Studies 140 or 155 or 340; English 474, 475, 476 477A,B, 478; Journalism 115; Music 393; Radio-TV 406.
E. The American Mind: No more than two from American Indian Studies 335 Asian American Studies 380, Black Studies 400, Mexican American Studies 310: English 474, 475, 476, 477A B, 478; History 482: Philosophy 316; Politica Science 308
In lieu of one of the above thematic sequences, an American studies major, working closely with an adviser, may design an elective pattern. This pattern rflecting a balanced and coherent program, must be approved by the program director before the student enrolls in the final 12 elective units. Examples of topics for student-designed patterns are Popular Culture in America and Women in America.

## Minor in American Studies (code 0-6004

A minimum of 18 units, including American Studies 300, 490 and 498. Additional Aures shall be chosen from the following list (from at least two of the categories) Appropriate courses in departments and areas not represented below, such as Women's Studies and Ethnic Studies, may be substituted with the written approval of the program director. Some of the following courses have prerequisites:
A. English 370A, 370B.
B. History 476A, 476B, 477A, 477B
C. Art 413A, 413B, Music 393.
D. Geography 306, Philosophy 316, Political Science 308.

## Lower Division

100. Popular Arts in America (3) F,S Faculty

Survey of the popular arts, leading to an increased appreciation and understanding of the part played by the popular arts in American life. Films, videotapes, popular music recordings are used to exemplify the conventions and themes of our popular culture. Not open to students with credit in Radio-Television 100.

## 90. Topics in American Studies (1-4) F,S Faculty

Exploration of a significant topic, theme, issue or problem in American culture, using interdisciplinary materials and methods. Topics shall be listed in the Schedule of Classes.
498. Senior Colloquium in American Studies (3) $S$ Faculty

Prerequisite: American Studies 300. Investigation of significant problems in American civilization using interdisciplinary methods and materials and culminating in an original research paper or project related to the student's area of specialization. This course is designed as the capstone to the degree program and s open to seniors only.

## 499. Directed Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Independent study of American culture taken under the supervision of a faculty member

## Upper Division

## 300. Introduction to American Studies (3) F,S Fine

Interdisciplinary approaches to the study of American civilization. Significant issues and problems in American life will be examined from the perspectives of several disciplines.
490. Special Topics in American Civilization (1-4) F,S Faculty

Prerequisite: American Studies 300. Intensive study of a selected major theme in American civilization using materials drawn from a variety of disciplines. May be repeated with a different topic for elective credit toward the major requirements if appropriate to the student's area of specialization. Topics to be announced in the Schedule of Classes.

## Anthropology

Department Chair: Dr. Eleanor Bates.
Emeriti: Ethel E. Ewing, Douglas Osborne, William J. Wallace.
Professors: Dixon, Fenenga, Kershaw, Key, McCone, McCorkle
Associate Professors: Bates, Gregory, Harman, Libby, Ruyle, Shermis.
Assistant Professor: Eckhardt.
Credential Adviser: Dr. Stewart Shermis.
Undergraduate Adviser: Dr. James Gregory.
Graduate Adviser: Dr. Eleanor H. Bates.
The undergraduate anthropology program is designed to provide the student with a broad knowledge of the various fields of anthropology as well as an opportunity for emphasis on particular topical or geographic interests. Instruction is planned to meet the needs of those who wish a liberal arts background for teaching and other public service careers as well as to meet the needs of those who wish to pursue advanced degrees leading toward a career in research, advanced teaching or application of anthropological knowledge in such fields as public service, health and welfare programs and foreign service.

The Department of Anthropology offers graduate study leading to the master of arts degree. The degree program provides for students: (1) wishing to expand their knowledge and increase their competence in the field of anthropology, (2) seeking teaching credentials where the master's degree is required, (3) preparing for further graduate work elsewhere. Candidates are responsible for observing the general requirements for the M.A. stated in this Bulletin. A Handbook for the Master's Degree in Anthropology is available from the department upon request. It is recommended that the prospective candidate contact the graduate adviser of the department for assignment to a faculty adviser before embarking on course work.

Graduate assistantship and departmental reader positions are sometimes available to qualified students.

## Major in Anthropology for the Bachelor of Arts Degree (code 2-8505)

Lower Division: A minimum of six units selected from Anthropology 110, 120, 140, 170; recommended, Psychology 100, Sociology 100, Geology 100, 102, 103, Biology 200.
Upper Division: A minimum of 30 units as follows: Anthropology 311A,B, 312A or 312B, 302; six units of bio-cultural theory selected from Anthropology 317, 318, $319,350,363,411,414,430,436,439,440,490$ A; six units of comparative societies selected from Anthropology 321, 322, 323, 324, 327, 331, 332, 335, 336, $341,342,345,347,349,362,490 \mathrm{~B}$; three units of contemporary issues selected
from Anthropology 351, 352, 353, 354, 421, 455, 469, 490C; three units of methods selected from Anthropology 315, 316, 450, 451, 460, 470, 480A, 480B, 485; and in consultation with adviser, six upper division units from any behavioral or social science department outside Anthropology. These courses shall be in addition to courses selected to fulfill the requirements of any General Education category.

## Minor in Anthropology (code 0-8505)

The degree minor in anthropology requires a minimum of 21 units and must include:
Upper Division: Anthropology 311A,B; 15 units selected in consultation with the undergraduate adviser in anthropology to meet specific needs of the student.

## Master of Arts in Anthropology (code 5-8505)

## Prerequisites

1. A bachelor's degree in anthropology, or
2. A bachelor's degree with 24 units of upper division courses in anthropology, comparable to those required of anthropology majors at this University.
3. Students whose undergraduate work in anthropology seems inadequate will be required to fulfill specific undergraduate deficiencies before admission to candidacy. Deficiencies will be determined by the departmental graduate adviser after consultation with the student and a review of the student's transcript records.

## Advancement to Candidacy

1. Acceptance into the M.A. program by the department.
2. Satisfaction of the general University requirements for advancement to candidacy
3. Approval of the candidate's graduate program by the departmental graduate adviser.
4. The candidate must have taken Anthropology 501 (Development of Anthropological Theory) and Anthropology 502 (Proseminar) or equivalent, or must be registered in the courses at the time of advancement to candidacy.

## Requirements for the Master of Arts

1. A minimum of 30 units with 24 units of upper division and graduate courses in anthropology.
2. At least 21 units in the anthropology $500 / 600$ series, excluding Anthropology 698, ( 9 of these units may be taken in the core course sequence, see item 4).
3. A reading knowledge of a foreign language, or; familiarity with computer language(s) and use of computers plus appropriate mathematical training, or; statistical training and facility, or; possession of other scientific skill(s) to an advanced degree.
4. A comprehensive examination:

Option A - Core Course Sequence and sub-disciplinary comprehensive examinations. The core course sequence includes four courses in anthropology: Ethnology-Social Anthropology, Archaeology, Linguistics and Physical Anthropology (Anthropology 500, 520,530,540). Each core course is an intensive and synthesizing study of one anthropological sub-discipline. Students taking the core course option will take the core courses in those three areas which are not their area of specialization and will then take a comprehensive examination at the termination of each course. Under this option students may also enroll in the core course in the area of their specialization and receive a letter grade based on their performance, as in any seminar, but would not take the comprehensive examination at the end of the course. In their area of specialization (or related areas) they will take a minimum of nine other $600-1$ evel units and a comprehensive examination.

Option B - Students will take 500/600 level work (including core courses if desired), and take a single comprehensive examination in all fields.
Students should declare their option with the graduate adviser after acceptance into the program.
5. A thesis (Anthropology 698, four units).

## Lower Division

## 00. General Anthropology (3) F,S Faculty

General introduction to the fields of anthropology emphasizing the integration of both the biological and cultural fields of man. Especially recommended for nonmajors.

## 110. Introduction to Physical Anthropology (3) F,S Faculty

Nature of man; man's relation to other animals; heredity and principles of biological evolution; fossil evidence of prehistoric man, significance of racial variation in modern man; the origin and adaptive value of cultural behavior.
120. Introduction to Cultural Anthropology (3) F,S Faculty

Nature of culture; a comparative and historical approach to the religion, social organization, subsistence patterns and other aspects of the great variety of cultures around the world.

## 40. Introduction to Archaeology (3) F,S Dixon, Fenenga

Contributions of archaeology toward understanding the growth and development of human cultures; major discoveries in world-wide prehistory from the Old Stone Age to the Iron Age. Not open to students with credit in Anthropology 240.

## 170. Introduction to Linguistics (3) F,S Key, McCone

Nature of language; its relation to culture; structure and processes of change; language universals, contrasts and relationships; emphasis on non-Indo-European languages. Not open to students with credit in Anthropology 270.

## Upper Division

## Biocultural Theory

## 311A,B. Bio-Cultural Anthropology $(3,3)$ F,S Faculty

An integrated view of the field of anthropology. Man is viewed as part of a system in which biological, cultural, and environmental factors interact to produce the human adaptations found in the past and present. (Either section open to nonmajors; majors must take in sequence.)

## *317. Non-Industrial Technology (3) S Faculty

Anthropological examination of the techniques used in making and using tools, weapons and other equipment in the world's traditional cultures. Included are stone-working, ceramics, weaving, and metallurgy.
*318. People, Genes and Society (3) S, 1980 and alternate years Bates
Genetic background for normal and abnormal human development and as a source of population differences. Human reproduction, the outcome of pregnancy, prenatal diagnoses and birth defects will be examined in a cross-cultural and evolutionary setting. Knowledge from past research, trends in current research and their application to today's social, moral, legal and ethical problems.
*319. Growth, Development and Variation (3) F, 1980 and alternate years Shermis
Analysis of the sequence of events in the development of people from conception to death; organ development; rapid and retarded growth patterns; the processes of aging and death from a broad ethnic and ecological perspective.

## *350. Modernizing Traditional Societies (3) F, 1979 and alternate

 years GregoryProcesses of modernization in traditional societies; emphasis on the dynamic elationships between processes of economic change and changes in other sectors of sociocultural systems or part-systems; includes analysis of case studies.
*363. Primate Studies (3) $S$ Shermis
Description of the several spheres of primatology including gross morphology, taxonomy, phylogeny, behavioral studies and ecology. Not open to students with credit in Anthropology 432.
*411. Culture and Human Behavior (3) S, 1981 and alternate years McCone Personality development and organization; study of the dynamic relations between hum an behavior and culture; psychological dimensions of culture conflict and disorganization across cultures.
*414. Linguistic Anthropology (3) S, 1981 and alternate years McCone
Focuses on a cross-cultural and historical concern with meaning. The developing role of meaning as found in changing theories of linguistic analysis. The contribution of recent developments in cognitive,semantic and symbolic anthropology to theories of translation.
*430. Human Evolution (3) F Shermis
Fossil evidence for human evolution with a consideration of the importance of cultural factors. Not open to students with credit in Anthropology 360.
*436. Ecology, Disease and Adaptation (3) F, 1980 and alternate years Bates, Harman
Interaction of cultural, biological and environmental elements in response to disease. Focuses on an ecosystems approach with emphasis on evolutionary perspective and non-western societies.
*439. World as Created (3) F, 1980 and alternate years Faculty
Course deals with the human ability to create a cultural reality which is expressed in the symbolic systems of myth, ritual and world view. Particular attention will be devoted to theories for interpreting these symbolic systems and their applicability cross culturally.
*440. Symbols, Cognition and Cultur
(3) F, 1979 and alternate years Eckhardt

An evolutionary approach to the biological basis of the development of human beings' psychological capacity to use symbols and create culture. Various theories of cognition and symbolic behavior will be reviewed and evaluated from a cross cultural perspective.

## *490A. Special Topics in Bio-Cultural Theory (1-3) F, 1980 and alternate years Faculty

Topics dealing with bio-cultural theory in anthropology selected for intensive development. May be repeated for a maximum of six units. Topics will be announced in the Schedule of Classes.

Comparative Societies
$312 A, B$. Peoples and Places $(3,3)$ F,S Faculty
Interaction of culture and the environment in human adaptation viewed from a world-wide archaeological and ethnographic cross-cultural perspective. Not open to students with credit in Anthropology 300.
*321. North American Indians (3) F Faculty
An anthropological survey of traditional native North American societies with consideration of post-contact situations.
*322. California Indians (3) S Faculty
Survey of native Californian groups; discussion of the diversity of aborigina culture prior to western contact as background for analysis of the impact of Europeans; problems of intercultural relations; and the current status of native Californians

## *323. Peoples of Mexico and Central America <br> (3) F,1979 and alternate

 years FacultySurvey of the present day peoples of Mexico and Central America; tribal Indians peasant communities, village life, the merging middle class and other social groups. Examination of the Indian and Spanish colonial heritage and present day cultural and social changes.

## 324. Peoples of South America (3) F,1980 and alternate years Faculty

Survey of the present day peoples of South America; tribal Indians, peasant communities, village life, the merging middle class and other social groups Examination of the Indian and Spanish colonial heritage and present day cultura and social changes.

## *327. Peoples of the Pacific (3) S,1981 and alternate years Faculty

Cultures and people of Melanesia, Australia, Micronesia and Polynesia in prehistoric, historic and modern times; influence of island ecology on the development of cultural patterns; trends in acculturation.
*331. Peoples of the USSR (3) S, 1980 and alternate years Libby
Examines the development of traditional and cultural patterns from the ecological and historical points of view as it relates to the modernization of the peoples of the Soviet Union.
*332. Chinese Culture and Society (3) F,1979 and alternate years Ruyle
Introduction to the cultural and social institutions of the Chinese people Examination of Chinese kinship, family structure, lineage organization, religion, law, politics and economy in traditional, transitional and modern times
*335. Japanese Culture and Society (3) F, 1980 and alternate years Ruyle General introduction to Japanese culture, traditional and modern rural and urban cultural and social institutions; village and urban organization and family structure Aspects of social change in contemporary rural and urban Japan
*336. Peoples of Africa and the Mediterranean (3) S, 1981 and alternate years Kershaw
Cultural and social organization of African and Mediterranean peoples with particular emphasis on traditional patterns and modernization.
*341. Old World Prehistory (3) S, 1981 and alternate years Faculty Basic developments in the prehistory of the Old World; archaeological evidence of man's earliest cultures and their development through time; the roots of civilizations of Africa, Asia, and Europe
*342. The Rise of Civilizations in the Middle East (3) F, 1980 and
alternate years McCone
An anthropological analysis of the development of the early civilizations Mesopotamia and Egypt. Emphasis will be on the development of a unique world view and religious-socio-political order.
*345. Ancient Civilizations of Mexico and Central America (3) S,1981 and
alternate years Dixon
Origin and growth of the Aztec, Maya and other civilizations of Mexico and

## *347. Prehistoric Cultures of North America (3) S, 1980 and alternate

 years FacultyDevelopments in the prehistory of native Americans. History of archaeological investigation, knowledge of early man and later cultural developments, as well as recognized connections with historic tribes.

## 349. The Prehistory of California and the Southwestern United States

## 1979 and alternate years Faculty

Development of the native cultures of California and the American Southwest from the earliest evidences of human occupation to 1850.
*362. Biblical Archaeology (3) S, 1980 and alternate years Faculty
Archaeological view of the Biblical era. The language, people and culture of Archaeol times and places in light of current archaeological finds.

## 490B. Special Topics in Comparative Societies (1-3) F, 1982 and alternate years Faculty <br> Topics of current interest dealing with comparative societies selected for intensive development. May be repeated for up to six units. Topics to be

 annnounced in the Schedule of Classes.
## Contemporary Issues

*351. Sex Roles and Culture (3) F Libby
Interaction of biological, cultural and historical factors in establishing male and female roles and statuses in cultures around the world.

## *352. Alternative Styles of Aging (3) S Eckhardt

Cross-cultural survey of the different ways cultures define the aging process.
cross-cultural the roles and statuses based on age and sex over the life cycle and the values attached to these different cultures. Various theoretical approaches in gerontology will be evaluated in light of the cross-cultural data.
*353. Health and Healing (3) S Harman
Analysis of health, illness and healing with ethnic groups of the United States and other settings. Examination of magic, witchcraft and alternative systems of health care. Not open to students with credit in Anthropology 419.
*354. Communications across Cultures (3) F Key
Considers the potential conflicts reflected in language, gestures, time and space as encountered by business people, immigrants, tourists and diplomats in the social, material and religious spheres of today's culture.

## *421. Education across Cultures (3) F Faculty

Survey and analysis of anthropological materials and concepts adapted to the educative process. The purpose of the course is to enable students to utilize the anthropological perspective in understanding education cross-culturally.

## *455. Inequality and Social Organization (3) S, 1980 and alternate years Ruyle

Principles of organizational forms from kinship to bureaucracy. Evolutionary links between organizational complexity and levels of inequality. Types of human exploitation in bands, tribes, feudalism, caste and class systems.
*490C. Special Topics in Contemporary Issues (1-3) F, 1981 and alternate years Faculty
Topics dealing with contemporary issues in anthropology selected for intensive development. May be repeated for a maximum of six units. Topics will be announced in the Schedule of Classes.

## Methods

## 302. Quantitative Methods in Anthropology (3) F Bates

Survey of sampling statistics with emphasis on anthropological data. Basic statistical measures, common sampling distributions, tests of hypotheses. Not open to students with credit in Anthropology 402.

## *315. Population Dynamics (3) $S$ Bates

Demographic models applicable to living and nontiving, historical and contemporary anthropological populations will be considered. Techniques for investigating vital processes among modern nations applied to anthropological data.
*316. Strategies in Archaeology (3) F,1979 and alternate years Faculty
Method and theory in the recovery and interpretation of archaeological data; applications of different approaches to reconstructing the human past.

## *450. Archaeological Field Methods (4) S Faculty

Method of recording field data including mapping, drawing and photography; practice in the use of field equipment; participation in local site surveys and excavations when feasible. Offered on Saturdays.
*451. Analytical Archaeology (4) F,1980 and alternate years Faculty
Laboratory processing and description of archaeological materials within a framework of the theory of typology, quantitative and statistical approaches to analysis of archaeological assemblages.
*460. Ethnographic Methods (4) F Faculty
Basics of ethnographic field work, observation, interviewing, informants sampling and other topics. Projects of modest scope designed to emphasize research design, organization of field methods and report writing. (Lecture 3 hours activity 2 hours.)
461. Internship in Anthropology (6) S Faculty

Prerequisites: Anthropology 460, consent of instructor. Instruction in, and discussion of, characteristics of selected public and private agencies plus execution of individual, supervised projects designed to assist host agencies or organizations. (Lecture 3 hours, weekly supervised study in an off-campus organization or agency 6-8 hours.)
*469. Conservation Archaeology (3) S Faculty
Practical and theoretical issues in the conservation of prehistoric and historical resources, with an emphasis on their long-range preservation and management for the greatest scientific, historic and public benefit; research design, legal obligations, field strategies, significant evaluation, analysis of adverse impacts methods of impact mitigation, scientific research obligations; analysis of case studies.
*470. Linguistic Methodology (4) S, 1981 and alternate years Key
Study of unwritten languages of the world, demonstrating how to arrive at a suitable alphabet and methods for revealing the grammar system. Of interest to those preparing to work in literacy or cultural studies through folklore of unrecorded languages and variant dialects. (Lecture 3 hours, activity 2 hours.)
*480A. Osteology (4) S, 1980 and alternate years Shermis
Instruction in osteology, landmarks and methods in anthropometry and somatology; measurement and analysis of osteological collections, applied anthropolometry and somatotyping. (Lecture 3 hours, laboratory 3 hours.)

## *480B. Serology (4) F, 1979 and alternate years Bate

Leraly in the analyses of genetic systems; blood grouping and electrophoretic techniques; recent research and application of genetic data to anthropological problems. (Lecture 3 hours, laboratory 3 hours.)
*485. Paleopathology (4) F, 1980 and alternate years Shermis
Survey of the major skeletal diseases as seen in archaeological populations. Survey of laboratory 3 hours.)

## General

99. Guided Studies in Anthropology (1-3) F,S Faculty

Prerequisite: Consent of department. Selected topics in anthropology and preparation of a research report. May be repeated for a maximum of 6 units.

## Graduate Division

500. Core Course, Ethnology and Social Anthropology (3) S Faculty Prerequisites: Graduate standing in anthropology and Anthropology 502. A systematic examination of method, methodology, theory and content in Ethnology/Social Anthropology. May not be used by M.A. specialists in Ethnology/Social Anthropology for the comprehensive examination.
501. Development of Anthropological Theory (3) F,S Faculty

Prerequisites: Fifteen upper division units in anthropology and senior or graduate standing. A systematic survey of the development of anthropology as a scientific field; an examination of the principal ideas and theories of leading anthropologists, past and present. Not open to students with credit in Anthropology 495.

## 502. Proseminar (3) F,S Faculty

Prerequisites: Six units of upper division anthropology courses, consent of Prep Survey of anthropological research methods, gathering of data, data manipulation and the writing of technical and interpretive reports. Not open to students with credit in Anthropology 498.

## 516. Urban Anthropology

Prerequisite: Graduate standing. Intensive theoretical and substantive consideration of the new field or urban anthropology with special reference to societies and nations in the process of modernization. Extensive directed study of the literature
520. Core Course, Archaeology (3) F Faculty

Prerequisites: Graduate standing in anthropology and Anthropology 502. Concentrates on method, methodology, theory, content rather than technique. May not be used by M.A. specialists in archaeology for the com prehensive examination.
530. Core Course, Linguistics (3) S Key, McCone

Prerequisites: Graduate standing in anthropology and Anthropology 502. Concentrates on modern method, methodology, theory and interpretation in linguistics. May not be used by M.A. specialists in linguistics for the comprehensive examination.

## 540. Core Course, Physical Anthropology (3) F Bates, Shermis

Prerequisites: Graduate standing in anthropology and Anthropology 502 Methodology, theory, content and trend in physical anthropology. May not be used by M.A. specialists in physical anthropology for the comprehensive examination.

## 597. Directed Readings in Anthropology (1-3) F, S Faculty

Prerequisites: Senior or graduate standing and consent of instructor. Selected opics in anthropology will be studied in depth. A written report will be prepared
600. Seminar in Ethnology and Social Anthropology (3) F,S Faculty Topics of substantive and theoretical importance and their application to research problems. May be repeated for a maximum of six units.

## 20. Seminar in Archaeology (3) S Faculty

Prerequisites: Six upper division units in archaeological courses or consent of instructor. Important recent discoveries; contemporary ideas, trends and problems. May be repeated for a maximum of six units

## 630. Seminar in Anthropological Linguistics (3) F Faculty

Prerequisite: Anthropology 470 or consent of instructor. Areas and methods of linguistic study and research; evaluation and intensive scrutiny. May be repeated for a maximum of six units.
640. Seminar in Physical Anthropology (3) S Faculty

Prerequisite: Anthropology 480A and 480 B or consent of instructor. Materials and methods of research in human evolution. May be repeated for a maximum of sixunits.
697. Directed Research (1-3) F,S Faculty

Prerequisite: Consent of department. Research in anthropology on an individual basis.
698. Thesis (1-4) F,S Faculty

Prerequisite: Consent of department. Planning, preparation and completion of a thesis in anthropology.


Department Chair: Dr. Howard G. Hitchcock
Emeriti: Bela L. Biro, Maxine Merlino, Josephine Schultz.
Professors: Aall, Archer, Borders, Brisker, Click, Cooper, Crafts, Dillingham, Ferreira, K. Glenn, Graff, Gross, Hitchcock, Kammermeyer, Krause, Leland, Lieberman, Martin, Moryl, Muller-Stach, Oden, Ramsey, Shaak, Swift, C. Thompson, Turnbull, Tyrnauer, Van Eimeren, Wallin, Werlick, Youry.
Associate Professors: Boston,Cummings, Dame, de Heras, Dukes, C. Glenn, Lincoln, Martel, Myers, Pine, Purcell, Slayman Jones, Snidecor, Yates
Assistant Professors: Gibbar, Greer, Mendez, Osborne.
Lecturers: Brown, Edwards, Jenkins, Marsh, Oda, Palmer, Visgatis, Wethli.
Director, University Galleries: Constance Glenn.
Adjunct Professors: Marcia S. Weisman; Robert Barrett, Creative Arts Director,Long Beach Recreation Department; Russell Moore, Director, Long Beach Museum of Art.

## Credential Adviser: Dr. James Crafts

## Undergraduate Adviser: Mr. John Śnidecor

## Graduate Advisers: Estelle Brisker, Frank Cummings

Graduate Committee: Estelle R. Brisker, James S. Crafts, Herman Graff, Kristi Slayman Jones, Dieter Muller-Stach.

The Art Department has curricular programs leading to the following undergraduate degrees: (1) bachelor of arts (general art), (2) bachelor of fine arts, (3) bachelor of arts in art history, (4) bachelor of arts (teacher preparation), (5) bachelor of science in industrial design. The department is also authorized to offer the master of arts degree in art and the master of fine arts degree.

The department is accredited in Division One of the National Association of Schools of Art in recognition of the professional calibre of its programs. The interior design specialization leading to the bachelor of fine arts degree has been granted provisional accreditation by the Foundation for Interior Design Education Research.

As is customary in most schools, the Art Department reserves the right to keep for a period of up to three years work or projects completed by students for class credit.

The Department of Art master of arts degree program provides specialization in the following: art education, art history, ceramics, design, drawing and painting exhibition design, general crafts, graphic design, illustration, industrial design interior design, metalsmithing, printmaking, sculpture, textile design and theatre design.

In addition to its degree programs, the department offers a Certificate Program in Museum Studies and an interdisciplinary program leading to a Certificate in Biomedical Art.
Note: Since applications for most Art Department undergraduate programs exceed the space available, admissions to those programs must be limited Admissions procedures and supplementary screening criteria are described following the requirements for the degree.

## Major in Art for the Bachelor of Arts Degree (General Art) (code 2-5850)

This program is for students who seek a broad understanding and appreciation of art. Total art units required: 47 (23lower division, 24 upper division).
Lower Division Requirements: Art 111 or 161, 112A, 112B, 121, 131, 181, 184 and 187 Upper Division Requirements: A minimum of 24 units of upper division art which must include two courses from each of the following: (1) art history; (2) design 3) drawing, painting, illustration, printmaking; and (4) crafts, sculpture.

## Bachelor of Fine Arts Degree

The bachelor of fine arts degree is offered for the student eventually seeking a ater fine arts degree, the position of a professional artist or designer and the student seeking a career of teaching studio art within a selected specialization. The B.F.A. degree program is a rigorous one, demanding high quality performance in order to develop the professional competence of talented students toward successful entrance into the professional art field. There are nine professionally oriented specialized programs leading to the B.F.A. degree. Total art and support units required: 70 ( 29 lower division, 41 upper division). Total units for graduation: 132.

132 Programs of Specialization: Course Requirements

## Ceramics Option (code 4-5852)

Lower Division: Art 111 or 161, 112A, 112B, 121, 131, 151, 181, 184, 187, 251; Industrial Arts 281 or 282.
Upper Division: Art 320, 351A, 351B, 352A, 352B or 353, 451A, 451B, 499A; Art 416 and six additional units of art history; nine additional units of art outside specialization.
Drawing and Painting Option (code 4-5858)
Lower Division: Art 112A, 112B, 121, 131, 161, 181, 184, 187, 281, 284, 287.
Upper Division: Art 320, 372, 381, 384A, 385A, 387A, 389, 487A, 499K; six units of art history; 12 units of art outside specialization; special emphasis in Drawing and Painting: Intermedia. Upon approval of intermedia faculty, nine units of Art 499T, Intermedia, will be substituted for nine required upper division units in drawing and painting.

## Graphic Design Option (code 4-5859)

Lower Division: Art 111 or 161, 112A, 112B, 121, 131, 181, 184, 187, 223, 237, 271. Upper Division: Art 320, 322A, 322B, 323A, 323B, 422A, 422B, 499S; Art 418 and three additional units of art history; 12 units of art outside graphic design specialization with adviser's approval.

## Illustration Option (code 4-5855)

Lower Division: Art 111 or 161, 112A, 112B, 121, 131, 181, 184, 187, 223, 271, 284. Upper Division: Art 320, 371A, 371B, 372; four units from 373, 385A or 389; 471A 471B, 499F or 374A; six units of art history; Art 323A, 387A and six additional units outside specialization.

## Interior Design Option (code 4-5854)

Lower Division: Art 111 or 161, 112A, 112B, 121, 131, 181, 184, 187, 224, 231, 237. Upper Division: Art 320, 341A, 341B, 342A, 342B, 343, 441A, 441B, 499H; Art 417 and 418; 11 units of art outside specialization including Art 332 and nine units selected from the following: Art 322A, 327A, 331A, 333A, 344A, 435.

Metalsmithing and Jeweiry Option (code 4-5860)
Lower Division: Art 111 or 161, 112A, 112B, 121, 131, 181, 184, 187, 271; Industrial Arts 101, 282.
Upper Division: Art 320, 357A, 358A, 358B, 357B, 458A, 458B, 499J; six units of art history; 12 units of art outside specialization.

## Printmaking Option (code 4-5861)

Lower Division: Art 111, 112A, 112B, 121, 131, 181, 184, 187, 277, 161 or 281, Industrial Education 101.
Upper Division: Art 320,376, 377,378, 379, 475 and six units selected from Art 477, 478 or 499R; Art 317A, 317B; Art 318, 381, 384A, and four additional units of art outside of specialization.

## Sculpture Option (code 4-5862)

Lower Division: Art 112A, 112B, 121, 131, 161, 181, 184, 187, 263, four units of art electives.
Upper Division: Art 320, 361, 362A, 362B, 363, 461, 463, 499M; six units of art history; 12 units of art outside specialization.
Textile Design Option (code 4-5863)
Lower Division: Art 111, 112A, 112B, 121, 131, 181, 184,187; six units selected from 223, 271, 277, 281, 287.
Upper Division: Art 320, 327A, 327B, 328, 428A, 428B, 428C, 499N; Art 418, 419 and three additional units of art history; nine additional units of art outside specialization.
Major in Art for the Bachelor of Arts Degree (Art History) (code 2-5857)
This program is for students who wish to specialize in the study of the history of art. Studio courses and selected courses outside of art are included in order to give breadth to the program.
Lower Division: Art 112A, 112B, 113A, 113B, 121, 181, 111 or 213; three additional units of art studio; six units selected from anthropology, psychology, history or the humanities (other than art) with adviser's approval.
Upper Division: Art 496, three units selected from Art 312, 393A, 393B, 411A, 411B, 411C; three units selected from Art 310, 314A, 314B, 314C, 315A, 315B, 316A, 413A; three units selected from Art 311, 313A, 313B; three units selected from Art 316B, 317A, 317B, 413B, 414; three units selectedfrom Art 319A, 319B, 494A, 494B; three units selected from Art 415A, 415B, 491, 492; six units selected from upper division studio; six units selected from anthropology, psychology, history or the hum anities except art with adviser's approval; three units of art electives.

## Major in Art for the Bachelor of Arts Degree

(Teacher Preparation) (code 2-5867)
The bachelor of arts (teacher preparation) degree is a four-year art major degree program required of those students seeking a single subject teaching credential in art (K-12) under the Teacher Preparation and Licensing Act of 1970 (Ryan Act).
Lower Division: Art 111, 112A, 112B, 121, 131, 181, 184, 187.
Upper Division: Art 317A or B, and one course selected from Art 319A, B, 393A,B, 411A, B , C , 414, 415A,B, 491, 492, 494A,B. Art 385A and one course other than 385 B in drawing or painting or printmaking or illustration. Two courses in design selected from Art 322A, 327A, 331A, 341A, 344A. Art 354A and one course in ceramics or jewelry or metalsmithing or sculpture or Art 328 or 428A. Art 300 and 407.

The Single Subject Credential in Art requires 30 units of upper division or graduate course work beyond the B.A. However, some or all of the professional education courses and student teaching may be taken in the B.A. program or within the fifth year. These courses are Education Single Subject 300A (recommended for the junior year); English 300; Health Science 411; Secondary Education 310 and 421 or 435 and 436; Education Single Subject 450A; Secondary Education 457, and Education Single Subject 470A and B, Final Directed Field Experiences (Student Teaching). For information concerning requirements for the B.A. program, teacher preparation, as well as the fifth year for the credential, consult the art education faculty.

## Bachelor of Science Degree in Industrial Design (code 3-5853)

This degree program is planned for students concerned with development of professional competence in combining current technology with concepts and principles developed by the visual arts. It will provide the backgrounds in science and technology and the aesthetic awareness demanded by the responsibilities of the industrial design profession as well as a broad background in general education necessary for a functioning relationship with modern society.
Lower Division: Art 112A, 112B, 121, 131, 181, 184, 187, 223, 224, 231, 237; Industrial Arts 281, 282; Mechanical Engineering 172.
Upper Division: Art 331A, 331B, 332, 333A, 333B, 431A, 431B, 418 and 12 art elective units of which 9 must be outside the area of specialization of industrial design. Approved lower and upper division electives to total 132 units.

## Certificate Program in Biomedical Art

The Certificate Program in Biomedical Art is an interdisciplinary program sponsored by the Art and Biology Departments

Biomedical art is commissioned principally by (1) hospitals or individual researchers for publication, (2) by publishers and film producers serving the biomedical professions, (3) by producers of educational aids for biomedicine. Therefore, proficiency in commercial art and printing procedures including photography and typography is required.

Special permission is not required for a student to pursue the Certificate in Biomedical Art. The student may apply for certification upon completion of the following CSULB course work and conditions:

## Requirements for the Certificate in Biomedical Art:

1. A major in art or biology.
2. A 2.75 overall GPA and 3.25 in the major.
3. Forty-eight units as listed: Art 121, 181, 184, 271, 372, 374A, 374B, 499F; Biology 208, 212, 216, 313 or 324,327 or $331,364,365$. (Although Chemistry 111 A is a prerequisite for Biology 216 , this may be waived for art majors in the biomedical art program by consent of the instructor concerned.)
Co-directors of the CSULB biomedical art program are in art: Richard Oden, professor, and Peter Mendez, assistant professor, and in biology: Dr. Hiden T. Cox, professor, and Dr. Kenneth Gregory, associate professor. Questions may be addressed to them during office hours which are listed in the respective departmental offices.

## Certificate Program in Museum Studies

The Certificate Program in Museum Studies is open to graduate students in museum related fields including the visual arts, science, history, but does not exclude other fields. The initial program is to be devoted primarily to art museum studies.

Admission to the program is by permission of the museum studies faculty within the Art Department. Interested students should apply to the Director, University Galleries

## Requirements for the Certificate in Museum Studies:

A total of 30 units to include: Art 344A or B, 345, 445A-B taken consecutively beginning in the spring semester, 442Q in museum internship; 496, and 12 additional units selected from Art 499Q. Art History, Anthropology, Business Administration, English, Instructional Media, Journalism or Public Policy and Administration, subject to approval of the director of the program at the time o admission to Art 445A

## Admission to Baccalaureate Degree Programs in Art

Since requests for admission to certain Art Department programs exceed the spaces available, those programs are now impacted, either locally or system-wide.

Admissions must be limited for all undergraduate degree programs except Art History and Industrial Design (Hegis codes 10031 and 08391 on the system-wide application form). Supplemental screening criteria will be used to determine which applicants will be admitted under Graphic Design (10091) and Interior Design (02031), which are impacted system-wide, and under Art (10021) which is locally impacted. This latter number (10021) encompasses the seven B.F.A. studio specializations other than Graphic and Interior Design, and the B.A. degrees in General Art and Teacher Preparation offered by this department.

All applicants must apply during the first month of any filing period; only those applicants will be considered for impacted programs. When the initial application is received, an Art Department questionnaire will be sent by the Admissions Office to each applicant for designation of the specific degree and specialization desired. Applicants for impacted programs must return this form by the stated deadline directly to the Art Department or they will not be considered further. Non-residents, foreign and domestic, are not eligible for impacted programs

## Admission of Freshmen and Lower Division Transfer Students

Degree programs open to first-time freshmen and lower division transfer tudents with less than 12 transferable semester units are the B.A. in Art (General Art) and the B.A. in Art (Teacher Preparation), both locally impacted; the B.A. in Art (Art History); and the B.S. in Industrial Design. The B.F.A. degree program is not open to applicants at this level. The most highly qualified applicants as measured by the basic freshman Eligibility Index will be accepted into the two locally impacted programs listed above until all available spaces are filled. However, any pplicant who does not return the Art Department questionnaire by the stated deadline will be replaced by the applicant with the next highest Eligibility Index. First-time freshmen will be admitted into these two locally impacted programs only for the fall semester, therefore they must apply during the November filing period.

## Admission of Transfer Students with More than 12 Units

All degree programs in art, including the B.F.A., are open to transfer students with more than 12 transferable sem ester units who meet the criteria below. All such applicants for all degree programs except Art History and Industrial Design must:

1. Return the Art Department questionnaire by the stated deadline, indicating (a) the degree and specialization desired; (b) all college-level art courses attempted and grades received; and (c) a self-declared overall grade point average.
2. Submit also by the stated deadline a complete set of transcripts for all college-level academic work attempted. (These go directly to the Art and are in addition to the transcripts sent to the University Admissions Office.)
3. Have earned a 3.0 grade point average or better in at least 15 units of art which must include the following required art courses or their equivalents:

Course Semester Units
History of Western Arts: Survey (Art
$6(3,3)$ 112A, 112B)
Two-Dimensional Design (Art 121) 3
Beginning Drawing (Art 181)
In addition, applicants for the B.F.A. degree must submit a slide portfolio of heir creative work by the deadline stated, for review by the faculty in the chosen specialization.

Admission Procedures for Change of Major
Currently enrolled students who are undeclared or majors in other departments and who wish to apply for admission to degree programs in art must:

1. Submit a Change of Degree Objective form to the Art Department Office during the months of November or August. These are the only two periods during which such requests will be accepted.
2. Meet all the criteria listed above for transfer students with more than 12 units, including submission of all materials and the prior completion of the same prerequisite courses and minimum units in art with at least a 3.0 grade point average.
Transfer and change of major applicants who meet the above minimum prerequisites will be considered together for the available spaces in each of the impacted B.A. degree programs (General Art and Teacher Preparation) according to the highest Accommodation Index, calculated by multiplying the number of semester units of art completed times the grade point average in those art courses. Acceptance into the B.F.A. programs will be based upon a composite evaluation of both the portfolio of creative work and the Accommodation Index attained.

## Master of Arts Degree with a Major in Art (code 5-5850)

## Prerequisites

1. A bachelor's degree from an accredited institution with a minimum of 24 units of upper division art comparable to those required of a major in art at this University.
2. Completion of 16 units minimum of upper division work in the areas of specialization for the master of arts degree program. If the area of specialization is art education, the 16 units will consist of art and education courses approved by the art education graduate faculty.
3. Completion of a minimum of 12 units in art history, six units of which must be upper division.
4. Presentation to the student's specialization faculty of a portfolio of representative studio work with emphasis in the area of specialization. In lieu of a portfolio, art history students must: (a) present college transcripts to the art history faculty adviser; (b) secure approval of an in-residence paper relevant to an art history course in which enrolled in order to establish competency in research, bibliography and presentation; (c) pass the Cooperative English Test and the STEP Writing Test with a minimum of 70 per cent on each. (Only one retest for each test will be allowed and permission for retesting secured after consultation with the art history graduate adviser.)
5. A grade point average of 3.0 or better in upper division art. Course work taken as a graduate to validate undergraduate preparation may not be used to satisfy any requirement in the master of arts program. Students who do not meet the 3.0 grade point average or specified balance within the required 24 units of upper division art but who possess outstanding or unusual qualifications that promise a significant contribution to the master's program may petition for a special review from a graduate screening committee.

## Advancement to Candidacy

Approval of the graduate program by the student's graduate advisory committee, the graduate adviser, Art Department chair and Dean of Graduate Studies.

## Requirements for the Master of Arts

Completion of all requirements as established by the graduate advisory committee to include:

1. A minimum of 30 units of approved upper division and graduate courses with a minimum of 18 units in the area of specialization. At least 15 of these 18 units in the area of specialization must be $500-600$ series courses taken at this University. Art education students must satisfy credential English requirements
2. Not more than eight units of approved upper division work outside the area of art.
3. A thesis or studio project. All students completing a studio project for Art 698 are required to exhibit the work done for the project before the master's degree is granted, in accordance with the Art Department Guide for Master's Exhibitions.
4. A minimum of six units of upper division or graduate art history or related history beyond the 12 units listed as prerequisites, taken prior to or as part of the graduate program.

## Master of Fine Arts Degree in Art (7-5850)

The Art Department master of fine arts degree program provides 11 professional specializations under the following categories: Pictorial Arts (drawing and painting, sculpture, printmaking), Design (graphic design, illustration, interior design exhibition design), Crafts (general crafts, textiles, ceramics, metalsmithing).

## Prerequisites

1. A bachelor's degree from an accredited institution with a minimum of 24 units of upper division art comparable to those required of a major in art at this University.
2. Completion of 18 units of upper division work in the area of specialization for the proposed M.F.A.
3. Completion of a minimum of 12 units of art history, six units of which must be upper division.
4. Presentation of a portfolio of representative studio work with emphasis in the area of specialization to the student's specialization faculty.
5. A grade point average of 3.0 or better in upper division art. Course work taken as a graduate to validate undergraduate preparation may not be used to satisfy any requirement in the M.F.A. program. Students who do not meet the 3.0 grade point average or specified balance within the required 24 units of upper division art but who possess outstanding or unusual qualifications that promise a significant contribution to the master of fine arts program may petition for a special review from the Art Department Graduate Petitions Committee.

## Advancement to Candidacy

Approval of the graduate program by the student's graduate advisory committee the graduate adviser, the Art Department chair and the Dean of Graduate Studies.

## Requirements for the Master of Fine Arts in Art

1. At least 36 units in the area of specialization. Thirty of these must be in graduate level courses (500-600 series) which must include: 690-6, 692-2 and 699-6.
2. Six units of approved upper division or graduate course work outside of art.
3. A comprehensive review administered by the student's graduate committee after the completion of 21 units of studio course work. This review is to determine whether the candidate will continue in the M.F.A. program. Transfer students or returning M.A. graduates who are awarded 21 or more units toward the M.F.A. for previous graduate work by their respective committees are considered to have met this requirement.
4. A minimum of six units of upper division or graduate art history beyond the 12 units listed as prerequisites, taken prior to graduate standing or as part of the graduate program.
5. Twelve units of upper division or graduate courses in art.
6. Studio project. All students must complete a studio project for Art 699 and are required to exhibit the work done for the project before the M.F.A. degree is granted in accordance with Art Department Guide for Masters' Exhibitions.

## Lower Division

100. Introductory Studio Art for Non-Art Majors (3) F,S Faculty Development of perceptual skills through basic studies in drawing, painting, color and design
101. Introduction to the Visual Arts (3) F,S Shaak

Analysis, interpretation and evaluation of art forms; styles and themes in art: influences motivating art expression. Illustrated lectures with supplemental visits to art galleries and museums. For non-art majors.

## 111. Fundamentals of Art (2) F,S Faculty

Comparative study, through lecture, discussions and readings, of the considerations which are basic to an understanding of art and its relation to society.

## 12A,B. History of Western Art: Survey $(3,3)$ F,S Faculty

Development of art as an integral part of Western culture. 112A: From prehistory to the Renaissance; 112B: From the Renaissance to the present day.

113A,B. History of Asian Art: Survey (3,3) F, S Faculty
Art 113A: Art of India and Southeast Asia; 113B: Art of China, Japan and Korea Not open to students with credit in Art 412A,B

## 121. Two-Dimensional Design (3) F,S Faculty <br> Investigation and problems in the organization of two-dimensional visua

 phenomena.131. Three-Dimensional Form (3) F,S Faculty

Prerequisites: Art 121, 181. Investigation and problems in the organization of three-dimensional phenomena.

## 151. Ceramics: Beginning Hand Building (2) F,S Faculty

Handbuilding techniques used in the design, forming, glazing and firing of ceramic materials.
161. Beginning Life Sculpture (2) F, S Faculty

Prerequisites: Art 181, 184. Modeling from the human figure with emphasis on composition.

## 181. Beginning Drawing (3) F,S Faculty

Introduction to drawing with emphasis on perspective, light, shadow, and volume in composition using a variety of media.

## 184. Beginning Life Drawing (3) F,S Faculty

Prerequisite: Art 181 or concurrent enrollment in 181 and 184. Drawing from the human figure.

## 187. Beginning Painting (3) F,S Faculty

Prerequisites: Art 121, 181. Introduction to painting problems using opaque media.

## 220. Principles of Color (2) F,S Faculty

Prerequisite: Art 121. Study of the physical, physiological and psychological aspects of color through lecture and studio projects. An investigation of the various methods (Munsell, Ostwald, etc.) used to catalog color.

222A-B. Calligraphy $(2,2)$ F Turnbull
Prerequisites: Art 121, 181. Study of letter design and written letterforms utilizing the broad pen. Examines traditional written letterforms and contemporary interpretations of these form s. Students who have taken Art 222 will take 2228 next
223. Lettering (2) F,S Faculty

Prerequisites: Art 121, 181. Theory and techniques of lettering.

## 224. Perspective (2) F,S Faculty

Use of measuring devices and the mechanical development of volume, space and shadow projection.

## 231. Rendering for Designers (2) F,S Myers

Prerequisites: Art 121, 181, 224 or consent of instructor. Rendering of accurate and dramatic presentations. Primarily for design students entering the design profession.
237. Applied Design (2) F,S Faculty

Prerequisites: Art 121, 131, 181 or 224 . Form in design and an introduction to the varying applied aspects of design.
251. Ceramics: Beginning Throwing (2) F,S Ramsey, Youry

Prerequisite: Art 151. Ceramic materials and design emphasizing the use of the potter's wheel to develop forms.

## 254. Introduction to Crafts (3) F,S Faculty

Crafts processes, techniques, materials and concepts as related to the design and making of utilitarian objects. Designed for non-art majors. Not open to art majors.
263. Beginning Sculpture (2) F,S Faculty

Principles of sculpture expressed through basic experiences in modeling, carving, construction and mold making.

## 271. Rendering (2) F,S Faculty

Prerequisites: Art 121, 181. Graphic visualization for convincing representation.
277. Survey of Printmaking (2) F,S Faculty

Prerequisites: Art 121, 184. Survey of all general printmaking techniques

## 281. Intermediate Drawing (2) F,S Faculty

Prerequisite: Art 181. Drawing in various media with emphasis on space and form.

## 284. Intermediate Life Drawing (2) F,S Faculty

Prerequisites: Art 181, 184. Drawing from the human figure.

## 287. Beginning Life Painting (2) F,S Faculty

Prerequisites: Art 184, 187. Painting from the figure

## Upper Division

*320. Issues in the Arts (2) F, S Faculty
Comparative examination, discussion and study of major issues in the arts with special emphasis on issues that face the artist in our contemporary society. Evaluation on a Credit/No Credit basis.
*435. Furniture Design (3) F,S Dukes
Prerequisites: Art 121, 131, 161, 181, 187, 237, 331A or 341A, 332; Industrial Arts 281, 282 or consent of instructor. Design of public and private interior furnishings with an in depth study of the potentials of contemporary production methods and materials.
*459. Ceramic Shell Casting (3) S Hitchcock
Prerequisite: Consent of instructor. Lost-wax casting of expressive and/or unctional art forms in bronze using ceramic shell molds. Limited to six units
*489. Special Topics in Visual Art (1-3) F,S Faculty
Prerequisite: Consent of instructor Topics of current interest in the visual arts will be selected for intensive study. May be repeated with different topics to a maximum of 12 units. Topics will be announced in the Schedule of Classes.
*490. Special Topics in Studio Art (1-3) F,S Faculty
Prerequisite: Consent of instructor. Special topics of current interest in studio art will be selected for intensive study. May be repeated with different topics to a maximum of 12 units. Topics will be announced in the Schedule of Classes.
*495. Field Studies in Art (1-6) F,S Faculty
An opportunity to study artistic monuments, objects, theories, techniques at appropriate off-campus locations. Up to six units of cumulative credit may be earned in Art 495.
*496. Historiography in Art (3) F Krause
Prerequisite: English 100. Consideration of standard research techniques and resources as well as composition and documentation of written reports specifically related to the study of art.
*499T. Special Studies in Intermedia (3) F,S Faculty
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual and group projects. Projects may be interdisciplinary and include perform ance, process and concept art, and the application of materials and technology to new forms of art. Limited to six units in one semester and a total o nine units.

## Art Education

300. Child Art (3) F,S Faculty

Planning, developing and evaluating objectives and procedures for teaching the visual arts in the elementary school which includes experiences appropriate to child growth and development. Not open to students with credit in Art 300A.
302. Child Crafts (3) F,S Faculty

Planning, developing and evaluating objectives and procedures for teaching the visual arts in the elementary school. Experiences in crafts, sculpture and printmaking processes appropriate to child growth and development. Not open to students with credit in Art 300B.

306A,B. Arts and Crafts for Exceptional Children (2,2) F, S Schmidt
Methods and materials for teaching arts and crafts to mentally retarded, educationally handicapped, visually impaired, aurally impaired, multi-handicapped, orthopedically impaired and disadvantaged children.
403. Crafts for Secondary Schools (3) F,S Hitchcock

Experience with a variety of craft processes using materials and equipment appropriate for junior and senior high school art programs. Consideration of objectives and procedures for teaching crafts. Not open to students with credit in Art 303.
404. Ceramics for School Programs (3) F,S Faculty

Experience with ceramic processes, materials and equipment appropriate to school art programs. Consideration of objectives and procedures for teaching ceramics. Not open to students with credit in Art 305A-B.
405. Drawing and Painting for School Programs (3) F,S Faculty

Experiences with a variety of drawing and painting techniques and materials appropriate for school art programs. Consideration of objectives and procedures for teaching drawing and painting. Not open to students with credit in Art 308A-B

## 407. Art Practicum (3) F,S Faculty

Prerequisite: Consent of instructor. Development of attitudes and skills required for the production, evaluation and appreciation of the visual arts. Consideration of the value of the art process and product to the individual and to society.

499P. Special Studies in Art Education (3) F,S Faculty
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in art education. Limited to six units in one semester and a total of nine units.

## Art History

*310. Classical Art (3) F Greer
History of Greek and Roman art: 1000 B .C.-300 A.D.
*311. Early Christian and Byzantine Art (3) S, 1980 Martel Arts of Southern Europe from decline of Roman Empire through Byzantine Empire to 1200.
*312. Ancient Art (3) S, 1981 and alternate years Krause Prehistoric, Near Eastern, Egyptian and Aegean art.
*313A. Medieval Art (3) F, 1980 Martel
Arts of Northern Europe from Merovingian through the Romanesque periods.
*313B. Medieval Art (3) F, 1979, S, 1981 Martel Gothic Art.
*314A. Renaissance Art (3) F Greer
Art of the Renaissance, 1300-1500.
*314B. Renaissance Art (3) S Greer
Art of the Northern Renaissance in the Netherlands, France and Germany, 13001500.
*314C. Renaissance Art (3) S Greer
High Renaissance and Mannerist art of the 16th Century in Europe.
*315A,B. Baroque and Rococo Art ( 3,3 ) F,S Martel
Art 315A: Art of 17th and 18th Century Italy, Flanders, Spain and Holland; 315B: Art of 17th and 18th Century France, England and Central Europe.
*316A,B. Nineteenth Century Art $(3,3)$ F,S Cooper
Art 316A: European art from Neo-Classicism through Realism; 316B: From Impressionism through Post-Impressionism.
*317A,B. Twentieth Century Art ( 3,3 ) F,S Gross
Art 317A: Art from 1900 to 1945; 317B: From 1945 to the present.
*318. History of Prints (2) F Faculty
Printmaking and printmakers in Eastern and Western cultures from their origins to contemporary developments in the 20th Century.
*319A,B. Chinese Art $(3,3)$ F,S Faculty
Art 319A: Chinese art third millenium B.C. through the 10th Century A.D.; 319B: From the 10th Century A.D. through the 20th Century.
*393A,B. Pre-Hispanic Art of the Americas $(3,3)$ F,S Slayman Jones
Art 393A: Art of Mexico and Central America from origin to high civilizations of Aztec and Maya; 393B: Art of South America from origin through Inca Empire.
*411A. Primitive Art (3) S, 1980 Slayman Jones Art of Sub-Saharan Africa.
*411B. Primitive Art Oceanic art.
*411C. Primitive Art (3) F,1979, S, 1981 Slayman Jones North American Indian art.
*413A. North American Art (3) F, 1979 and alternate years Gross Art of the United States from the Colonial period through the Civil War
*413B. North American Art (3) S Gross Art of the United States from the Reconstruction period to the present.
*415A,B. Art of India $(3,3)$ F,S Aall
Art 415A: Indian art and architecture, Buddhist and Hindu from 2500 B.C. to 1000 A.D.; 415B: From 1000 A.D. to the 20th Century.
*416. History of Ceramics (3) S Ramsey Materials and techniques as they relate to the historical development of pottery styles and forms.
*417. History of Architecture (3) F Krause
Evolution of architecture relative to the human need to shape environment in accordance with governing concerns of specific periods in history.
*418. History of Design (3) $S$ Krause
Development of design as an independent creative activity including a consideration of both pre-technological and technological culture.
*419. History of Textiles (3) S Leland
Historical survey of textile structure and design as they relate to use, materials and invention of processes in determining character, quality and stylistic concepts.
*491. Buddhist Art of Southeast Asia (3) F Aall
Arts of Thailand, Cambodia, Vietnam and Indonesia with reference to arts of Burma, Laos, and Malaysia.
*492. Islamic Art of Persia and Mughal India (3) $S$ Aall
Islamic art and architecture of Persia and its transformation in India during the Mughal period.
*494A,B. Japanese Art $(3,3)$ F,S Faculty
Art 494A: The art of Japan from 10,000 B.C. to end of Kamakura Period 1333 A .D.; 494B: From the Murom achi Period to the present day.

## *496. Historiography in Art (3) F Krause

Prerequisite: English 100. Consideration of standard research techniques and resources as well as composition and documentation of written reports specifically related to the study of art.
*497. Special Studies in Art History (3) F,S Faculty
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in art history. Limited to six units.

## Ceramics

*351A. Ceramics: Advanced Wheel (3) F, S Youry
Prerequisites: Art 131, 251. Design problems with ceramic materials emphasizing wheel thrown forms

351B Ceramics: Surface Enrichment (3) F,S Youry
Prerequisite: Art 351A. Design problems with ceramic materials emphasizing surface enrichment.
*352A. Ceramics: Glaze Technology (3) F Ramsey
Prerequisite: Art 251. Nature of raw materials as they relate to the development of clay bodies and ceramic glazes.
*352B. Ceramics: Plaster Shop (3) S Ramsey
Prerequisite: Art 352A. Specific problems involving commercial production and techniques.
*353. Ceramic Sculpture (3) S Ferreira
Prerequisites: Art 131, 151 and consent of instructor. Modeling and sculpturing of clay into non-utilitarian expressive forms and consideration of the technical problems inherent to the process and material.

## *451A-B. Advanced Ceramics $(3,3)$ F,S Ferreira, Ramsey

Prerequisite: Art 351B. Individual problems in ceramics.
*452. Ceramic Shop Planning (2) F Ferreira
Prerequisite: Art 351B. Ceramic equipment including kilns, their design and construction.
*499A. Special Studies in Ceramics (3) F,S Ferreira
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in ceramics. Limited to six units in one semester and a total of nine units.

## Display and Exhibition Design

*344A-B. Display and Exhibition Design $(3,3)$ F,S Dukes
Prerequisites: Art 111 or 161, 112A,B, 121, 131, 181, 187. Use of materials, processes, and design concepts in the planning and preparation of displays and exhibits.
*499C. Special Studies in Display and Exhibition Design (3) F,S Dukes
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty upervision on individual problems in display and exhibition design. Limited to six units in one semester and a total of nine units.

## Drawing and Painting

*381. Drawing (3) F,S Faculty
Prerequisite: Art 181. Problems and concepts in drawing using a variety of media.
*384A-B. Advanced Life Drawing $(3,3)$ F,S Faculty
Prerequisite: Art 284. Continued study in drawing from the hum an figure.
*385A-B. Watercolor Painting (2,2) F,S Faculty
Prerequisites: Art 121, 181, 187. Nature and use of the water color media.
*387A-B. Painting $(3,3)$ F,S Faculty
Prerequisites: Art 121, 181, 187. Painting with emphasis on representation, organization and expression.
*389. Materials and Craft of Drawing and Painting (2) F,S Faculty
Prerequisites: Art 121, 181,387A. Theory and practice in the craft of drawing and painting.

## 487A-B. Advanced Life Painting ( 3,3 ) F, S Faculty Prerequisites: Art 287, 384A, 387A.

*499D. Special Studies in Drawing (3) F,S Faculty
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in drawing. Limited to six units in one semester and a total of nine units.
*4991. Special Studies in Life Drawing (3) F, S Faculty
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in life drawing. Limited to six units in one semester and a total of nine units
*499K. Special Studies in Painting (3) F, S Faculty
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in painting. Limited to six units in one semester and a total of nine units.

## General Crafts

*354A-B. General Crafts $(3,3)$ F,S Cummings, Moryl, Muller-Stach, Pine, Snidecor
Prerequisites: Art 121, 131, 181. Crafts processes, techniques and concepts in the design and making of utilitarian art objects.

## *454A-B. Handcrafted Furniture $(3,3)$ F,S Faculty

Prerequisites: Art 354A and B. Concepts and skills necessary for the production of handcrafted furniture. Emphasis on the use of hand techniques as a means of understanding the philosophy and aesthetics of handcrafted furniture.

499B. Special Studies in General Crafts (3) F,S Cummings, Snidecor
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in general crafts. Limited to six units in one semester and a total of nine units.

## General Studies in Art

## 304. Art for Recreational Programs (2) F,S Archer

Prerequisite: Art 100 or consent of instructor. Art and craft media, techniques and processes in recreation and leisure studies. For programs which reach diverse age and interest levels.
380. Drawing and Painting for Non-Art Majors (3) F,S Dame

Use of various drawing and painting media with emphasis on developing a personal approach to painting problems.
400. Studio Art for Non-Art Majors (3) F,S Faculty

Prerequisite: Art 100. Continuation and expansion of basic studies in color, drawing, painting and design. Emphasis on development of creativity and personal style.
*480. Art in the Community (3) F,S Faculty
Prerequisite: Upper division art major standing or consent of instructor. Opportunity to plan, develop and supervise art programs in the community.

## Graphic Design

*322A-B. Graphic Design $(3,3)$ F,S Dukes, Turnbull
Prerequisites: Art 121, 131, 181, 184, 187; 322B: Art 223, 237. Design concepts and applications appropriate to specific two-dimensional visual communications problems.

## 323A-B. Visual Communications Design Production Processes ( 3,3 ) F,

 TurnbullPrerequisites: Art 121, 181, 223. Printing processes relative to the needs of the graphic designer from typographic design to reproduced form.

## 324. Film Animation (3) F,S VanEimeren

Prerequisite: Consent of instructor by drawing portfolio presented at first class meeting. Design and production of color, super 8 mm and sound synchronized 16 mm animated films

## *325. Packaging Design (3) F,S VanEimeren

Prerequisites: Art 322B, 323B. Materials, processes and the design of packaging, including structural and graphic design consideration.
*422A-B. Advanced Visual Communications Design (3,3) F,S VanEimeren Prerequisites: Art 322B, 323B.
*442S. Internship in Visual Communications (3) F,S Boston, Turnbull, Van Eimeren
Prerequisite: Consent of instructor. Student internship experience in selected graphic design offices. Opportunity to work under supervision of professional graphic designers in the field. Limited to three units in one semester and a total of six units.
*499S. Special Studies in Visual Communications Design (3) F,S Faculty
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in graphic design. Limited to six units in one semester and a total of nine units.

## Illustration

*371A-B. Illustration ( 3,3 ) F,S Oden, Mendez
Prerequisites: (371A) Art 111 or 161, 112A,B,121, 131, 181, 184, 187; (371B) Art 223, 271, 284. Editorial and advertising drawing; professional media, skills and techniques survey.
*372. Anatomy for Artists (2) F,S Oden, Mendez
Prerequisites: Art 181, 184. Skeletal and muscle structure emphasizing the development of skill in depicting the human figure.
*373. Fashion Illustration (2) S Mendez
Prerequisites: Art 371A, 372. Fashion drawing for reproduction.
*374A-B. Biomedical Rendering $(3,3) \quad$ F,S Oden, Mendez
Prerequisite: Consent of instructor. Introduction to and practice in techniques of descriptive drawing and press reproduction of drawing. Emphasis on skill.
*471A-B. Advanced Illustration (3,3) F,S Oden, Mendez Prerequisite: Art 371B.
*499F. Special Studies in Illustration (3) F,S Oden, Mendez
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in illustration or biomedical art. Limited to six units in one sem ester and a total of nine units

## Industrial Design

*331A-B. Industrial Design (2,2) F,S Kammermeyer
Prerequisites: Art 121, 131, 181 or 224; Art 331B: Art 237, 231. Planning and design of useful products for industrial production.
*332. Rapid Visualization (2) F,S Myers
Prerequisites: Art 181,224, 231 or consent of instructor. Visual presentation of concepts with emphasis on qualitative and quantitative techniques of communication as used in contemporary industrial design.
*333A-B. Industrial Design Methodology (3,3) F,S Kammermeyer
Prerequisites: Mathematics 100, 101 or consent of instructor. Examination of methods and techniques in design problem solving
*431A-B. Advanced Industrial Design (4,4) F,S Tyrnauer
Prerequisites: Art 331B, Physics 100A,B, Industrial Technology 301 and 306 or consent of instructor. Advanced planning and design of projects in the area of mass produced objects, packaging, traffic, transportation, mechanical design and shelter.
*432. Advanced Rapid Visualization (3) S Myers
Prerequisites: Art 224, 231, 332, consent of instructor. Advanced idea generation and visualization for industrial design.

## *442G. Internship in Industrial Design (3) F,S Faculty

Prerequisite: Consent of instructor. Student internship experience in selected industrial design offices. Opportunity to work under supervision of industrial designers in the field to expand student understanding of the complexities, discipline and challenges in the practice of industrial design. May be repeated once for credit.

## 499G. Special Studies in Industrial Design (3) F,S Faculty

Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in industrial design. Limited to six units in one semester and a total of nine units

## Interior Design

*341A-B. Interior Design $(3,3) \quad \mathrm{F}, \mathrm{S}$ Brisker, Yates
Prerequisites: Art 112A,B, 121, 131 and 181 or 224; 341B: 224, 231, 237, 332. Design of interior environments emphasizing interrelationships between interior space, architectural form and human factors in design.
*342A-B. Architectural Drawing and Rendering (2,2) F,S Yates
Prerequisites: Art 121, 131, 181, 187, 224, 231; 342B: 332. Drawing, rendering and techniques of graphic expression for interior designers. Includes working drawings.

## *343. Materials of Architecture and Interiors (3) F Yates

Prerequisites: Art 121, 131, 224, 231, 237 or consent of instructor. Materials, processes and resources as they relate to architecture and interior design. Examination of technology and application through lecture, demonstration and field trips.

## *441A-B. Advanced Interior Design (3,3) F,S Brisker, Yates

Prerequisites: Art 341B, 342A-B or consent of instructor. Advanced interior design and space planning problems emphasizing relationships between the built environment and hum an factors in design.
*442H. Internship in Interior Design (3) F, S Brisker
Prerequisite: Consent of instructor. Student internship experience in selected interior design offices. An opportunity to work under supervision of interior designers in the field to expand student understanding of the complexities, discipline and challenges in the practice of interior design. Limited to six units in one semester and a total of nine units.
*499H. Special Studies in Interior Design (3) F,S Brisker, Yates
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in interior design. Limited to six units in one semester and a total of nine units.

## Metalsmithing and Jewelry

*357A-B. Jewelry $(3,3)$ F,S Muller-Stach, Pine
Prerequisite: Art 131. The design and creation of jewelry.
*358A-B. Metalsmithing $(3,3)$ F,S Muller-Stach, Pine
Prerequisites: Art 357A, Industrial Arts 282. The design and creation of flatware and holloware.

## 359. Architectural Metalwork and Blacksmithing (3) F Muller-Stach

Prerequisites: Art 121, 131. Techniques, materials and concepts of the metal craft for developing art forms in larger scale and in an architectural context. Hot forging and fabricating with ferrous metals. Basic techniques of cutting, forming, joining, welding and surface design of metals. Making of tools.
*458A-B. Advanced Metalsmithing and Jewelry (3,3) F, S Muller-Stach, Pine Prerequisites: Art 357B or 358B and consent of instructor. Individual problems in metalsmithing and jewelry.

## *499J. Special Studies in Metalsmithing and Jewelry (3) F,S Muller-Stach, Pine

Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in metalsmithing and jewelry. Limited to six units in one semester and a total of nine units.

## Museum Studies

*345. Introduction to Museums (3) F,S Faculty
Designed for students interested in pursuing the Museum Studies Certificate; also open to art majors and students from other disciplines. Study of current museums, their functions, services, audience and ethics. Field trips to local museums are included.
*442Q. Internship in Museum Studies (3) F,S C. Glenn
Prerequisites: Art $345,445 \mathrm{~A}-\mathrm{B}$ and consent of instructor. Student internship experience in selected museums, college and community art centers appropriate to the student's particular academic interest. Opportunity to work under supervision of museum professionals in the field to expand student understanding of the complexities, discipline and challenges in the profession. May be repeated once for credit.
*445A-B. Museum-Gallery Practices $(3,3) \quad$ F,S C. Glenn
Prerequisites: Art 345, consent of instructor. Pre-professional training in museum-gallery techniques: administration, exhibition, budget planning, curatorial problems, public relations, insurance, packing and shipping. The University Gallery will be the laboratory for practical experience: students will assist in conceiving and realizing exhibitions.
*499Q. Special Studies in Museum Studies (3) F,S Faculty
Prerequisites: Art 345, 445A and consent of instructor. Opportunity for extensive individual work with faculty supervision on problems in museum studies, including utilizing the resources of The Center for Southern California Studies in the Visual Arts. May be repeated once for credit.

## Printmaking

*376. Printmaking: Beginning Relief (3) F Swift
Prerequisites: Art 121, 181, 184. Beginning printmaking processes in woodcut, wood engraving, collography and three dimensional prints.
*377. Printmaking: Beginning Silkscreen (3) S Osborne
Prerequisites: Art 121, 181, 184. Beginning stencil techniques in silkscreen printmaking processes.
*378. Printmaking: Beginning Intaglio (3) F,S Swift
Prerequisites: Art 121, 181, 184. Beginning class in the development and printing of etching, engraving, drypoint, aquatint and experimental techniques.
*379. Printmaking: Beginning Lithography (3) F,S Osborne
Prerequisites: Art 121, 181, 184. A beginning class in stone lithography techniques in black and white and color.
*475. Printmaking Workshop: Advanced Processes (3) F,S Faculty Prerequisites: Art 277, 378, 379. A workshop devoted to advanced technical processes, photoprintmaking, shop practices and construction.
*477. Advanced Color Intaglio (3) F,S Swift
Prerequisite: Art 378. Making color etchings and engravings using single and multiple plate, color plates and viscosity color printing techniques.
*478. Advanced Lithography (3) F,S Osborne
Prerequisite: Art 379. Advanced lithographic techniques on stone and aluminum plate, in black and white and color.
*499R. Special Studies in Printmaking (3) F,S Osborne, Swift
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in printmaking. Limited to six units in one semester and a total of nine units.

## Sculpture

*361. Life Sculpture (3) F,S Werlick
Prerequisite: Art 161. Intensive study of the figure through individual student concepts. Mold and casting techniques and direct plaster parging.
*362A. Sculpture Processes (3) F, S Werlick
Prerequisites: Art 121, 131, 161, 181, 263. The traditional lost-wax techniques of casting non-ferrous metals. Wax formulation and manipulation, gating theory and practice, investment procedures, foundry management, metal casting, patination and tool making.

## 362B. Sculpture Processes (3) F,S Glenn

Prerequisites: Art 121, 131, 161, 181, 263. Sculpture composition in selected materials and processes such as welding and metal fabrication, stone and wood carving, mold making and casting, wood construction and ceramic sculpture.
*363. Sculpture (3) F,S Glenn
Prerequisites: Art 362A and B. Composition in sculpture utilizing a variety of processes and permanent materials.
*461. Advanced Life Sculpture (3) F,S Werlick
Prerequisites: Art 361, 362A and B. Large-scale sculpture from the model emphasizing expressive content. Work in clay and plaster, armature and stand construction, oil-clay formulation and advanced moldmaking techniques.
*463. Advanced Sculpture (3) F,S Glenn
Prerequisites: Art 361, 362A,B,363. Advanced composition in sculpture.
*499M. Special Studies in Sculpture (3) F, S Glenn, Werlick
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in sculpture. Limited to six units in one semester and a total of nine units.

## Textile Design

## *327A-B. Surface Design $(3,3)$ F, S Leland, Faculty

Prerequisites: Art 121, 181, 187. Variety of design concepts in relation to media and processes appropriate to both hand and commercial application to textile and other surfaces.
*328. Structures in Fiber (3) F,S Faculty
Prerequisites: Art 121, 131, 181, 187. Concepts and development in non-loom fiber structure.
*428A-B-C. Weaving $(3,3,3)$ F,S Leland, Faculty
Prerequisites: Art 121, 131, 181, 187. Weaves, techniques and materials of structural textile design with emphasis divided between commercial application and personal expression within the contemporary idiom. Art 428B and 428C require consent of the instructor.

## *499N. Special Studies in Textile Design (3) F,S Leland

Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in textile design. Limited to six units in one semester and a total of nine units.

## Graduate Division

## 509A-B. Studio Problems in Art Education (2,2) F,S Faculty

Prerequisite: Consent of instructor. Advanced individual graduate problems in art education with projects related to specific learning situations.

## 559. Advanced Ceramic Shell Casting (3) S Hitchcock

Prerequisite: Art 459. Lost wax casting of art forms in various metals using advanced techniques of ceramic shell moldmaking. Limited to nine units.

## 580. Community Arts Programs (3) F,S Faculty

Prerequisite: Graduate standing in art, Art 480 or consent of instructor. Further development of experiences gained in Art 480 with emphasis on developing understanding of the total program of selected community agencies and the relationship of arts programs to the whole.

## 590. Special Problems in Studio Art (1-3) F,S Faculty

Prerequisite: Consent of instructor. Special problems of current interest in studio art will be selected for intensive study. May be repeated with different topics
599. Studio Problems in Art (3-12) F, S Faculty

Prerequisite: Consent of art department. Advanced individual graduate projects with faculty supervision, in an area of art specialization. Limited to six units in one semester and a total of 12 units in any one area. Areas will be designated by letter at the time of registration: (a) ceramics, (b) general crafts, (c) display and exhibition, (d) drawing, (s) graphic design, (f) illustration, (g) industrial design, (h) interior design (i) life drawing, (i) metalsmithing and jewelry, (k) painting, (m) sculpture, ( $n$ ) textio design, (r) printmaking and (t) intermedia. Intermedia units will apply to the drawing and painting specialization.

## 601A-B. Seminar in Art Education (3,3) F,S Faculty

Prerequisite: Consent of instructor. Special studies, research and evaluation of the role of the art teacher

## 611. Seminar in Art History (3) F,S Faculty

Prerequisite: Consent of instructor. Directed individual research and group discussion concerning a topic in art history. Limited to six units in one semester may be repeated to nine units

## 690. Graduate Seminar in Studio Art (3) F,S Faculty

Prerequisite: Consent of instructor. Limited to three units in one semester and a total of six units. Selected reading and writing concerning topics relevant to student's specific disciplines in the visual arts with an opportunity for interdisciplinary discussion.

## 692. Public Exhibition (2) F,S Faculty

Prerequisite: Consent of instructor. Planning, preparation and administration of a public exhibition of creative work related to the art field. Two unit designation for all M.A. candidates. Three unit designation for all M.F.A. candidates. The course work will result in a public exhibition by each M.A. and M.F.A. candidate.
694. Directed Studies - Studio (1-3) F, S Faculty

Prerequisite: Consent of instructor. Independent studies in creative studio.
695. Field Problems in Art (1-6) F,S Faculty

Opportunity to study artistic monuments, objects, theories, techniques or literature at appropriate off-campus locations. Up to six units of cumulative credit may be earned in Art 695.
697. Directed Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Independent studies in technical and historical aspects of art
698. Thesis or Project (1-6) F,S Faculty

Prerequisite: Consent of instructor. Planning, preparation, and completion of a thesis or project related to this field. Open only to students who have been admitted to candidacy. Required of all master's candidates in art
699. Thesis or Project (1-6) F,S Faculty

Prerequisite: Consent of instructor. Planning, preparation and completion of thesis or project related to this field. Open only to students who have been admitted to M.F.A. candidacy or second M.A. candidacy in art. Required of all M.F.A. candidates and all candidates seeking a second M.A. in art.

## Asian American Studies

## Director: Dr. Franklin Odo.

## Professors: Inui, Johnson.

## Associate Professor: Odo.

## Academic Advising Coordinator: Dr. Franklin Odo.

Asian American Studies is a unique program with two distinct functions: to esearch and investigate the Asian American from a variety of perspectives in order to provide information heretofore unavailable and to make this information known not only to Asian Americans but to all people.

The program is an interdisciplinary curriculum leading to knowledge and raining necessary for (1) professional work in the Asian American community, (2) various occupational skills including teaching, school administration, social work, government work, urban planning, communications, (3) exploring an educational dimension by emphasizing and focusing on ethnic minorities.

At present the Asian languages, which are administered in the Asian American Studies Program, include first and second year Chinese, and the first, second and third year of Japanese.

## Certificate in Asian American Studies

Students pursuing any approved degree or credential program of the University may at the same time earn a Certificate in Asian American Studies. Courses taken to meet the requirements may also simultaneously be used, where applicable, to meet General Education requirements or the degree or credential requirements of erenting departments. Certification of successful completion of requirements will be issued upon the recommendation of the Director of the Asian American Studies Program.

Requirements for the Certificate in Asian American Studies

1. A bachelor's degree with a major in a traditional discipline. (Certificate requirements may be completed prior to the completion of the B.A. requirement.)
2. A minimum of 30 units distributed as follows: eight units of an Asian language: Asian American Studies 102, 220, 345 and 370 which are core courses; a minimum of three units selected from Asian American Studies 90; additional courses selected from Asian American Studies 200, 310, 320, $330,340,380,430,470,499$.
Interested students should apply to the Director, Asian American Studies Program, Dr. Franklin Odo.

## Minor in Asian American Studies (code 0-8430)

A minimum of 22 units which must include: (a) Asian American Studies 200, 220, 310, 345; (b) nine units selected from Groups I and II with at least three units selected from Group II courses
Group I: Asian Am erican Studies 320, 330, 370, 380, 490, 499
Group II: Asian American Studies 430, 470

## Lower Division

102. Asian American Experience (3) F,S Odo

Quest for identity of the Asian minorities in America; issues, problems and alternatives which confront the Asian American. Emphasis on small group interaction and counseling of individual students.
200. Asian American Inter-Ethnic Relations (3) F Faculty

Behavior and orientation of the Asian Americans as a minority group; emphasis on the nature of their relations and their patterns of interaction with other minorities as well as the majority culture.
220. Asian American History (3) F,S Inui, Odo

History of the arrival, settlement and experiences of Asians in America from the 1840's to the present.

## Upper Division

310. Education and the Asian American (3) F,S Faculty

Examining problems and potentials of a multi-racial classroom for the understanding of and relating to students of diverse cultural backgrounds, with an emphasis on the Asian American. Small group interaction and counseling of individual students

## 320. Mass Media and the Asian American (3) S Faculty

Prerequisite: Asian American Studies 102 or consent of instructor. Structure and operation of the various forms of mass communications; impact on American society and the Asian American image. Emphasis on student research and writing.
330. Politics and the Asian American (3) S Odo

Prerequisite: Asian American Studies 102 or consent of instructor. Background, development and character of the political attitudes, behavior and roles of the Asian American. Emphasis on survey and analysis of the contemporary aims and activities of Asian Americans.

## 340. Asian American Family (3) F,S Inui

Study of the Asian American family as a social institution; emphasis on the influence and consequences of the traditional Asian values and the impact of Western culture in the formation of a distinct family life style.

## 345. Asian American Community Analysis (4) F Odo

Prerequisite: Asian American Studies 102 or consent of instructor. Socioeconomic, political and cultural profile of Asian American communities; role and function of community organizations. Training in community surveys and service. (Lecture, activity.)

## 370. Asian Man and Woman in America (3) F,S Johnson

Prerequisite: Asian American Studies 102 or consent of instructor. Roles as individuals, as sexual counterparts and their relationship to each other and to the majority culture. Small group interaction and counseling of individual students.

## 380. Asian Philosophies and Religions in America (3) S Inui, Johnson

Influence of and changes in Asian philosophies and religions in the American environment. Emphasis on Confucianism, Taoism, Hinduism, Buddhism and Shintoism in relation to individual and social values in America.
430. Japanese Americans and World War II (3) S Inui, Odo

Prerequisite: Asian American Studies 102 or 220 or consent of instructor Background to and impact of evacuation and incarceration of Japanese Americans during World War II. Consideration of constitutional, economic, social and literary issues.

## 470. Counseling the Asian American (3) $S$ Johnson

Examining current theories and practices in counseling and guidance. Emphasis on the special problems encountered in counseling the Asian Am erican. Training will be directed toward meeting the personal, educational and vocational needs and aspirations of the Asian American.

## 490. Special Topics in Asian American Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Topics of current interest in Asian American Studies selected for intensive development. May be repeated for a maximum of six units. Topics will be announced in the Schedule of Classes.
499. Directed Studies (1-3) F,S Inui, Johnson, Odo

Prerequisite: Consent of instructor. Directed studies to permit individual students to pursue topics of special research interest. May be repeated to a maximum of six units.

## Asian Languages

## Administrator: Dr. Franklin Odo.

Associate Professors:Li, Miyazaki, Odo
Assistant Professor: Pusavat.
Academic Advising Coordinator: Dr. Franklin Odo
The program in Asian languages is governed by a board of two members representing the Center for Asian Studies and one representing the Asian Am erican Studies Program, and is housed administratively with the Asian American Studies Program. Course work in Asian languages is required for the Certificate in Asian Studies and for the master of arts degree in Asian studies. Asian language courses are also appropriate electives to support several of the majors offered by the University.

## Chinese

Lower Division
$221 \mathrm{~A}-\mathrm{B}$. Fundamentals of Chinese $(4,4) \mathrm{F}, \mathrm{S} \mathrm{Li}$
Prerequisite for 221B: Chinese 221A. Introduction to grammar, reading, pronunciation, writing and conversation. Not open to students with previous training or to native speakers of Chinese.

Upper Division
331A-B. Intermediate Chinese $(4,4) \mathrm{F}, \mathrm{S}$ Li
Continuation of first year Chinese. Reading and translation of simple stories and essays; emphasis on grammar, composition and conversation.

331 A . Prerequisite: Chinese $221 \mathrm{~B}, 331 \mathrm{~B}$. Prerequisite: Chinese 331A.
370. Chinese Literature in Translation (3) S Li

Readings in translation of representative works of the major literary genres in China covering both the classical and the modern period. Previous knowledge of the language is highly desirable, but not necessary.

## 490. Special Topics in Chinese (1-3) F,S Faculty

Prerequisite: Consent of instructor. Topics related to advanced Chinese anguage study and Chinese language instruction selected for intensive development.
499. Directed Studies in Chinese (1-3) F,S Li

Prerequisite: Consent of instructor. Independent study under supervision of a faculty member. May be repeated for a maximum of 6 units.

## Japanese

## Lower Division

221A-B. Fundamentals of Japanese (4,4) F,S Miyazaki, Pusavat introduction to grammar, reading, pronunciation, writing and conversation.

## Upper Division

300. Calligraphy (3) S Faculty

History and theory of Shodo (Japanese calligraphy). Practice in actual writing ith brush to develop skills in kanji and kana. Pursuit of simplified yet multi dimensional beauty by means of one color which is sumi ink. Previous knowledge of Japanese is helpful, but not required. (Lecture 1 hour, laboratory 4 hours.)

## 331A-B. Intermediate Japanese (4,4) F,S Miyazaki, Pusava

Continuation of first year Japanese. Progressive drill on syntax and grammar and sentence patterns: reading, translation and composition
331 A. Prerequisite: Japanese 221B. 331B. Prerequisite: Japanese 331A.
370. Japanese Literature in Translation (3) F,S Faculty

Readings in translation of representative works of the major literary genres in Japan covering both the classical and modern period. Previous knowledge of the language is highly desirable, but not necessary. (Lecture-discussion 3 hours.)

405A-B. Conversational Japanese (3,3) F,S Miyazaki, Pusavat
Prerequisite: Japanese 331 B or its equivalent as determined by instructor. Advanced study in modern spoken Japanese.

## 441A-B. Advanced Japanese ( 3,3 ) F, S Miyazaki, Pusavat

Prerequisite: Japanese 331 B or its equivalent as determined by the instructor Study of modern spoken and written Japanese involving advanced patterns, expressions.

## 990. Special Topics in Japanese (1-3) F,S Faculty

Prerequisite: Consent of instructor. Topics related to advanced Japanese language study and Japanese language instruction selected for intensive development

## 499. Directed Studies in Japanese (1-3) F, S Miyazaki, Pusavat

Prerequisite: Consent of instructor. Independent study under supervision of a faculty member. May be repeated for a maximum of 6 units.

## Asian Studies

Director: Dr. Charlotte Furth
Professors: Aall, Carr, Chawla, Furth, Inui, Kim, Kimura, Lipski, McKay, Marsot, Shoup.
Associate Professors: Debysingh, Ishimine, Libby, Miyazaki, Odo, Sievers.
Assistant Professors: Broughton, Brown, Li, Pusavat, Ruyle.
Academic Advising Coordinator: Dr. Charlotte Furth.
The Asian Studies Program provides a framework within which students may explore one or more Asian societies from an interdisciplinary perspective. The program encourages students to integrate the study of Asian peoples across the Pacific with that of Asian American communities in the United States and to support the study of culture and society with appropriate language training.

Through academic offerings of its own and those of 11 cooperating departments, the Asian Studies Program offers a B.A. and an M.A. in Asian Studies and a Certificate in Asian Studies. Additional information and advice relative to the program are available through the director of the Asian Studies Program, F04-167.

## Bachelor of Arts Degree with a Major in Asian Studies (code 2-0508)

Students choosing an Asian studies major are advised to select one of two options for the degree. They may emphasize area studies, a social science and humanities based study of one or more specific Asian societies, such as China, Japan or India. They may opt for Asian American Studies, and combine the study of Asian Americans as an ethnic minority with supporting investigation of the countries of their historical origin.

Lower Division: A minimum of 15 units
Required of all students: Asian Studies 100, 101 ( 6 units); three semesters (9-12 units) of an Asian language, chosen from among the following: Chinese 221A, 221B, 331A; Japanese 221A, 221B, 321A; Sanskrit 331, 332, 341.

Upper Division: A minimum of 21 units; students should select one of the following two options:
I. Area Studies Option-21 units of upper division work, selected from the list of approved electives with the following provisions: (1) no more than nine units shall be taken in a single discipline, such as art or history, (2) courses shil concentrate upon two geographic areas of Asia, chosen from among the Alan Southeast Asia, the Americas (Asians in America). No more than six units of courses on the Americas can be applied toward this requirement.

II Asian American Studies Option
Lower Division: Asian American Studies 102 or 220
Upper Division: 21 units of work, selected from the list of approved electives with the following provisions: (1) 12 units of upper division Asian American studies shall be required including Asian American Studies 310 and 345 , (2) of the remaining upper division units, no more than six shall focus on one geographical area of Asia, chosen among the following: China, India, Japan, Southeast Asia.

## Master of Arts Degree with a Major in Asian Studies (code 5-0508)

The master of arts degree in Asian studies is an interdisciplinary degree offered the Asian studies faculty of the cooperating departments. It is especially aimed at those who wish to teach Asian civilization courses on secondary level are preparing for doctoral work as well as for those intending to go into foreign service Peace Corps or foreign trade. A Handbook for the Master's Degree in Asian Studies is available in the office of the director, F04-167

## Prerequisites

1. A bachelor's degree in one of the fields in social science or in the humanities or in fine arts.
2. The Certificate in Asian Studies, awarded at CSULB or its equivalent as evaluated by the director of the Center for Asian Studies. An equivalence will, normally, be granted for work in Asian studies at CSULB and/or at other academic institutions, including a minimum of 18 units in no more than four disciplines with a minimum of six units in each of two disciplines of concentration plus two semesters of Asian language. Only courses dealing entirely with Asian studies are acceptable.
3. Other prerequisites to be determined by the director. Students whose undergraduate prerequisites are inadequate will be required to fulfill these deficiencies before advancement to candidacy and will, in the meanwhile, receive unclassified graduate status until all deficiencies are removed. In such event, they are not permitted to take courses in the 500-600 series.

## Advancement to Candidacy

1. Satisfaction of the general University requirements for advancement to candidacy.
2. See Handbook for the Master's Degree in Asian Studies available in the director's office.

## Requirements for the Master of Arts

1. In their first semester of work, students should complete the Graduate Aptitude English Cooperative Examination. The examination fee is $\$ 3.00$, payable at the Business Office, and the test is administered upon request at the Testing Office.
2. A minimum of 30 units of approved upper division and graduate courses. At least 15 units must be in the 500-600 series composed of units earned at this University in graduate courses, graduate seminars, Directed Research or Thesis. Seminars can be repeated once, but no more than three units of 697 may be used to satisfy degree requirements for those following the mprehensive examination option. A maximum of six units will be given for Asian Studies 698 for those following the thesis option.
3. A minimum of three upper division units in each of two disciplines of concentration to be taken preparatory to seminar work. At least six units of 500-600 level work in each of the two disciplines of concentration. A comprehensive written examination in the two disciplines of concentration, or a thesis.
4. Six units in an Asian language from among the following: Sanskrit, Chinese, Japanese, to be chosen in consultation with the director.

## Certificate in Asian Studies

A student may earn a Certificate in Asian Studies with a concentration on either China, Japan or India. Courses used to meet the certificate requirements also may be used to satisfy, where applicable, the General Education requirement and the major and teaching minor requirements of the cooperating departments.

## Requirements for the Certificate in Asian Studies:

1. A bachelor's degree.
2. A minimum of two semesters of an Asian language which is to be selected in accordance with the area of concentration.
3. Eighteen units selected from three or four of the disciplines listed below (in addition to the two semesters of Asian languages) limited in accordance with the area of concentration and in consultation with the student's adviser. No more than six units in any one discipline shall apply towards the certificate
Asian Studies courses: Asian Studies 100, 101; Anthropology 332, 333; Art 113A-B
319A-B, 415A-B, 491, 492, 494A-B, 497; Comparative Literature 234, 325,$~ 403$; Economics 362, 367; Geography 313, 314; History 181A,B, 382A,B, 383A,B, 385A,B, 401, 481 $\ddagger, 487,488,682$, 683; Music 394; Philosophy 306, 307; Political Science 362, 363, 364, 366, 407; Religious Studies 152, 341, 343, 344, 351, 481 $\ddagger$ Theatre Arts $325 \dagger$; Sanskrit 331, 332, 341, 342; Japanese 221A,B, 300, 331A,B $405 A, B, 441$ A , 441B, 499; Chinese 221A, B, 331A, B, 499
Interested students should apply to the Director for Asian Studies.

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## Upper Division Courses Acceptable for the Master's Degree

 Anthropology332. Cultures of China and East Asia (3)
333. Cultures of India and Southeast Asia (3)
334. Japanese Culture (3)

## Art

319A-B. Chinese Art $(3,3)$
415A-B. Art of India $(3,3)$
491. Buddhist Art of Southeast Asia (3)
492. Islamic Art of Persia and Mogu India (3)
494A-B. Art of Japan $(3,3)$
499Q. $\dagger$ Special Studies in Art History (1-3)

## Comparative Literature

$325 . \ddagger$ Asian Theatre and Drama (3
439. Asian Literature (3)

Economics
362. Japanese Economy (3)
367. Chinese Economy (3)

## Geography

313. Eastern Asia (3)
314. Southern Asia (3)

382A. Imperial China (3)
382B. Modern China (3)
383A. Traditional Japanese Civilization (3)
383B. Modern Japan (3)
385A. The Early History of India (3)
385B. History of Modern India (3)
401B. History of Women in the NonWestern World (3)
481. $\ddagger$ Modern Hindu Religious Thought (3)
487. Intellectual History of Recent Japan (3)
488. The Chinese Revolution (3)

## Philosophy

306. Philosophies of China and Japan (3)
307. Philosophies of India (3)

## Political Science

362. Society and National Politics of China (3)
363. Society and National Politics of Japan (3)
364. Society and National Politics of India (3)
365. Governments and Politics of

Southeast Asia (3) Sanskrit 332. | Intermediate Sanskrit |
| :--- |
| (3) |

## Asian Languages and Literature

## Sanskrit 331. Fundamentals of

 Sanskrit (3)
## Courses Offered

## Lower Division

100. Traditional Asia (3) F Faculty

Introduction to traditional civilizations of China and India with some reference to
Introduction to traditional civilizations of China and of Asia.

## 101. Modern Asia (3) Saculty

Emphasis on China and Japan in the modern world with some attention to India Ell as the experiences of Asians in the U.S. Continuity and change; reform and revolution in culture, politics and the economy will be included.

## Upper Division

490. Special Topics in Asian Studies (1-3) F,S Faculty

Topics of special interest in Asian Studies selected for intensive study. Topics will be announced in the Schedule of Classes. May be repeated with different topics to a maximum of six units.

## Graduate Division

Graduate course descriptions are found in the departmental listings in which they are offered. Graduate courses applicable for the degree (when the focus is on Asia) are Asian Studies 695, 697, 698; Art 611; History 510, 520, 682, 683; Political Science 600, 610

[^7]695. Directed Readings (1-3) F,S Faculty

Prerequisite: Consent of Director of Asian Studies. Readings in Asian studies on an individual basis.

## 697. Directed Research (1-3) F,S Faculty

Prerequisite: Consent of Director of Asian Studies. Research in Asian studies on an individual basis
698. Thesis (2-6) F,S Faculty

Prerequisite: Consent of Director of Asian Studies. Planning, preparation and completion of a thesis in Asian studies


Department Chair: Dr. Larry Leamy
Emeriti: Robert P. Durbin, Ross Hardy, Kenneth E. Maxwell, Donald D. Shipley
Professors: Alfieri, Anand, Baird, Beekman, Bourret, Callison, Collins, Cox, Dailey Hrubant, Jones, Kluss, Kroman, Leamy, Lincoln, Loomis, Mansfield-Jones, Menees, Nelson, Rainey, Reish, Schatzlein, Sleeper, Stephens, Warter, Wellhouse, Wood.
Associate Professors: Baker, Biedebach, Dash, Galt, Gregory, Hill, Ho, Huckaby, Jenkins, Parmley, Ting, Tjioe.
Assistant Professors: Clover, Leister, Miller, Pang, Yokoyama.
Credential Adviser: Dr. William C. Ritz.
Undergraduate Adviser: Dr. Larry Leamy.
Graduate Adviser: Dr. Richard B. Loomis
Programs in biology are offered to provide preparation for advanced study at the graduate level, pre-professional programs in medicine, dentistry and allied fields as well as for teaching or careers in industry and government.

The department offers a varied program in the biological sciences that can lead to a degree in any one of the following: biology, botany, entomology, marine biology or zoology. Courses in any of these degree programs should be selected in consultation with the major adviser who will be assigned in the department office Elective courses may be selected that provide an emphasis in one, combination, of the following: biosystematics, ecology, genetics, marine biology morphology and plant or animal physiology

The department occupies facilities in three science buildings and has an ectron microscope, a seawater system, greenhouses and research and teaching - fund vascular plants, invertebrates (including insects) and vertebrates. Courses are offered in several areas of experimental biology. Because the campus is near the ocean, mountains, and deserts, the department is able to offer a number of field and laboratory courses in botany, ecology, entomology marine biology and vertebrate zoology

The Biology and Art Departments offer an interdisciplinary program in biomedical art which is described in this section

The Biology Department also participates in the interdisciplinary Center for cean Science Studies. Information is listed in this Bulletin.
The Department of Biology offers a master of science degree for students completing advanced study. The available programs cover the full spectrum o biology from the molecular to the ecosystem levels and include both laboratory and field study programs. A list of research areas with the names of faculty specializing in these fields can be obtained from the department office.

The department occupies facilities in three science buildings with numerous laboratories containing many items of special equipment. Large research-study collections of plants and both invertebrate and vertebrate animals are available for use.

## Financial Support, Assistantships

The Department of Biology offers a limited number of teaching and graduate assistant appointments. Forms requesting consideration for these appointments are available in the department office. Duties consist of approximately 20 hours per week devoted to preparation and/or instruction in general undergraduate laboratory classes. These appointments are limited to a maximum of four semesters per individual

The department also has a limited number of technical assistant positions as well as some hourly em ployment.
Several members of the faculty have grants which provide for research assistantships.

A number of scholarships are available through the University.
Students should consider the following degree requirements as minimal. Those individuals desiring entrance into medical, dental, veterinary or graduate schools should check the requirements for entrance before planning which courses to take for any degree. Specifically, many professional and graduate schools require more calculus (either Mathematics 115S and 116 or Mathematics 122, 123 and 224), and more organic chemistry (Chemistry321A and 322 instead of 327).

Major in Biology for the Bachelor of Arts Degree (code 2-7621)
Lower Division: Chemistry 111A-B; Biology 212, 216; Physics 105, 106; Microbiology 210; Mathematics 112, and either Mathematics 115 S or Biology 260.
Upper Division: Chemistry 327 and a minimum of 28 units in biological sciences including the following: Biology 350; 370; 340 and 340 L or 342 and 342 L or 440 or 447 and 447L; 313 or 316 or 324 or 332 or 333 ; and 425 or 426 or 427 or 438 or 439 The student's entire program must include a minimum of two upper division animal biology courses and two upper division plant biology courses. A list of acceptable courses to meet this requirement is available in the Biology Department office. Remaining electives should be selected from above as well as other courses in consultation with a faculty adviser.

## Major in Botany for the Bachelor of Science Degree (code 3-7642)

Lower Division: Chemistry 111A-B; Biology 212, 216; Physics 105, 106; Microbiology 210; Mathematics 112 and either mathematics 115 S or Biology 260.
Upper Division: Chemistry 327 and a minimum of 33 units of upper division courses in biological sciences including Biology 316, 370, 427, 439, 447, 447L, 450, and the remaining units to be selected in consultation with the major adviser.

## Major in Entomology for the Bachelor of Arts Degree (code 2-7652)

Lower Division: Chemistry 111A-B; Biology 212, 216; Physics 105, 106; Mathematics 112 and either Mathematics $115 S$ or Biology 260.
Upper Division: Chemistry 327; Biology 316, 370; Biology 427 or 429 or 447 and 447L; either Ecology (Biology 350 or 456 or 450 or 453 ) or Biochemistry (Chemistry 441 A or 448 ); Biology 340 and 340 L or 342 and 342 L or 440 or 448 ; six additional units of electives in Natural Sciences (excluding Entomology) selected in consultation with the major adviser. A minimum of 18 units of Entomology (including General Entomology) must be completed (these units to be determined in consultation with the major adviser).

Major in Marine Biology for the Bachelor of Science Degree (code 3-7626)
Lower Division: Chemistry 111A-B; Biology 212, 216; Physics 105, 106; Mathematics 112 and either Mathematics 115 S or Biology 260.

Upper Division: Chemistry 327; Geology 465, 466; Biology 313, 353, 370, 416, 419, 340 and 340 L or 440,425 ; six units of electives in marine biology and related areas selected from Geology 464; Biology 314, 315, 351, 417, 452; Civil Engineering 468; Microbiology 441; plus six units of electives from Biology 324, $330,331,332,333,350,360,430,433,438,439,447,447 \mathrm{~L}, 455,456$.

## Major in Zoology for the Bachelor of Science Degree

Lower Division: Mathematics 112, 115S; Chemistry 111A,B; Physics 105, 106; Biology 212, 216, 260. Additional courses listed below.
Upper Division: Biology 370.

## General Zoology Option (code 3-7643)

Lower Division: Microbiology 210 or Geological Sciences 102 and either 104 or 105.
Upper Division: Chemistry 327 and 448; 31 units of Biology including one course selected from $313,315,316$, or 317 ; one course selected from $419,421,424,423$ 324 ; one course selected from $332,333,335$, or 433 ; and 4 units from 340 and $340 \mathrm{~L} ; 342$ and 342 L , or 440 ; and 350.

## Physiology Option (code 3-7604)

Lower Division: Microbiology 210.
Upper Division: Chemistry 321A, 322, 441A and 441B; 28 units of Biology including one course selected from $332,333,335$, or 433 ; eight units selected from 340 and $340 \mathrm{~L}, 342$ and 342 L , or 440; and nine units selected from $340,342,440,441,442$, $443,446,448,455,470,473$.

## Terrestrial Biology Option (code 3-7645)

Lower Division: Geological Sciences 102 and either 104 or 105.
Upper Division: Chemistry 327; 34 units of Biology including 316; 324 or two courses selected from 421, 424, or 423; 427; one course selected from 332,333 , or $335 ; 340 ; 340 \mathrm{~L} ; 350$; and 412 .

Minorin Biology (code 0-7621)
A minimum of 19 units is required for the minor.
Lower Division: A minimum of 10 units including Biology 212 and 216.
Upper Division: A minimum of nine units selected from upper division biology courses except 300,301 and 307 , with at least one course selected from the 400 series.

Minor in Physiology (code 0-7604)
A minimum of 18 units is required for the minor. Majors in the Biology Department may elect this minor but the 18 units are in addition to those required for their major.
Lower Division: A minimum of seven units selected from the following courses: Biology 107, 202, 207, 208, 209, 216.
Upper Division: A minimum of 11 units selected from the following courses, at least eight of which must be selected from the Biology Department: Biology 307, 332, $336,340,340 \mathrm{~L}, 342,342 \mathrm{~L}, 345,440,441,442,443,446,448$; Physical Education 335; Chemistry 441A-B, 448; Psychology 345; Home Economics 331, 436.

## Certificate Program in Biomedical Art

The Certificate Program in Biomedical Art is an interdisciplinary program sponsored by the Art and Biology Departments. Requirements for the certificate are listed in the Art section of this Bulletin.

Co-directors of the CSULB biomedical art program are in art: Richard Oden, professor, and Peter Mendez, assistant professor, and in biology: Dr. Hiden T. Cox, professor, and Dr. Kenneth Gregory, associate professor. Questions may be addressed to them during office hours which are listed in the respective departmental offices.

## Master of Science Degree with a Major in Biology (code 6-7621)

## Application

Prospective graduate students in biology, including CSULB graduates, must formally apply for admission to the University as described earlier in this Bulletin and must also apply directly to the Department of Biology. All applicants must submit the following documents directly to the department:

1. Departmental Application Form (available from the departmental graduate studies office)
2. Official transcripts of all college level academic work. These are in addition to those required for general University graduate adm ission
3. At least two letters of recommendation from persons familiar with the applicant's academic performance and research potential.
4. Official reports of scores on the Graduate Record Examination (Aptitude Test and Advanced Test in Biology). These examinations should be taken well in advance of application to the department. Official scores must be received from the Educational Testing Service by the deadlines below.

## Application Deadlines

Applicants must arrange for all materials (Departmental Application Form ranscripts, letters of recommendation and GRE scores) to reach the Department of Biology Graduate Studies Office no later than April 15 or November 15, to be considered for admission during the next fall or spring semesters, respectively

## Prerequisites

1. A bachelor's degree in biological science from an accredited institution. The undergraduate program must have included at least 24 units of upper division biology courses comparable to an undergraduate major in the Department of Biology at this University. Students lacking some of this background must make up all course and unit deficiencies before advancement to candidacy.
2. An undergraduate overall grade point average of at least 2.75 , or a grade point average of at least 3.0 in the last 60 semester ( 90 quarter) units completed as an undergraduate. A student who does not meet one of these requirements but who shows considerable promise may be given special consideration for admission if, and only if, a written request for such consideration from a faculty member of the department is included with the applicant's admission materials. Such letter must meet the application deadlines above and must assure the Graduate Studies Committee that the faculty member will serve as the student's thesis adviser. Students receiving such special consideration must complete, with a grade of $A$ or $B$, nine probationary units acceptable to the Graduate Studies Committee and Department Chair before advancement to candidacy.

## Admission to the Department of Biology Master's Degree Program

Each student will be interviewed during the registration period by the Graduate Studies Committee for the purposes of determining any scholastic deficiencies and providing academic counseling and orientation.

Admission to the master's degree program requires that the student seek out and be accepted by a faculty member who will serve as the student's thesis adviser. This should be accomplished during the first semester in residence

## Advancement to Candidacy

The steps leading to advancement to candidacy are:

1. Admission to the Department of Biology master's degree program
2. Satisfactory completion of any scholastic deficiencies and/or probationary units.
3. Maintenance of an overall grade point average of 3.0 for all course work attempted as a graduate student.
4. Selection by the student and thesis adviser of at least two additicnal faculty members to serve on the student's Graduate Committee. The departmental

Graduate Adviser serves as an ex-officio member of all graduate committees.
5. Establishment, by the student's Graduate Committee, upon review of academic work, transcripts and GRE scores, of a graduate program of study. The Department will forward the graduate program for final approval. This should be done within the first year in residence. Note that no more than 12 units completed prior to the establishment of the student's graduate program may be counted towards the degree requirements without prior approval of the Graduate Studies Committee or the departmental Graduate Adviser. The program must include a minimum of 30 units of upper division and graduate courses at least 17 of which must be in the 500-600 series in biology.

Each program must include six units of Thesis, Biology 698; one-three units of Directed Research, Biology 697; and two different seminars (maximum three units), Biology 660. Of the 30 units, no more than six units may be accepted from transfer credit and/or other departments within the University
6. Upon notification of advancement to candidacy, the student will have attained official classified graduate standing.

## Requirements for the Master of Science

1. Advancement to candidacy and completion of the graduate program of study with a minimum overall grade point average of 3.0 in all course work.
2. Completion of a final comprehensive examination administered by the candidate's Graduate Committee. This examination may be taken at any time after advancement to candidacy but must be scheduled no later than the end of the first six weeks of the semester in which the student expects to graduate. This examination must be passed prior to submission of the thesis to the department. No examinations may be scheduled during the summer months.
3. Completion of a thesis including oral presentation and defense

## Concurrent and/or Summer Enrollment in Another College

Students who wish to take course work in a community or another college to meet curricular requirements while enrolled as undergraduates in the School of Natural Sciences must petition the appropriate department for prior approval to enroll in specific courses. This policy is for either concurrent enrollment or summer enrollment. University policy must also be complied with. See "Concurrent Enrollment" and "Transfer of Undergraduate Credit" in this Bulletin. Courses not receiving prior approval will not be accepted for credit by the department.

## Lower Division

## 00. Man and His Environment (3) F,S Faculty

Biological perspective on human problems including interactions between man and the world he lives in; the problems resulting from ignoring known ecological principles and the cultural implications of biological concepts. Not open for credit to biological science majors. (Lecture 3 hours.)

## 103. Animal Life in Southern California (3) F,S Rainey

Ecology, aesthetics and economic importance of some common amphibians, eptiles, birds and mammals of Southern California. Not open for credit to biological science majors. (Lecture 2 hours, laboratory 3 hours.)
105. Insects and Man (3) F,S Wellhouse

Discussion of the insects and their allies with emphasis on insect behavior and the role of beneficial forms in the natural environment. Not open for credit to biological science majors. (Lecture, discussion 3hours.)

## 106. Birds (3) $S$ Collins, Warter

General identification, life histories, ecology and conservation of local birds. Not open for credit to biological science majors. (Lecture 2 hours, laboratory and field 3 hours.)

## 107. Human Body-Structure and Function (3) F,S Faculty

Brief survey of structure and function of human systems. Designed for those who desire basic understanding of the body. Not open for credit to biology majors. Not open to students with credit in Biology 206. (Lecture 2 hours, laboratory 3 hours.)
200. General Biology (3) F,S Dash, Faculty

Survey of living organisms, including studies of the cell, metabolism, classification, life histories and heredity. Not open to majors or minors in biological science. (Lecture 2 hours, laboratory 3 hours.)

## 201. Marine Natural History (3) F,S Miller, Reish

Native plants and animals of the coast; emphasis on identification and life history of local forms. Collecting of specimens for study in laboratory an integral part of course. Not open to biological science majors. (Lecture 2 hours, laboratory and field 3 hours.)

## 202. Human Anatomy (3) F,S Parmley

General introduction to the structure of human body systems with emphasis on skeletal and muscular systems. Not open for credit to biological science majors. Not suggested for general education requirement of a laboratory science. Not open to students with credit in Biology 101. (Lecture 2 hours, laboratory 3 hours.)
203. Conservation of Natural Resources (2) F,S Faculty

Natural resources of the world, with emphasis on those of the United States; extent, value, wise utilization and conservation of these resources for future generations. Not open for credit to biological science majors. (Lecture 2 hours.)

## 204. Heredity (3) S Hrubant

Principles of inheritance; role of heredity in improvement of plants and animals; implications in human genetics. Not open for credit to biological science majors. (Lecture 3 hours.)
205. Organic Gardening (3) F,S Bourret, Lincoln

Basic principles of flowers, vegetables and small fruit culture with emphasis on the concepts and practice of organic gardening. Not open for credit to biological science majors. (Lecture 2 hours, laboratory and field 3 hours.)

## 207. Human Physiology (4) F,S Biedebach

General introduction to the functional integration of human body systems. Not open for credit to biological science majors. Not open to students with credit in Biology 102. (Lecture 3 hours, laboratory 3 hours.)

## 208. Human Morphology (4) F, S Gregory

The gross anatomy, histology and neuroanatomy of the human body. Designed primarily for majors in nursing, biomedical engineering and biomedical art. Not open to students with credit in Biology 208A or Biology 202 except by consent of instructor. (Lecture 3 hours, laboratory 3 hours.)
209. Applied Physiology (4) F,S Faculty

Prerequisites: Biology 202 or 208, Chemistry 200 or equivalent. Biology 208 may be taken concurrently. Principles of human physiology. Designed primarily for majors in nursing and related disciplines. Not open to students with credit in Biology 208B. (Lecture 3 hours, laboratory 3 hours.)
212. General Botany (5) F,S Faculty

Principles of plant biology. Structure, metabolism and reproduction of higher plants; morphology and life history of major plant groups.

## 216. General Zoology (5) F, S Faculty

Prerequisite: Chemistry 111A. Principles of animal biology. Metabolism, physiology, genetics, embryology, evolution and ecology of animals. (Lecture 3 hours, laboratory 6 hours.)

## 260. Biostatistics (3) F,S Faculty

Prerequisites: Mathematics 112, Biology 212 or 216 . Use of probability and statistics in the description and analysis of biological data. (Lecture 2 hours, laboratory 3 hours.)

## Upper Division

300. California Natural History (3) F, S Wellhouse

Common plants, animals, rocks and minerals; emphasis on local species and environments. Not open to biological science majors. (Lecture 2 hours, laboratory 3 hours.)
301. Science in the Elementary School (3) F,S Faculty

Prerequisites: Six units of natural science. Survey of the broad fields of science Covers basic topics in elementary school science. Not open to science majors or minors. (Lecture 2 hours, demonstration 2 hours.)
302. Elementary School Science Workshop (2) SS Faculty

Program in carrying out science activities in grades one through eight. Not open for credit to biological science majors or minors. (Workshop 4 hours.)
305. Workshop in Environmental Education (3) SS Ritz

Interdisciplinary workshop/seminar course intended for teachers of all grade levels or subject specialties, K-12. Current environmental issues, field excursions, involvement with innovative curricular materials and development of teaching/earning units for class use. (Seminar 2 hours, workshop 2 hours.)
307. Physiology for Therapists (4) F,S Anand

Prerequisites: Physical Therapy 300, Biology 200, Chemistry 300, Physics 104 Mechanisms of action and interaction of the various body systems, including the implications related to clinical and therapeutic treatment procedures. (Lecture 3 hours, laboratory 3 hours.) Not open for credit to majors in biological science.
*313. Invertebrate Zoology (4) F,S Ho
Prerequisite: Biology 216 or Geology 140. Basic taxonomy, morphology, ecology, and distribution of the invertebrates. Protozoa through Arthropoda, excluding Insecta, but including Protochordates; emphasis on local marine forms. (Lecture 2 hours, laboratory and field 6 hours.)
314. Biology of the Protozoa (4) F,S Jones 111A. A comparative study of Prerequisites. protozoan species. Emphasis in the laboratory on optical, cytochemical, nutritional and other experim ental techniques. (Lecture 2 hours, laboratory 6 hours.)

## *315. General Animal Parasitology (4) S Dailey

Prerequisite: Biology 216. The comparative morphology, systematics, and life histery of protozoan, helminth, and other invertebrate parasites, excepting higher arthropods, Study not restricted to parasites of man. Emphasis on life cycles, the host-parasite interaction, and host examination and staining. (Lecture 2 hours, laboratory 6 hours.)
*340L. Laboratory in Comparative Animal Physiology (1) F,S Faculty
Prerequisite: Biology 340 (may be taken concurrently). Laboratory course designed to acquaint students with direct observation and measurement of physiological processes in various animal groups, both invertebrate and vertebrate. (Laboratory 3 hours.)

## *342. Vertebrate Physiology (3) F,S Anand, Tjioe

Prerequisites: Biology 216; Chemistry 111A-B. Principles of the function of the systems of vertebrates including man. Not open to students with credit in Anatomy and Physiology 240. (Lecture 3 hours.)
*342L. Laboratory in Vertebrate Physiology (1) F,S Faculty
Prerequisite: Biology 342 (may be taken concurrently). Laboratory course with applications to the principles included in Biology 342.
345. Pathophysiology (2) F,S Anand, Gregory

Prerequisites: Biology 208, 209; Chemistry 300; Microbiology 210. Pathogenesis and pathophysiology of human nervous, musculoskeletal, endocrine cardiovascular, respiratory, excretory, digestive and reproductive systems with emphasis on clinical correlations and the physiological basis of common disorders. Not open for credit to biological science majors. (Lecture 2 hours.)
*350. General Ecology (3) F,S Clover, Miller
Prerequisites: Biology 212, 216; Mathematics 112. Chemistry and physics recommended. Relationships of plants and animals to their physical and biologica environment; structure and function of populations, communities and ecosystems (Lecture 3 hours, and two required Saturday field trips.)
*351. Animal Behavior (4) S Nelson
Prerequisite: Biology 216. Introduction to vertebrate and invertebrate ethology innate and learned behavior, social and reproductive behavior, sensory adaptation, orientation, migration and communication. Emphasis on ecological and evolutionary aspects. (Lecture 3 hours, laboratory and field 3 hours.)
*353. Marine Biology (3) F,S Galt
Prerequisites: Biology 212,313 . Biology 260 recommended. Study of pelagic and benthic marine ecosystems, including topics of food resources, mariculture and pollution. Weekend field trips may be required. Not open to students with credit in Biology 416. (Lecture 2 hours, laboratory and field 3hours.)
*360. Microtechniques (3) F Kluss, Wood
Prerequisites: Five units of biological science, consent of instructor. Principles and methods employed in preparation of plant and animal tissue for microscopic study. (Lecture 1 hour, laboratory 6 hours.)

## 364. Biomedical Illustration-Plants (2) F,S Cox, Gregory

Prerequisites: Degree in biology or art in progress, consent of instructor Completion of, or concurrent enrollment in, Art 374A-B. (Activity 4 hours.)
365. Biomedical Illustration-Animals (2) $S$ Gregory
Prerequisites: Degree in biology or art in progress, consent of instructor Prerequisites: Degree in biology or art in progress, consent of
completion of, or concurrent enrollment in, Art 374A-B. (Activity 4 hours.)

## 370. General Genetics F,S Faculty

Prerequisites: Biology 2, or 216, Mathematics 112 and either Mathematics 115 S or Biology 260. Detailed study of classical transmission genetics and an introduction to the principles of human and microbial genetics, radiation biology and the current observations and concepts of the nature, organization and action of the genetic material. (Lecture 3 hours, laboratory 3 hours.)

Economic and social role of plants and plant products in our civilization, from a plants. perspective. Emphasis on the origins, methods of processing and uses of hours.)

## 328L. Plants and Man Laboratory (1) F Bake

Prerequisite: Concurrent enrollment in Biology 328. Field trips and practical laboratory experience in processing plant products. (Laboratory or field trips 3 hours.)
*332. Comparative Anatomy (4) F,S Callison
Prerequisite: Biology 216. History of vertebrate structures; application of anatomy to phylogeny, taxonomy and functional morphology. (Lecture 2 hours, laboratory 6 hours.)
*333. Vertebrate Embryology (4) F, S Baird, Jenkins, Stephens
Prerequisite: Biology 216. Steps in development of an organism to hatching or birth; starfish, amphioxus and frog development; emphasis on chick and human development. (Lecture 2 hours, laboratory 6 hours.)

## *335. Histology (3) S Kluss

Prerequisite: Biology 216. Microscopic anatomy of animals; nature and characteristics of tissues, organs and organ systems; emphasis on human histology. (Lecture 2 hours, laboratory 3 hours.)
*336. Human Prosection (2) F,S Gregory
Prerequisite: Consent of instructor. Detailed regional dissection of the human body with emphasis on dissection technique. May be repeated once for credit. (Laboratory 6 hours.)

## *340. Comparative Animal Physiology (3) F,S Beekman

Prerequisites: Biology 216; Chemistry 111A-B. Comparison of the fundamental physiological processes of the major animal phyla. (Lecture 3 hours.)

## 400. Biology of Human Development (3) F,S Kluss

Prerequisite. Biology 107 or 207. Biological and physiological processes associated with human growth and development from conception to adulthood. Not open for credit to majors in biological science. (Lecture 3 hours.)

## 401. Biology of Human Aging (3) F Faculty

Prerequisite: Biology 107 or 200 or 207 or 209 or 216 . Biological processes associated with aging in humans. Emphasis on both cellular and organ aging (Lecture 3 hours.)
*412. Evolutionary Biology (3) S Kroman
Prerequisite: Biology 370 or an equivalent course in genetics. Introduction to the theory of evolution including the origin of life, an examination of the mechanisms involved in its continued adaptation and a description of the results of that adaptation. (Lecture 3 hours.)
417. Marine Benthic Invertebrates (3) S Reish

Prerequisite: Biology 313. Identification of benthic invertebrates, emphasizing intertidal forms of Southern California. Includes cooperative student field project. (Lecture 1 hour, laboratory and field 6 hours.)
*418. Systematic Entomology (3) S Sleeper
Prerequisite: Biology 316. Classification of insects, taxonomic categories and procedure; bibliographical methods; nomenclature; museum practices. (Lecture 2 hours, laboratory and field 3 hours.)
*419. Ichthyology (3) F,S Faculty
Prerequisites: Biology 216 and eight units of upper division biology. Taxonomy, morphology, physiology and ecology of fishes. Emphasis on local marine forms Not open to students with credit in Biology 320. (Lecture 2 hours, laboratory 3 hours.)
*420. Immature Insects (3) F Sleeper
Prerequisite: Biology 316. Morphology and taxonomy of immature insects of all major orders; emphasis on identification of larvae of economically important orders; Coleoptera, Lepidoptera, Diptera and Hymenoptera. (Lecture 2 hours, laboratory 3 hours.)
*421. Herpetology (3) S Loomis
Prerequisites: Biology 216 and eight units of upper division biology. Taxonomy natural history, ecology and distribution of amphibians and reptiles; emphasis on local forms. Not open to students with credit in Biology 321. (Lecture 2 hours, laboratory 3 hours.)
*422. Economic Entomology (3) F Yokoyama
Prerequisite: Biology 316 or equivalent. Integrated pest management of arthropods affecting plants and animals; recognition, life history and habits; the manipulation of insect and mite populations by chemical, mechanical, legislative and environmental methods. (Lecture 2 hours, laboratory and field 3 hours.)
*423. Mammalogy (3) F,S Huckaby
Prerequisites: Biology 216 and eight units of upper division biology; 324 or 332 recommended. Evolutionary survey of the living mammals of the world. Emphasis on the adaptation of the major taxa to their environments. Not open to students with credit in Biology 323. (Lecture 2 hours, laboratory 3 hours.)

## *424. Ornithology (3) F,S Collins, Warter

Prerequisites: Biology 216 and eight units of upper division biology. Morphology physiology, taxonomy, ecology and behavior of birds; emphasis on laboratory and field study of adaptations of local forms. Not open to students with credit in Biology 322. (Lecture 2 hours, laboratory and field 3 hours.)
*425. Algae (3) F,S Leister
Prerequisite: Biology 212. Systematics, morphology, ecology and phylogeny of marine and freshwater algae, emphasis on forms of Southern California. Not open to students with credit in Biology 325. (Lecture 2 hours, laboratory and field 3 hours.)

## *426. Fungi (3) S Bourret

Prerequisite: Biology 212. Morphology, physiology and biology of fungi. Not open to students with credit in Biology 326. (Lecture 2 hours, laboratory 3 hours.)
*427. Taxonomy of Vascular Plants (4) S Baker
Prerequisite: Biology 212. Principles and methods of vascular plant systematics including history, nomenclature and phylogeny; emphasis in the laboratory is on the identification and classification of native and introduced plants of Southern California. Not open to students with credit in Biology 327. (Lecture 2 hours laboratory and field 6 hours.)
*429. Plant Pathology (3) F Bourret
Prerequisites: Biology 212, Chemistry 111A-B. Principles and practices of plant pathology. Structure, development and classification of pathogens. Emphasis on diagnosis, treatment and control of diseases affecting cultivated plants. Not open to students with credit in Biology 329. (Lecture 3 hours.)
*430. Cell Biology (2) F,S Wood
Prerequisites: Upper division standing in a biological science, Chemistry 327 Structure and function of eukaryote cells. (Lecture 2 hours.)

## *431. Techniques of Electron Microscopy (3) S Wood

Prerequisites: A course in cell biology, consent of instructor. Experience in specimen preparation, instrumentation and photographic methods for both transmission and scanning electron microscopy. Individual research project required. Enrollment limited. (Lecture 1 hour, laboratory 6 hours.)

## *433. Developmental Biology (3) F Jenkins

Prerequisite: Biology 370. Analysis of classical and current experiments dealing with fertilization, differentiation, embryonic induction, cell movement and morphogenesis. (Lecture 1 hour, laboratory 6 hours.)

## *434. Insect Morphology (3) F Menees

Prerequisite: Biology 316. Comparative anatomy of insects, structure of mouth parts, the mechanisms of feeding, locomotion, flight, and reproduction. Emphasis on the relationships of musculature to external forms. (Lecture 2 hours, laboratory 3 hours.)
*437. Vertebrate Paleontology (3) S Callison
Prerequisite: Biology 332 or Geology 140 or 341 . Evolution of vertebrates as related to earth history, paleoecology and functional morphology. Laboratory: techniques of phylogenesis, biostratigraphy and analysis of paleofaunas. (Lecture 2 hours, laboratory and field 3 hours.)

## 438. Plant Anatomy (3) F,S Alfier

Prerequisite: Biology 212. Structure and growth of meristems; development and tructure of cells, tissues and tissue systems; comparative anatomy of leaf, stem and root. Not open to students with credit in Biology 330. (Lecture 2 hours, laboratory 3 hours.)

## *439. Plant Morphology (4) F,S Cox

Prerequisite: Biology 212. Comparative structure, life history and phylogenetic relationships of plants. Not open to students with credit in Biology 331. (Lecture 2 hours, laboratory 6 hours.)
*440. General and Cellular Physiology (4) F,S Schatzlein
Prerequisites: Five units of biological sciences, Chemistry 327, Physics 105, 106 Physiological processes of plant and animal cells and tissues basic to understanding the function of the whole organism. (Lecture 3 hours, laboratory 3 hours.)
*441. Cardiovascular Physiology (3) S Tjioe
Prerequisite: Biology 340 or 342 , Physics 105,106 . Functions of the cardiac, vascular and blood system s in the vertebrate animal. (Lecture 3 hours.)

## 442. Neuromuscular Physiology (3) S Biedebach

Prerequisite: Biology 340 or 342 or 440 or consent of instructor. Emphasis upon the mechanisms by which nerve and muscle cells function. Representative examples will be selected from vertebrate and invertebrate phyla. (Lecture 2 hours, aboratory 3 hours.)

## *443. Endocrinology (3) F,S Schatzlein

Prerequisites: Biology 216, Chemistry 327. Role of the endocrines in vertebrate and invertebrate adjustment to changes in the internal and external environment. Not open to students with credit in Biology 343. (Lecture 3 hours.)
*446. Respiratory and Renal Physiology (3) F Faculty
Prerequisites: Biology 340 or 342, Physics 105, 106. Functions and interactions of the respiratory and renal systems. Both vertebrate and invertebrate systems will be studied. (Lecture 3 hours.)

## *447. Plant Physiology (3) F,S Lincoln

Prerequisites: Biology 212 and Chemistry 327. Photosynthesis and other anabolic syntheses, respiration, mineral nutrition, water relationships, growth and development of plants. (Lecture 3 hours.)
*447L. Plant Physiology Laboratory (1) F,S Lincoln
Prerequisite: Biology 447 (may be taken concurrently). Laboratory experiments in plant physiology.
*448. Insect Physiology (3) S Menees
Prerequisite: Biology 434. Muscle contraction, digestion, nutrition and metabolism, circulation, excretion, reproduction, molting, endocrine glands and hormones, and enzyme systems of insects. (Lecture 2 hours, laboratory 3 hours.)
*450. Plant Ecology (3) S Mansfield-Jones
Prerequisite: Biology 427 (may be taken concurrently). Relationship of plants to their environment and principles of plant distribution. (Lecture 2 hours, laboratory and field 3 hours.)
*451. Field Studies in Biology (1-6) S, alternate years Faculty
Prerequisites: Six units of upper division biological science and consent of instructor. Field studies in behavioral or environmental or taxonomic biology at the organism, population or community level. Emphasis on application of field techniques to the solution of biological problems. May be repeated for credit up to a maximum of six units toward the major. Topics to be announced in the Schedule of Classes. (Lecture, laboratory and field arranged.)
*452. Marine Plankton (4) F Galt
Prerequisites: Biology 313,353 . Biology 260 recommended. Ecology, adaptations, life histories and identification of planktonic organisms in the sea. (Lecture 2 hours, laboratory and field 6 hours.)
*453. Insect Ecology (3) S Sleeper
Prerequisite: Biology 316 or 317 . Field and experimental studies of abundance dispersal, distribution and behavior. (Lecture 2 hours, laboratory and field 3 hours.)
*455. Physiological Animal Ecology (3) F Hill
Prerequisites: Biology 340, 340L, 350. Study of variations in time and space of Prical and chemical and factors and of adaptans of animals to hese variations. Physiological adaptations are stressed, but anatomical and behavioral adaptations are also discussed. (Lecture 2 hours, laboratory 3 hours.)

## 456. Ecology of Animal Populations (3) F,S Rainey

Prerequisite: Biology 350. Detailed analysis of animal populations including reproduction, growth, mortality and survivorship, intraspecific and interspecific relationships, regulation of numbers and evolutionary responses. Stresses pertinent aspects of wildlife biology. (Lecture 3 hours.)
*458. Ecology of Marine Plankton (3) F Galt
Prerequisites: Biology 353, Chemistry 327; Mathematics 112 and $115 S$ are recommended. Physiological ecology of marine phytoplankton and zooplankton as a basis for study of structure, dynamics and modeling of plankton communities. Topics include productivity, trophic relations and energy flow, distribution and abundance of marine plankton. (Lecture 3 hours.)
460. Biological Control of Insects (3) F Sleeper

Prerequisite: Biology 316. Natural and artificial control of pest species of insects and other arthropods through use of predators, parasites, fungi, virus, and bacterial diseases. (Lecture 2 hours, laboratory and field 3 hours.)
*461. Toxicology of Pesticides (3) S Yokoyama
Prerequisite: Chemistry 327 or equivalent. Invertebrate and mammalian toxicity frerials used for protection of food, fiber, and hum an health; mode of action, hemical properties, bio-assay, phytotoxicity, insecticide residues, hazards, legal aspects, effect on aquatic and terrestrial wildlife, and environment. (Lecture 2 hours, laboratory 3 hours.)

## 464. Environmental Toxicology (3) F Yokoyama

Prerequisites: Biology 212 or 216, Chemistry 327. Metabolism, mode of action and detoxication mechanisms of toxic substances in organisms. Effects of pollutants, waste products, chemicals of commerce, warfare agents, drugs and arcotics on human health and the environment, their regulation and control (Lecture 3 hours.)
*470. Mammalian Physiological Genetics (3) F Hrubant
Prerequisites: Biology 370, Chemistry 327. Genetic basis of metabolic disorders in mammals with special emphasis on man. (Lecture 3 hours.)

## *472. Quantitative Genetics (3) S Leamy

Prerequisite: Biology 370. Analysis and application of genetic principles underlying genetic characters exhibiting continuous variation. Response to inbreeding and selection and the role of quantitative characters in evolutionary theory. (Lecture 3 hours.)
*473. Molecular Genetics (3) S Ting
Prerequisites: Biology 370, Chemistry 327. Nature, replication, regulation and mode of action of the genetic material. (Lecture 3 hours.)
*475. Cytogenetics (2) F Hrubant
Prerequisite: Biology 370. Development of the mitotic apparatus and chromosomal movement during cell reproduction. Structure and replication of the chromosome, synapsis and chiasma formation and aberrant chromosomal behavior. (Lecture 2 hours.)
524. Principles of Animal Taxonomy (2) $F$ Loomis

Rules and problems in animal systematics; taxonomy as a tool in zoological studies. (Lecture 2 hours.)
525. Advanced Parasitology (2) F Dailey

Prerequisite: Biology 315 or consent of instructor. The metabolism Poogeography, ecology and host-parasite relationships of animal parasites (Lecture 2 hours.)
526. Advanced Insect Systematics (2) S, alternate years Sleeper

Prerequisite: Biology 418. Theory and philosophy of systematic entomology with emphasis on the phylogeny, zoogeography and nomenclature of the major orders (Lecture 1 hour, laboratory 3 hours.)
530. Advanced Cytology (2) S Kluss, Wood

Prerequisite: Biology 430 . Selected topics of current interest in cellular biology (Lecture 2 hours.)
531. Adaptive Vertebrate Morphology (3) S Warter

Prerequisites: Biology 324 or 332 and consent of instructor. Morphological variations from the generalized vertebrate body plans, their adaptive significance and their modes of operation. Emphasis on locomotor, feeding and sensory mechanisms. (Lecture 2 hours, laboratory 3 hours.)

## 532. Invertebrate Embryology (4) S Jenkins

Prerequisites: Biology 313 and consent of instructor. Embryology of invertebrates except insects. Detailed account of the development of representatives of the invertebrate phyla Porifera through Tunicata. (Lecture 2
hours, laboratory 6 hours.)

## 540. Radio-Chemical Techniques in Biology (4) S Biedebach, Lieu

Prerequisites: Chemistry 327, five units of biological science. Chemistry 251 and 251 L strongly recommended. Experience in use and handling of radioactive tracers in the biological sciences. (Lecture 2 hours, laboratory 6 hours.)
541. Experimental Endocrinology (3) S Beekman, Schatzlein

Prerequisite: Biology 443. Laboratory techniques basic to the understanding of endocrinology. Quantitative experiments concerning the endocrine control of metabolism, reproduction, differentiation and adaptation in organismic and molecular biology. (Lecture 1 hour, laboratory 6 hours.)

## 42. Plant Growth and Development (3) $F$ Lincoin

Prerequisites: Biology 447, and one of the following: Biology 438, 439; consent of Pructor Laboratory techniques basic to an understanding of plant growth and development. Quantitative experiments concerning chemical and environmental control of differentiation both at the cellular and organismic level. (Lecture 1 hour, laboratory 6 hours.)

## 545. Mammalian Metabolism (3) S Anand

Prerequisite: Biology 440 or Chemistry 441A or Home Economics 331 or consent instructor. Study of chemical and energy transformations in mammals with emphasis on intermediary metabolism and regulatory mechanisms of physiological processes. Not open to students with credit in Biology 445. (Lecture 3 hours.)
550. Ecology of Marine Communities (3) S , alternate years Miller

Prerequisites: Biology 350 or 456 and 260. Discussions of and field studies on ecological principles related to marine communities. (Lecture 2 hours, field 3 hours.)

## 551. Plant Geography (2) F Mansfield-Jones

Prerequisites: Biology 427 and one of the following: Biology 350, 450 or 456 Distribution of ancient and modern floras with reference to geological history and evolution. (Lecture 2 hours.)

## 552. Zoogeography (2) S Warter

Discussions of ecological and historical patterns of distribution of vertebrates on a world-wide basis. Current theories regarding origins of these patterns are examined. (Lecture 2 hours.)

## 561. History of Biology (2) $S$ Faculty

Survey of development of the biological sciences, from ancient to modern times (Lecture 2 hours.)

## 52. Biometry (4) F,S Kroman

Biostatistical analyses including data reduction and transformations; Gaussian. binomial and Poisson and probability models; significance tests and nonparametric methods; goodness of fit; correlation and linear regression; and the analysis of variance and co-variance and experimental design. Laboratory includes solving problems by calculators and computers. (Lecture 3 hours, laboratory 3 hours.)
563. History of Entomology (2) F Sleeper

Prerequisite: Biology 316. History of entomology with special reference to entomology of the western hemisphere. Effects of philosophy, religion, political and economic factors on growth of entomology. (Lecture 2 hours.)

## 590. Special Topics in Biology (1-3) F,S Faculty

Prerequisite: Consent of instructor. Topics from selected areas of biology. Course content will vary from section to section. May be repeated for credit with the consent of instructor Maximum credit for Biology 590 and/or 590Llimited to six units. Topics will be announced in the Schedule of Classes. (Lecture 1-3hours).

590L. Laboratory in Special Topics in Biology (1-3) F,S Faculty
Prerequisite: Consent of instructor. Topics from selected areas of biology. Course content will vary from section to section. May be repeated for credit with the consent of instructor. Maximum credit for Biology 590 and/or 590L limited to six units. Topics will be announced in the Schedule of Classes. (Laboratory 3-9hours.)
660. Seminar (1) F,S Faculty

Prerequisite: Consent of instructor. Topics in biology to be presented by graduate students or by faculty members. May be repeated for credit.
696. Research Methods (2) F,S Loomis

Definition, methods of solution, and research methods of problems in the biological sciences; emphasis on utilization of library. (Lecture 2 hours.)

## 697. Directed Research (1-3) F,S Faculty

Prerequisite: Consent of instructor. Research on a specific subject in biology. Topic for study to be approved and directed by a faculty member in biological sciences. (May be repeated for credit to a maximum of 3 units.)

## 698. Thesis (1-6) F,S Faculty

Prerequisite: Consent of departmental graduate adviser. Planning, preparation and completion of a thesis in the biological sciences.

Black Studies

Department Chair: Dr. Skyne Uku.
Associate Professors: Hartsfield, Robinson, Uku
Assistant Professors: Rahh, White,
Undergraduate Adviser: Dr. Skyne Uku.
The black studies curriculum is designed to provide general knowledge of black culture and history and to offer training for professional work in the black community. It offers programs to ser ( 1 administration, urban planning, occupations, including social case work, scs, criminogy foreign service, government, recreation, journalism, business, criminology, law, ors in fiel communications, speech and linguistics, psychology; (3) majors in other fields, such as history, literature, creative writing, anthropology, who wish to include additional dimensions to their course of study.

Information regarding black studies can be obtained at the Black Studies Department Office.

## Major in Black Studies for the Bachelor of Arts Degree (code 2-8425

A minimum of 45 units is required for the major in black studies.
Lower Division: Black Studies 110 and three selected from the following core courses: Black Studies 120, 155, 160, 210.
Upper Division: Black Studies 330, 332,335, 340 plus 15 units selected from Black Studies 304, 325, 331, 337, 343, 346, 370, 400, 404, 410.
Social Science Requirement: Six upper division units from other departments or programs of the School of Social and Behavioral Sciences. These units are in addition to those used to fulfill the requirements of any General Education category.

## Certificate in Black Studies

Students majoring in other departments of the University but interested in Black Studies may at the same time pursue a program leading to a Certificate in Black Studies. Courses used to meet the certificate requirement may, where applicable also be used simultaneously to meet General Education requirements or the major and minor requirements of cooperating departments

Requirements for the Certificate in Black Studies

1. A bachelor's degree with a major in a traditional discipline. (Certificate can be completed prior to or simultaneously with completion of the B.A requirement.)
2. A minimum of 24 units of which at least 12 must be in upper division courses, with two or more courses selected from each of the following: Group A: Black Studies 110, 210, 325, 330, 332, 335, 370, 420; Group B: Black Studies 160, 340, 343, 346, 363, 450; Group C: Black Studies 120, 200, 201, 202, 304, 337, 400, 410.

## Minor in Black Studies (code 0-8425)

A minimum of 24 units of which at least 12 units must be in upper division courses, with two or more courses selected from each of the following: Group A: Black Studies 110, 210, 325, 330, 332, 335, 370, 420; Group B: Black Studies 160, 340, 343, 346, 363, 450; Group C: Black Studies 120, 200, 201, 202, 304, 337, 400, 410.

## Lower Division

110. Introduction to Black Studies (3) F,S White

Survey of major problems and issues with which Afro-American studies deals Overview of sources and materials for Afro-American studies, and preparation of formal papers and reports.
120. Afro-American History to 1865 (3) S Robinson, Uku

Survey course examining the major themes and issues in Africa before the slave trade as well as the role of blacks from colonial period to the end of the Civil War.
121. Afro-American History 1865-Present (3) F,S Robinson, Uku

History of social, economic and political change in America after the reconstruction period. Black migration, education, cultural development and business enterprises will be examined.
140. Introduction to African and Afro-American Literature (3) F,S Faculty

Study of representative works, in English and translation, of black writers from Africa and non-African countries.
155. Afro-American Music (3) F Faculty

Non-technical survey of Afro-American music.
160. Black Arts (3) F,S Faculty

Survey course in the development of the student's understanding of Pan-African music, drama and visual arts as they grow out of the black experience.

## 167. Exploitation of the Black Athlete (3) $F$ Rahh

Study of the socio-dynamics of amateur, professional and collegiate sports activity in the United States as it relates to the Afro-American community.

## 200. Black Ancient Civilization (3) S Uku

Historical study of black peoples, tracing their earliest appearances in Africa, migrations, ancient and medieval empires and kingdoms, styles of culture and civilization, and their situations at the time of contact with the Western world.

## 201. Black World: History of Slavery (3) F,S Uku

Historical examination of the trans-Atlantic slave trade and its impact on Africa and the Western Hemisphere. Includes inquiry into the nature of slavery in Africa, the Caribbean, North and South America, with major emphasis on slavery and its meaning in the United States.
210. Afro-American Community (3) F,S Robinson, White

Social structure and change in the community life of Afro-Americans. Institutional and stratification patterns, demographic changes, social movements and community organization programs.
270. Fundamentals of Swahili (4) F,S Faculty

For those students who would like to learn the language either for its own sake or to use it as an asset for a major/minor in Black Studies or Linguistics. Emphasis will be placed on mastering the grammar and developing reading and writing skills. By the end of the course each student should be able to converse using proper pronunciation.

## Upper Division

304. World Colonialism (3) F Uku

Analytical study of colonialism, examined as a crucial phenomenon in regards to the development of world civilizations.

## 325. Psychology of the Afro-American (3) F, S Rahh, White

Examination of the psychological conflicts of Afro-Americans in relation to their social situations.
330. Politics of the Black Community (3) F,S Hartsfield, Robinson

Study of the devices, styles, problems and dynamics of political activity in the black community.

## 331. Black Juvenile (3) F,S Faculty

Prerequisite: Black Studies 210 or consent of instructor. Critical approach to the problem of juvenile justice in the black community.
332. Black Man and the Law (3) F,S Hartsfield

Designed to provide the student with a basic understanding of the interaction between the American legal system and the black community.
335. Economic Problems of the Black Community (3) F,S Hartsfield, Robinson
Current economic problems of Afro-Americans. Economic problems of the black ghetto, including the effects of racism and developmental alternatives.
337. Culture of Pan-African Peoples (3) F,S Uku

Analysis of Pan-African cultural geography and a study of human behavior in PanAfrican societies. Not open to students with credit in Black Studies 110E.
340. Development of Afro-American Literature (3) F Faculty

Representative selections from black writers of the United States, from colonial times to the present.

## 343. Literature of Africa and the Caribbean (3) F,S Faculty

Individual and group pursuit of special problems and projects in African and Caribbean literature.

## 346. Black Theatre (3) F,S Faculty

Survey of historical and contemporary black theatre, including study of the art orms, and an exploration of major events and an examination of the works of modern playwrights.

## 353. Black Religion (3) $F$ Faculty

Prerequisite: Black Studies 337 or consent of instructor. General nature of eligion as perceived in Africa and how this perception has manifested itself among blacks in the New World.
363. History of African Art
(3) F,S Uku

Survey of African art from antiquity to the present, with principal focus on subSaharan art.

## 370. The Black Man and the Mass Media (3) F Hartsfield

Examination of the uses and abuses of mass media in the projection of the black community and its people, past and present. Primary emphasis will be on the press the radio, the television and the film industry

## 400. Afro-American Social Thought (3) S Robinson, White

Survey of Afro-American intellectual history with emphasis on social theories and polemic writing.
404. Contempory Issues of the Third World Nations (3) F,S Robinson, Uku Study of the shifting power and international status of the black world. Among other topics, the course will focus on diplomacy, natural resources, revolution or political change and European involvement

## 410. The Black Family (3) F White

Prerequisite: Consent of instructor. Historical study of the psychologica development of the black family

## 420. Needs of the Ghetto Child (3) F, S Blaylock

Study of the physical, intellectual, social and psychological needs of ghetto children. Theories, concepts and principles relating to the growth, development and learning of the black child will be explored. Not open to students with credit in Black Studies 420A or B

## 21. Black Child Care and the Community (3) F Blaylock

Prerequisite: Black Studies 210 or 331 or 410 or 420. Application of information theories, concepts and principles relative to ghetto children. Field experiences in a variety of ghetto settings provide opportunities for students to try out promising approaches to the development and learning of ghetto children. (Discussion 2 hours, field work 3 hours,

## 432. Advanced Studies in Afro-American Music (3) F, S Faculty

Prerequisite: Black Studies 155. Study of the development, evolution and essence of Afro-American music in the 20th century from perspectives of Afro American social and cultural history
450. Black Writers Workshop (3) S Robinson

Creative writing from the black perspective. A course dealing with the unique task of the black writer, in approaching the black experience and transmitting this experience into fiction or poetry

## 51. Black Legal Remedies (3) S Hartsfield

Prerequisite: Black Studies 332 or 452 or consent of instructor. Course is designed to assist the student searching out, discovering and using existing valid and functional laws and regulations which have particular bearing on the legal status of minorities. It will instruct the student in methods and procedures for seeking assistance from agencies, individuals and institutions by which legal redress may be obtained and individual rights secured. This will be accomplished by an extensive study and analysis of poverty law and related agencies and institutions.

## 52. Ecology of Black Crime (3) F Faculty

Prerequisite: Black Studies 210, 331 or 332 . Study of the interrelationships between the black criminal, the minority community and the criminal justice system.

## 460. African Thought (3) F Uku

Prerequisite: Background knowledge of Africa from history, political science anthropology or sociology is highly recommended. Analysis of philosophical and religious systems of Africa from antiquity to present
90. Special Topics in Black Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Topics of current interest in black studies selected for intensive development. May be repeated for a maximum of six units. Topics will be announced in the Schedule of Classes.
499. Directed Studies (1-3) F, S Faculty

Prerequisite: Consent of instructor. Permits individual students to pursue topics of special research interest. May be repeated to a maximum of six units.

## School of Business Administration

Dean: Dr. Seymour Marshak.
Associate Dean: Mr. John T. Martinelli.
The mission of the School of Business Administration is to prepare students, through the intellectual and learning process, for entry into a career in the business community that will enable the graduate to pursue the quality of a career that he or she chooses and to assure that the pursuit of a career carries with it a contribution to maintaining and enhancing the quality and viability of our society.

Five objectives are established for the faculty and the School of Business Administration:

First, to present and teach the various courses in such a manner as will develop the analytical capabilities of the student.

Second, to develop in the student through the various courses a high proficiency in the skills that are represented in the disciplines across the School so that each graduate represents a product of quality in the discipline.

Third, to inculcate in each student an understanding of, and respect for, the best ethics and moral fiber that prevails across and throughout the business community.

Fourth, to foster and encourage peer learning for the student and establish the foundation for peer and other learning throughout the student's career.

Fifth, to provide each graduate with an enhanced awareness of the necessity of responding to change in order to promote the satisfaction of personal and social needs

## Accountancy Department

Department Chair: Mr. Truman O. Hickerson Jr
Emeritus: Pickel.
Professors: Andrews, Cornwell, Gunter, Hickerson, Lewis, McKinnon, Martinelli,
Moustafa, Stone, Suttle, Tillman, Williamson.
Associate Professors: Berkshire, Chang, Cho, Ewing-Chow, Hopewell, LaPage.
Lecturers: Allen, Chybowski, Fagan, Sternbach.
Undergraduate Adviser: Department Chair.

## Finance Department

Department Chair: Mr. Richard J. Teweles.
Professors: Beecher, Belt, Dilbeck, Farrell, George, Harlow, Kearney, McCulloch, Teweles.
Associate Professors: Levine, Morris, Pastrana, Runyon, Sachdeva, Valachi.
Lecturers: Burford, Rhoads, Stock.
Undergraduate Advisers: Dr. Raymond R. Farrell, Mr. Gene P. Morris.

## Management and Human Resources Management

Emeritus: Glenn H. Stewart, Dale M. Yoder.
Professors: Gregory, Hamburger, Heise, Kirkpatrick, Laufer, Metzger, Quinn, Simons, Smith, Stanton, Stone, Teel.
Associate Professors: Bates, Campo-Flores, DeVoe, Ford, Lewis, Lyle, Monat, Morse, Rudkin, Sartore, Traynor, Whitcomb.
Assistant Professor: Inderlied.
Lecturers: Kiang, Kraft, Madison, Mitchell, O'Donnell, Richard, Ryder, Salvate, Stambaugh, Vaid-Raizada.

## Undergraduate Advisers

Management Option: Dr. Gerald L. Ford.
Human Resources Management Option: Dr. Carl E. Gregory.

## Marketing Department

186 Department Chair: Dr. Robert T. Holmes.
Professors: Ash, Butcher, Cotta, Frye, Hall, Harding, Holmes, Marshak, Palubinskas, Spiller, Stuteville, Wolff.
Associate Professor: Klein.
Lecturers: Callero, Volotta.
Undergraduate Adviser: Department Chair.

## Quantitative Systems Department

Department Chair: Dr. Lincoln L. Chao.
Emeriti: Braxton C. Henderson, Harry G. Romig.
Professors: Burras, Chao, Doud, Keester, King, Nelson, Stinson, Wollmer.
Associate Professors: Gillis, Gilon, Payne, Pickard.
Lecturer: Lin.
Academic Advising Coordinators:
Administrative Systems Option: Mr. Ronald King.
Business Computer Methods: Dr. Paul Gilon.
Quantitative Methods Option: Dr. Carl Payne.

The School of Business Administration offers both undergraduate and graduate courses of study, both accredited by the American Assembly of Collegiate Schools of Business, leading to the following degrees:

Bachelor of Science in Business Administration with options in
Accounting
Administrative Systems

## Business Computer Methods

Finance
Human Resources Management
Management
Marketing
Operations Management
Quantitative Methods
Master of Business Administration
Master of Science (with options)

## Business Minors

The School of Business Administration offers the following minors that are available to all CSULB students.
Administrative Systems
Human Resources Management
Marketing
Quantitative Methods

## Certificate Program

In addition to the degrees, certification programs are offered in International Business, Transportation andQuantitative Methods.

## Requirements

Specific degree requirements are described in the appropriate sections in this Bulletin.

## Business Courses for General Education

Students in other schools of the University may elect courses offered by the various departments in the School of Business Administration. Many courses are suitable for meeting the general education requirement of eight units of optional electives.

## Accreditation

The School of Business Administration undergraduate and graduate programs are nationally accredited by the American Assembly of Collegiate Schools of Business.

## Advisement

The School of Business Administration maintains an advisement/counseling office. Students are urged to consult this office well in advance of registration day for advice on degree requirements or on other matters regarding the School's offerings.

## Bureau of Business Services and Research

The bureau's mission is to foster research and to serve as a bridge to the business community.

## Center for International Business

The center administers the Certificate Program in International Business. In so doing the center attempts to advance the skills and interests of those students with a view towards a career in international business.

## Center for Transportation Studies

The center administers the Certificate Program in Transportation and in so doing the center attempts to advance the skills and interests of those students interested in a career in transportation.

## Student Activities

The Associated Business Students Organization Council (ABSOC) represents recognized departmental organizations such as the American Marketing Association, Beta Alpha Psi/Accounting Society, Finance Association, Personnel Association, Betrial Relations Association, Society for the Advancement of Management, and Industrial Relations Association, Society for the Advancement of Management, as well as other social/fraternal business organizations including the National Association of Black Accountants, the Law Society, Beta Gamma Sigma, A.I.E.S.E.C., Pi Sigma Epsilon and Alpha Kappa Psi. The council is composed of elected officers from the listed organizations and serves as a facilitator in coordinating the numerous student activities. Membership information about departmental organizations can be obtained from departmental offices.

## Project Achievement

This is an organized activity developed to attract contributions to be used for financially assisting those with high grade point averages who need financial aid to enter or continue in the School of Business Administration's undergraduate or graduate program. The program consists of fellowships, scholarships and tutorial assistance. Application should be made to the Office of the Director, Graduate and Undergraduate Studies.

## Real Estate Industry Awards Program

The Real Estate Industry of Long Beach, through the Board of Realtors, provides financial support for a number of $\$ 1000$ annual fellowships and $\$ 500$ annual scholarships. In addition, several "name" scholarships are available through individual donors. Although the program gives preference to applicants from Lon Beach City College, others may apply. Those interested should consult the Office of the Director, Graduate and Undergraduate Studies.

## Sea-Land Service Corporation Scholarships

Available from Sea-Land Corporation are four two-year scholarships of $\$ 2,000$ each per year payable at the rate of $\$ 200$ monthly. Two scholarships are awarded in the spring and two in the fall semester.

The scholarships are awarded to benefit students who are studying transportation and international business in their junior and senior year. For details inquiry should be made to the Office of the Director, Graduate and Undergraduate Studies.

## Board of Advisors

The school periodically meets with its board of advisors, composed of executives of the region in order to maintain communication between the school and the business community

## Operation Outreach

Jointly with the Extended Education Office, the school from time to time offers courses in management or other business subjects in a seminar or conference format.

## Executive Encounter Series

Through the student organizations, several times each semester prominent executives are invited to the campus for direct discussions with students.

## Computer Technology

The school maintains a broad program whereby all departments provide course work involving computer technology. In addition, the school maintains its own computer terminal facility.

## Beta Gamma Sigma

Established at CSULB in 1972, Beta Gamma Sigma is the most prestigious honor
society for students of business. Students are elected to membership on the basis of outstanding scholarly performance with the evaluations being made during the fall semester of each academic year. To be eligible for membership students must, minimally, rank in the upper three percent of their junior class or the upper seven percent of their senior class or rank in the upper 13 percent of those receiving master's degrees. Inquiries should be directed to the faculty adviser, Dr. Gary D. Klein.

## Bachelor of Science Degree <br> with a major in Business Administration

## Degree Requirements

A minimum of 124 units, to include

1. A minimum of 50 units in courses outside the School of Business Administration, to include
a. Meeting the University's General Education requirements. Business majors may not count courses offered by the School of Business Administration toward General Education requirements.
b. Economics 200 and 201. One of these two courses may be counted toward General Education requirements in category II.
c. Mathematics 114 (prerequisite Mathematics 100 or 102 or two years of high school algebra) may be counted toward General Education requirements in category IV.
d. Mathematics 115B (prerequisite Mathematics 100 or equivalent, or two years of high school algebra).
e. Philosophy 160 or 170 (Accounting majors must take 160). May be counted toward General Education requirements in category III.
2. A minimum of 51 units in business administration and related courses to include:
a. Accounting 201, lower division (prerequisite to all accounting courses and to Finance 362).
b. Finance 222, Iower division (prerequisite to Finance 324)
c. Quantitative Systems 240, lower division
d. Upper division core of 27 units

## Course

Accounting 310
(Accounting majors must take Accounting 320)
Economics 333
Finance 324
Finance 362
Human Resources Management 360 or
361 (Management and Operations
Management majors must take 361)
Management 300
Management 425

## Marketing 300

Quantitative Systems 310

## Prerequisites

Accounting 201
Accounting 201
Economics 200 and 201
Mathematics 115B
Finance 222
Economics 200 or 201 or 300 Accounting 201

None
Quantitative Systems 310
Recommended preparation: Senior

## standing

Recommended preparation: Economics 200 or 201 or 300
Mathematics 114
For Accounting majors, English/Speech Communication 303
For Finance majors, English/Speech Communication 303 or Quantitative Systems 402.
One of the options listed (15 units).
Business Administration Electives (balance of units required for graduation): The

School offers certain more specialized courses in the various areas which may be taken as electives. Courses taught by the department offering the student's option, however, may be selected as electives only with the prior approval of the department chairperson. The student is encouraged to select electives for expansion of knowledge, whether for intellectual interests or employment preparation purposes. Students should consult the School of Business Administration Office of Undergraduate Advisement for guidance in selection of electives.

## Option in General Accounting (code 3-2705)

## Option in Professional Accounting (code 3-2706)

The accounting curriculum offers study in the nature, theory and general problems of accounting with the objective of providing responsible leadership in a dynamic business world and community. On a broad base of general education and business administration courses, the accounting preparation seeks to develop in he student an understanding of an organization's management information ystem. The general accounting program provides a background both for the號 in accounting as a career in business enterprises, and for the person planning on entering the field of public accounting. The professional accounting program affords the student interested in specializing in eithe business enterprises, not-for-profit organizations, or in the field of public accounting, a more flexible program to meet the student's specific career objectives.

General Accounting Option Requirements:
(124 units minimum) Philosophy 160, English/Speech Communication 303, Accounting 300A-B, 400, 470.

## Professional Accounting Option Requirements:

(128 units minimum) Philosophy 160, English/Speech Communication 303, Accounting 300A-B and
With a concentration in public accounting: Accounting 400, 470, and six units elected from the 400-level accounting courses.
With a concentration in business or not-for-profit accounting: Accounting 410, 475 and six units elected from the 400 -level accounting courses.

## Option in Administrative Systems (code 3-2720)

This option, administered within the Quantitative Systems Department, prepares its majors for positions of responsiblity as administrative managers and related careers in business, industry, education and government. It is designed to give an understanding of the problems of administrative management and a knowledge of the principles, procedures and abilities needed to solve these problems. The program includes a substantial number of topics included in the Certified Administrative Manager examination of the Administrative Management Society.

## Administrative Systems Option Requirements:

Quantitative Systems 302, 331, 402, 432, 433.

## Minor in Administrative Systems (code 0-2720)

The minor in administrative systems requires a minimum of 18 units and must include: Accounting 201, Quantitative Systems 240,302,331,432 and one of the following: Quantitative Systems 402 or 433.

## Option in Business Computer Methods (code 3-2725)

This option, administered within the Quantitative Systems Department, leads toward computer-oriented careers in business, industry, education and government. It provides a foundation for problem-solving and decision making
using the computer technology in such positions as data processing managers, systems analysts, administrators and data base managers.

Business Computer Methods Option Requirements:
Quantitative Systems 413, 432, 442, 445, 466.

## Option in Finance (code 3-2710)

The finance curriculum offers training in the administration, techniques and egulations applicable to business finance, investments, insurance and risk management and real estate. The study of the institutions of American finance, their customs, practices and legal framework gives a basis from which the student builds an understanding of the demand function of finance. The supply function is tudied through offerings in investments including analysis of securities and commodities coupled with analysis of their price trends and turning points. Special concentration in the study of acquisition, administration and distribution of funds for the individual business firm as well as the supplying of funds by individuals and institutions for investment in private enterprise. The finance major may direct the concentration toward financial management, investments, insurance or real estate.

## Finance Option Requirements:

1. Finance 382 and either 302 or 342
2. Three courses in one of the following areas of concentration: Financial Management: Finance 360, 464, 484, 490.
Investment: Finance 464, 484, 486, 488.
Real Estate: Finance 444, 446, 448, 449, 450, 452.
3. English/Speech Communication 303 or Quantitative Systems 402.

## Option in Human Resources Management (code 3-2740)

The human resources management option offers education in theories, policies and practices relevant to the manager's crucial task of influencing others to work toward organizational goals. The curriculum is designed both for students who wish to specialize in the personnel or industrial relations field and for those who wish to obtain a background which will permit them to function more effectively in ny management position. The courses offered provide an in-depth analysis of interpersonal relations (such as those between a manager and staff members) and intergroup relations (such as those between management and labor). Major objectives of this option are (1) to acquaint students with the types of management problems encountered in modern society, (2) to encourage them to develop an analytical approach to defining and solving those problems, and (3) to acquaint them with theories and practices on which effective courses of action can be based Human resources management majors may direct their concentration toward either personnel management or labor relations.

## Human Resources Management Option Requirements

1. Human Resources Management 360 or 361 (whichever is not taken in the core), 362.
2. Three courses in one of the following areas of concentration

Personnel Management: Human Resources Management 446, 463, 464 465.

Labor Relations: Human Resources Management 440 and two courses chosen from Human Resources Management 445, 464, 465

## Minor in Human Resources Management (code 0-2740)

Upper Division: A minimum of 18 units which must include Human Resources Management 361 and a minimum of 15 units selected from Human Resources Management $360,362,440,445,446,463,464,465,466$, or 495 as approved by the Human Resources Management Department. In some instances a student may be permitted to substitute a maximum of six units of appropriate and related
courses from other academic areas for courses in the above list. Students must have written approval from the undergraduate adviser.

## Option in Management (code 3-2745)

The purpose of the management curriculum is to prepare students for careers where they will be required to create and maintain an internal environment which, when interfaced with the external environment, will yield a continuously successful enterprise. Human values and ethics important to managers as well as philosophical bases for the practice of management are stressed. With this educational background and appropriate experience, the graduate should be able to eventually fulfill a meaningful role in top management consistent with the above objective.

## Management Option Requirements

Management 326 and 426 and three of the following: 401, 405, 421, 422.

## Option in Operations Management (code 3-2758)

The objective of the operations management curriculum is to stimulate student competence in the conceptual, systemic and analytical tools and managerial philosophy prerequisite for entry and advanced positions in both goods-producing and service-oriented industries. Emphasis is placed on the systems approach which stresses the concepts, techniques and policies essential for the economical and effective design, operation and control of the material, manpower, facilities capital and informational inputs of organizations.

## Operations Management Option Requirements:

Management 302, 401, 402 and two of the following: 406, 407, 426.

## Option in Marketing (code 3-2750)

Marketing is a socially-oriented discipline and considers that the basic purpose of a business enterprise, just as that of any social institution, is the determination of the needs of the society, or a relevant segment of that society, followed by the providing of means to satisfy those needs through the use of products and services. This consumer-oriented approach results in increases in both profits and societal welfare.

The field is important vocationally both because the number of workers employed in distribution activities is large and also because the number, variety and importance of the problems and managerial responsibilities offer many opportunities for intellectually challenging positions.

Marketing Option Requirements:

## Marketing 300, 408.

Four additional courses from the following, at least one course from each group, but not more than one course may be from Group 1.

Group 1. Marketing Foundations: Marketing 310, 320, 330, 340, 380.
Group 2. Marketing Systems and Strategies: Marketing 401, 430, 432, 442, 465, 480.
Group 3. Behavior and Research: Marketing 403, 404, 470, 473, 490, 492.
Note: A 495 course or approved 497 course may be applied to either Group 2 or Group 3.

## Minorin Marketing (code 0-2750)

Upper Division: A minimum of 18 units which must include Marketing 300 and a minimum of 15 units selected from Marketing 310, 320, 330, 340, 380, 401, 403, $408,430,432,440,441,442,465,470,473,480,490,492$ and 495 as approved by the Marketing Department. In some instances a student may be permitted to substitute a maximum of six units of appropriate and related courses from other academic areas for courses in the above list.

## Option in Quantitative Methods (code 3-2772)

This option, administered within the Quantitative Systems Department, leads toward quantitatively-oriented careers in business, industrial, educational and government organizations. It provides a foundation for problem solving and decision making using the methods of operations research and statistics in such positions as operations research analysts, statistical analysts, and business researchers.

Emphasis is placed upon concepts and methods in the business environment, rather than upon mathematical development of theory.

## Quantitative Methods Option Requirements:

Quantitative Systems 410, 411, 422, 460, 463.

## Minor in Quantitative Methods (code 0-2772)

Upper Division: A minimum of 18 units which must include Quantitative Systems $410,411,460,463,442$ and 445 or other quantitative systems courses as approved by the Quantitative Systems Department. In some instances a student may be permitted to substitute a maximum of six units of appropriate and related courses from other academic areas for courses in the abovelist.

## Undergraduate Certificate Program in International Business

The past decades have seen a phenomenal growth of multinational companies in most major countries of the globe and the consequential internationalization of the business world. As a result, multinational firms, governments and international organizations have shown an increased demand for individuals with an international perspective.

The Undergraduate Certificate in International Business is a program of study in conjunction with the undergraduate degree in business and provides additional training in the international business area not normally covered in the traditional business courses

The objective of the program is to enhance the perception and adaptation of the student's personal and functional skills to the international business environment.

Courses used to comply with the certificate requirements may also be counted, where applicable, toward the General Education requirements, the School of Business Administration requirements and departmental requirements for bachelor's degree.

## Requirements for the Undergraduate Certificate in International Business

1. A bachelor's degree with a major in business administration which may be taken concurrently with the certificate requirements.
2. A minimum of 15 units of international business course work at this University, including the following: Marketing 380, Accounting 465, Finance 490, Management 405 and Marketing 480.
3. A grade point achievement of a minimum of 2.0 on a scale of 4.0 will be required in every course taken for the certificate program.
4. No pass/fail option will be allowed for the certificate program

Any deviation from this program requires the written permission of the program director.

It is strongly recommended that students pursuing this certificate acquire language and cultural competence in the area of their main interest

For additional information and applications students should contact the Director of the Certificate Program in International Business, School of Business Administration.

## Undergraduate Certificate Program in Quantitative Methods

The Quantitative Systems Department offers a Certificate in Quantitative Methods, designed to give students an understanding of the principles, procedures and abilities needed to solve the problems faced by business statisticians, 7-79140
operations researchers and computer programmers.
The quantitative methods program prepares students for making scientific analyses and decisions relative to problems that may confront them in the industrial, business or governmental environments. It provides a foundation for problem solving and decision making using the methods of statistics, operations research and computer technology for operations research analysis, administrators, data processing managers and systems analysts.

Requirements for the Undergraduate Certificate in Quantitative Methods

1. A bachelor's degree which may be taken concurrently with the certificate requirements.
2. A total of 18 units of Quantitative Methods to include Quantitative Systems $410,411,460,463,442,445$.
3. A grade point achievement of a minimum of 2.0 on a scale of 4.0 will be required in every course taken for the certificate program.
4. No pass/fail option is allowed for the certificate program.

Any deviation from this program requires the written approval of the department.
For further information contact the Director of the Certificate Program in Quantitative Methods, Quantitative Systems Department.

## Undergraduate Certificate Program in Transportation

Long Beach, containing one of the world's most modern and successful maritime commerce and international transportation centers, is situated in a unique and rapidly growing international hub of transportation. Surrounding its port facilities are five commercial airports, three major transcontinental railroads, and several hundred trucking companies. Further, the Los Angeles metropolitan area presents what is generally considered to be the most challenging set of urban mass transit problems in the United States. Stimulated by a national re-assessment of energy realities and a focus on United States balance of payments problems, a major concentration of the attention and resources of industry and government is to be expected on the transportation facilities, systems and problems that characterize the community served by California State University, Long Beach.

The Certificate in Transportation is a program of preparation for professional competence in transportation requiring 15 units of upper division work. It is offered in conjunction with an undergraduate major in Business Administration. Courses used to meet the requirements for a Certificate in Transportation may also be utilized to satisfy School of Business Administration or Departmental requirements.
The requirements of the program are:

1. A bachelor's degree with a major in Business Administration which may be taken concurrently with the certificate requirements.
2. A minimum of 15 units of transportation and transportation-related course work at California State University, Long Beach to be selected from the following: Marketing 340, 380, 442, 465; Economics 331; Management 407 and Civil Engineering 426.
The following courses may be selected with the approval of the Program Director: Marketing 495 and 497.
3. A grade point achievement of a minimum of 2.0 on a scale of 4.0 will be required for every course taken for the certificate program.
4. No pass/fail option is allowed for the certificate program.

Any deviation from this program is possible only with the express written permission of the Program Director.

For additional information and applications, students should contact the Director of the Certificate in Transportation program, School of Business Administration.

## Policy Regarding Concurrent Enrollment

## in Community College or Another College

Undergraduate students who wish to take course work in a community college
or another college to meet CSULB School of Business Administration requirements while enrolled as an undergraduate in business administration at CSULB must petition the Undergraduate Curriculum Committee in advance for permission to enroll in specific courses. University policy must also be observed. (See "Registration Procedures" and "Transfer of Undergraduate Credit" in this Bulletin.)

## Graduate Information

The School of Business Administration (SBA) offers graduate study leading to either the Master of Business Administration (MBA) or a Master of Science degree in Business Administration with a field of specialization. All degrees offered by the School of Business Administration are fully accredited by the American Assembly of Collegiate Schools of Business.

School of Business Administration graduate programs are designed for students with a recognized baccalaureate degree from an accredited college or university. This degree may be in business or a field other than business.
Both the MBA and MS degrees are designed to serve the community by providing graduate business education to persons who can derive the most benefit from it. For this reason the faculty of the School of Business Administration has established rigorous standards of admission and performance for the program.

The School of Business Administration graduate program has seven educational objectives. First, to develop a proficiency in the identification, analysis and solution of major problems in the management of an enterprise.

Second, to develop an understanding of the functional areas within the enterprise, supported by a high proficiency in the skills offered by the disciplines contained in the School of Business Administration.
Third, to instill a respect for the highest ethics prevailing in the business community and an appreciation of personal and organizational responsibilities for natural, social, political and economic environments.

Fourth, to inspire a recognition of managerial accountability.
Fifth, to foster peer learning and establish a foundation for lifetime development.
Sixth, to enhance an awareness of the need for receptivity to change in order to achieve personal, organizational, and social objectives.
Seventh, to provide the capability of communicating effectively, with credibility and sensitivity.

With these seven objectives in mind, the School of Business Administration offers students flexibility in designing their graduate programs to meet their own educational and occupational goals. Thus, within the objective of achieving the breadth that is appropriate for the MBA, the program of study should be relevant both to students' background of training and to their goals. The MS degree permits intensive specialization in a field of study within Business Administration.

The School of Business Administration is committed to producing graduates of the highest caliber. It is recognized that learning, at least to some extent, is a function of time so that for some the process will take longer than for others. In addition, students come to their graduate programs from varying backgrounds. These two factors often require the individualizing of a program to remove deficiencies in a student's capacity to deal with managerial problems. Courses may be added to a student's program by action of the Office of Graduate Studies.

## Scholastic Standards

Learning also is a function of motivation. Since there is a high demand for spaces, a limit to the numbr of times students may attempt to demonstrate their pility to meet minimum standards is imposed

A student who fails to maintain a cumulative grade point average of 3.0 or higher in all work completed as a graduate student at this University or transferred in to meet degree requirements will be placed on academic probation.

A student on probation, who at the end of the second probationary semester fails to obtain a cumulative grade point average of 3.0 or higher on all units attempted in post baccalaureate work at CSULB, shall be disqualified and removed from the
graduate program. The student should note that the cumulative GPA is calculated by Admissions and Records and includes all upper division and graduate courses taken.

A grade of $C$ or better is required in any course taken to satisfy prerequisites or as part of a student's graduate program. A grade of B or better is required in GBA 699. If either of these requirements is not met, a student must take the course a second time or withdraw from the program. A second failure to achieve the required grade will result in involuntary separation from the program. This requirement operates independently of the requirement for a cumulative GPA of 3.0 or better.

## Admissions

All degree curricula presuppose mastery of a common body of knowledge. This requirement may be satisfied by completing a set of prerequisite courses after admission to the School of Business Administration and prior to enrolling in the main body of courses (those numbered 502 and higher) included in the student's arder students entering the program with a bachelor's degree in graduate prest or all of these prequisite business administration may

## requirements prior to admission.

In addition to being admitted by the California State University, Long Beach, Office of Admissions and Records, an applicant also must be admitted by the School of Business Administration. This requires that the Graduate Office, School of Business Administration, have in its possession the following:

1. Part B of the University application form.
2. A report of the student's score on the Graduate Management Admissions Test (GMAT), received directly from Educational Testing Service.
3. An official transcript from every post-secondary institution attended by the student. It is necessary for the student to order these transcripts sent directly to the School of Business Administration, Graduate Office, 1250 Bellflower Boulevard, Long Beach, CA 90840.
Admission to the School of Business Administration graduate programs is based on scholastic achievement as represented by official transcripts and the GMAT score. For details of how admission applications are processed, consult with the SBA Graduate Office or refer to the SBA Graduate Programs Announcement.
Courses, whether graduate or undergraduate, taken prior to official admission into the School of Business Administration Graduate Programs will apply toward the main body of courses required for the degree only in a limited manner. For details consult the SBA Graduate Office or the Graduate Programs Announcement.

Requests for application forms should be addressed to the University Office of
Rmissions and Records
Part A of the application serves as application for admission to the University as an unclassified graduate student.
Part B of the application serves as application to the School of Business Administration as a classified graduate student.
Admission to the University as an unclassified graduate student does not constitute admission for graduate work in the School of Business Administration. No SBA course labeled 500 or higher may be taken prior to admission to the School of Business Administration as a classified graduate student.
All applicants are required to take the Graduate Management Admission Test Aior to admission. Students may obtain applications for the GMAT from the SBA Graduate Office or from the University Testing Office. Students must request the service administering the test to forward the test results to the School of Business Administration, Graduate Office. Official transcripts of all college work must be filed with the Graduate Office before an applicant will be considered for acceptance. These transcripts must be official copies and are in addition to those required by the Office of Admissions and Records for admission to the University.

## Master of Business Administration Degree (code 7-2701)

The MBA program provides a basic understanding of the complex, competitive business environment; preparation for professions of responsibility; and the background and impetus for advancement in professional careers. The MBA is
based on a solid foundation of "tool" skills, a foundation on which the student is invited to build toward the wide spectrum of competencies required for effective management. The MBA is not a degree aimed at specialization in a particular field.

## Prerequisites

A bachelor's degree with a minimum of 24 approved units of business administration and economics to include the following (or their equivalents): Accounting 500 or ; Finance 500 and 501; Human Resources Management 500, Management 500, Marketing 500, Quantitative Systems 500, Economics 500 Students lacking the designated prerequisite courses are required to satisfy these deficiencies after admission to the School of Business Administration Graduate Program; or by taking the undergraduate equivalents (usually two designated undergraduate courses per one graduate course) prior to admission; or by having completed equivalent courses in their undergraduate degree program

## Requirements for the Master of Business Administration

The MBA requires 33 units of study, approved by the Director of Graduate Studies, beyond (1) the baccalaureate degree and (2) satisfaction of the prerequisites. Therefore, no course taken to complete either may be included in the 33 unit program Of these 33 units 9 are required (GBA 500, GBA 690, GBA 699) No more than 6 units of the remaining 24 may be taken with any one department (in the department of Accountancy, department of Finance, the professional disciplines of Management and Human Resources Management, the department of Marketing, and the department of Quantitative Systems). Students are urged to spread their studies among designated departments and disciplines so as to achieve the breadth expected of the MBA. GBA 699, the MBA terminal evaluation, is predicated on candidates' having attained this breadth.
Completion of all requirements ( 33 unit minimum) in the graduate program as established and approved by the Director, Graduate Studies, School of Business Administration. The MBA graduate program must include:


Must be taken by all graduate business students. The student is expected to take this course in the first semester following completion of the prerequisites or in the semester of completion.
The student is expected to enroll in the semester following the completion of GBA 500.
(Prerequisite GBA 500)

A minimum of 18 units of 502-600 series business courses taken at this University from the following areas: Accounting, Administrative Systems Human Resources Management, Management, Marketing Quantitative Methods
Additional graduate or approved upper division 400 series or 502-600 series courses to meet the 33 unit minimum. The 400 series courses must be taken at graduate student standing, but may be taken by unclassified graduate students pending admission to the program. Units taken under this requirement are counted toward the maximum allowable with any one department.
GBA 699 Integrated Analysis (A comprehensive terminal course Prerequisites: which serves as the required
candidacy.
3. In last semester
or
Within 6 units of completion of the 33 unit program.) students may also write a thesis (GBA 698, Thesis), for a minimum of four units in addition to taking the required GBA 699 course Students interested in doing this should contact the Director, Graduate Studies.

## Master of Science Degree in B usiness Administration

The MS program is suited to the person who has decided on a specialized career within business administration. The degree, like the MBA, requires a solid foundation of "tool" skills. The MS student, however, is invited to develop a high evel of expertise in one of the options offered. The MS, unlike the MBA, is aimed at specialization in a particular business field

## Prerequisites

(See individual option)

## Requirements for the Master of Science

The MS requires a minimum of 33 units of study, approved by the Director, beyond satisfaction of the prerequisites. More than 33 units may result if a student elects the thesis option. Of these units, 6 are required (GBA 500 and GBA 690 or a directed studies course supervised by the department of option). The remaining units, including the choice of terminal evaluation, are to be selected under the guidance of an adviser designated by the department of option.

## Degree Requirements

Completion of all requirements ( 33 unit minimum) in the graduate program as established and approved by the Director, Graduate Studies, School of Business Administration. The MS, regardless of option, must include:
\(\left.\left.$$
\begin{array}{ll}\text { GBA } 500 & \text { Research Methodology } \\
& \begin{array}{l}\text { Must be taken by all graduate } \\
\text { business students. The student is } \\
\text { expected to take this course in the } \\
\text { first semester following }\end{array}
$$ <br>

completion of the prerequisites or\end{array}\right\} $$
\begin{array}{ll}\text { in the semester of completion. }\end{array}
$$\right\}\)| The student is expected to enroll |
| :--- | :--- |
| in the semester following the |

697 Directed Studies in department of option may be taken in lieu of GBA 690;
A minimum of 15 units in the $502-600$ series courses completed at this University in courses approved by the department of option.
Additional graduate or approved upper division 400 series or 502-600 series business courses to meet the 33 unit minimum. The 400 series courses must be taken at graduate student standing, but may be taken by the unclassified graduate students pending admission to the program.
One of the following terminal evaluations:
$\dagger$ (a) GBA Integrated Analysis Students must file application for 699 (Prerequisites:

1. Classified MS status.
2. Advanced to candidacy.
3. In last semester or
units entry into GBA 699 no later than the 4th week of instruction in the semester preceding the one in which GBA 699 wil be taken.
Application forms are available in the Graduate Office, School of
4. Within 6 units of completion of the 33 unit program)
(b) GBA Thesis (for a minimum of 698 fourunits);
(c) A departmental comprehensive examination

## Advancement to Candidacy

Since they are bound by the requirements of the University Bulletin and Programs Announcement in effect at the time of advancement, students are urged to file their advancement to candidacy (approval of the 33 -unit course of study) as soon as they have completed the 24 prerequisite units or equivalents described in the preceding section. At the very latest, the final program must be approved during the semester or summer session prior to graduation and prior to enroliment in the terminal evaluation (GBA 699, comprehensive examination, or thesis).
Before advancement to candidacy can be approved, the following requirements must have been met:

1. Acceptance by the School of Business Administration, Office of Graduate Studies.
2. Establishment of the degree objective with the Records Office
3. Completion of all prerequisite courses.
4. A 3.0 (B) average in all work completed as a graduate student at this University or transferred to meet degree requirements.
5. Satisfaction of the general University requirements for advancement to candidacy.

Units

All courses must be completed within seven years from the date of completion of the first course in the 33 unit program.

## Advancement to Candidacy

Since they are bound by the requirements of the University Bulletin and Programs Announcement in effect at the time of advancement, students are urged o file their advancement to candidacy (approval of the 33-unit course of study) as soon as they have completed the 24 prerequisite units or equivalents described in he preceding section. At the very latest, the final program must be approved during ind prior to enrollment in the therminal evaluation (GBA 699, comprehensive examination, or thesis).
Before advancem ent to candidacy can be approved, the following requirements must have been met.

1. Acceptance by the School of Business Administration, Office of Graduate Studies.
2. Establishment of the degree objective with the Records Office.
3. Completion of all prerequisite courses.
4. A 3.0 (B) average in all work completed as a graduate student at this University or transferred to meet degree requirements.
5. Satisfaction of the general University requirements for advancement to candidacy.

## Option in Accounting (code 6-2705)

The graduate curriculum in accounting offers advanced training in the complexities of the socio-economic aspects of our society that have placed increasing demands on the accounting profession. Based upon a strong foundation of accounting prerequisites, the program is designed to develop the expanded knowledge which is the basis for the specialist in public accounting or in an accounting management career in business or government or in further advanced study.

## Prerequisites

1. Completion of 24 prerequisite units as described under MBA section.
2. Satisfaction of essential departmental prerequisites in accounting ( 15 unit minimum). The following courses, or their equivalents, are the required prerequisites
(a) Accounting 300 A \& B, 320, 400, 450, 470; or
(b) Accounting 320, 400, 450, 470, and 501.

Students should contact the Department Chairperson concerning departmental prerequisites.
(Note: Accounting 201 or equivalent is prerequisite for 300A or 501).

## Option in Administrative Systems (code 6-2720)

The graduate curriculum in administrative systems is designed primarily for students preparing for careers in the area of administrative management.

## Prerequisites

1. Completion of 24 prerequisite units as described under MBA section, and
2. Satisfaction of essential departmental prerequisites in administrative systems ( 15 unit minimum). The following courses, or their equivalents, are the required prerequisites: QS 302, 331, 402, 432 and 433.
Students should contact the Department Chairperson concerning departmental prerequisites.

## Option in Finance (code 6-2710)

The graduate curriculum in finance is designed to prepare individuals for staff positions in business, train teachers and research personnel, and provide
additional background for others whose interests or professions draw upon any of the subject areas included within the department.

The Finance Department offers instruction in four fields: financial management, insurance, investments and real estate.

## Prequisites

1. Completion of 24 prerequisite units as described under MBA section
2. Satisfaction of essential departmental prerequisites in finance (15 unit minimum) as determined and approved by the Department Chairperson. These will normally be approximately equivalent to an undergraduate option in finance.
Students should contact the Department Chairperson concerning departmental prerequisites.

## Option in Human Resources Management (code 6-2740)

The graduate curriculum in human resources management has dual objectives. It prepares students for entry positions as technical specialists in personnel and industrial relations departments. It also serves as a step toward continuing graduate study in the field, offering breadth and depth. Courses direct attention to both individual and group behavior in working organizations and to the environmental impacts of public policy. They emphasize the translation, interpretation application and testing of relevant theory including contributions from the behavioral sciences.

## Prerequisites

1. Completion of 24 prerequisite units as described under MBA section.
. Satisfaction ef escential departmental prerequisites in human resources 2. management ( 15 unit minimum) as established and approved by the Department Chairperson. These will normally be approximately equivalent to an undergraduate option in human resources management
Students should contact the Department Chairperson concerning departmental prerequisites.

## Option in Management (code 6-2745)

The graduate curriculum in management is designed to provide the student with an in-depth graduate education in management theory, doctrine and activities. Students completing this degree will have the basis for successful experience in business so as to progress into middle and upper management positions, and eventually to reach top management positions. Management graduates are equipped not only to advance in private enterprise but also are qualified for management positions in nonbusiness organizations, such as government, universities, and various other institutions.

## Prerequisites

1. Completion of 24 prerequisite units as described under MBA section
2. Satisfaction of essential departmental prerequisites in management (15 unit minimum) as established and approved by the Department Chairperson These will normally be approximately equivalent to an undergraduate option in management.
Students should contact the Department Chairperson concerning departmental prerequisites.

## Option in Marketing (code 6-2750

The master of science degree is intended to prepare men and women for (1) the responsibility of management in marketing - the responsibility for devising, improving, and directing the policies, strategies, and techniques of marketing; and/or (2) a doctoral degree in marketing - a necessary requirement for those interested in either university teaching or sophisticated marketing research
careers. The program is flexible, offering a balance between theoretical analysis and examination of established practices. It provides an opportunity for the studen o explore the areas of marketing both in breadth and depth. The program is designed to permit students who have developed prior interest in marketing or in areas within marketing to delve further into their areas of interest. Several areas of marketing offered in depth include: advertising and promotion, consumer behavior international marketing, logistics, and marketing research and analysis.

## Prerequisites

1. Completion of 24 prerequisite units as described under MBA section.

2 Satisfaction of essential departmental prerequisites in marketing (15 unit minimum) as established and approved by the Department Chairperson These will normally be approximately equivalent to an undergraduate option in marketing.
Students should contact the Department Chairperson concerning departmental prerequisites.

## Option in Operations Management (code 6-2758)

The graduate curriculum in operations management is intended to prepare the student for employment as a staff specialist in Operations Management of a wide variety of business enterprises and governmental institutions. Synthesis and analysis of the design, improvement, installation, and operations of integrated systems of people, materials, machines, and equipment are studies resulting in the specification, prediction and evaluation of the results to be obtained from such systems. The program is designed to present an organized body of knowledge dealing with the design of both continuous and intermittent processes for converting input factors into desired products and services produced.

## Prerequisites

1. Completion of 24 prerequisite units as described under MBA section
2. Satisfaction of essential departmental prerequisites ( 15 units minimum) including Management 500 or its equivalent in management as established and approved by the Department Chairperson. These will normally be approximately equivalent to an undergraduate option in operations management.
Students should contact the Department Chairperson concerning departmental prerequisites

## Option in Quantitative Methods (code 6-2772)

The graduate curriculum in quantitative methods is designed to develop quantitative capabilities in the management sciences. Emphasis is placed on the interaction of economists, behavioral scientists, social scientists, mathematicians, engineers, computer specialists, etc., with the development of viable solutions to problems arising in the business environment. This option offers instruction in three fields: Operations Research, Statistics; and Computer Methods.

## Prerequisites

1. Completion of 24 prerequisite units as described under MBA section.
2. Satisfaction of essential undergraduate prerequisites in quantitative systems courses (15 units minimum) from the following: QS 410, 411, 442, 460 and courses as required by the department from QS 413, 445, 463.
Students should contact the Department Chairperson concerning departmental prerequisites

## Graduate Certificate Program in International Business

International business is a rapidly growing field requiring trained specialists in this area for service both domestically and abroad. Worldwide international trade is reaching ever higher levels, with the U.S. accounting for a large portion of the total.

Also, U.S. corporations manage thousand of direct investments abroad with sales exceeding several times U.S. exports. Thus, few businessmen can continue to afford to be ignorant of the impact of international business operations

The Graduate Certificate in International Business is designed for those who are already in the business graduate program, or for those who are qualified to take courses at the graduate business level and wish to receive additional training not normally covered in the traditional business courses. The objective of this program is to enhance the perception and adaptation of the student's personal and functional skills to the international business environment.

## Requirements for the Graduate Certificate in International Business

1. An undergraduate degree in business administration, or equivalen preparation for the graduate study of business administration
. Approval of the Director, International Business Center and Director Graduate Studies, School of Business Administration
ational business coursework at California State University, Long Beach.
(a) Required courses: Management 543, Human Resources Management 552, Marketing 666, Finance 691.
(b) Two elective courses from the following four: Marketing 667A, 667B 667C, 667D
2. Other requirements include
(a) An average grade point achievement of a minimum of 3.0 on a scale of 4.0 in all the courses taken for the certificate program. However, courses with a grade lower than a C will not be accepted
(b) No more than six units of these 18 units may be used to falfill the basic 30-unit M.B.A. or M.S. in business requirements at this University.
Any deviation from this program requires the written permission of the program rector. It is strongly recommended that students pursuing this certificate have anguage and cultural competence in the area of their main interest. For additional information and application, students should contact Dr. Feliksas Palubinskas, Director, International Business Center, School of Business Administration.

## Accountancy

## Lower Division

201. Elementary Financial Accounting (3) F,S Faculty

Introduction to financial acounting theory and practice. For business majors. Not open to students with credit in Accounting 200A and 200B.
202. Accounting Concepts (3) F, S Faculty

Financial and managerial accounting concepts with emphasis on utilization of accounting data in management decisions. For non-business majors only.

## Upper Division

300A-B. Intermediate Accounting (3,3) F,S Faculty
Prerequisites: Accounting 200A and 200B or 201; 300B: Accounting 300A with a grade of "C" or better. Intermediate accounting theory including recording, valuation, and statement presentation of assets, liabilities, capital, earnings; funds statements; financial analysis.

## 310. Managerial Accounting (3) F,S Faculty

Prerequisites: Accounting 200A and B or 201. Use and interpretation of financial statements; evaluation of internal control and systems; accounting for and analysis of costs; budget concepts and preparation; interpretation of accounting data for management decision making. Not open to accounting majors for course or unit credit.
320. Cost Accounting (3) F,S Faculty

Prerequisites: Accounting 200A and 200B or 201. Theory of cost accounting and cost control, including job order and process costs, standard costs, budgeting, direct costing, and management utilization of cost information.
*400. Advanced Accounting (3) F,S Berkshire, Suttle, Williamson
Prerequisites: Accounting 300A and 300B or 501 with grades of "C" or better Specialized problems in partnership and corporate accounting, agencies and branches, consolidated financial statements, organizations in financial distress estate and trust accounting.
410. Advanced Managerial Accounting (3) F,S Hopewell

Prerequisite: Accounting 320 with a grade of "C" or better. Managerial accounting concepts as they apply to planning, decision making, performance evaluation and control
*430. Quantitative Methods in Accounting and Auditing (3) F,S Stone Prerequisites: Quantitative Systems 310 and any 300 level accounting course with a grade of "C" or better. Application and theory of quantitative methods in accounting and auditing. Will include some problems relating to the uniform Certified Public Accountant examination.
*434. Decision Analysis in Accounting and Finance (3) F,S Stone
Prerequisites: Quantitative Systems 310 and either Accounting 200A and B or 201, or 500 with a grade of "C" or better. Application of decision theory and information theory to financial, investment and other problems of the firm and the individual.
*450. Federal and State Tax Law and Accounting I (3) F,S Gunter, Sternbach Prerequisite: One of the following: Accounting 300A, 310, 320, 501 with a grade of " C " or better. Federal and state income tax structure as related to individuals, including laws, rulings and regulations.
*451. Federal and State Tax Law and Accounting II (3) F,S Faculty
Prerequisite: Accounting 450 with a grade of "C" or better. Federal and state income tax structure as related to partnerships, corporations, estates and trusts and gift taxes, including laws, rulings and regulations.
460. Accounting for Nonprofit Organizations (3) F,S Berkshire

Prerequisites: Accounting 300B and 320 with grades of "C" or better. Financial and managerial accounting concepts as they apply to organizations whose objectives are primarily to provide service rather than generate profit.

## 465. International Accounting (3) F Ewing-Chow

Prerequisite: Any 300-level accounting course with grade of "C" or better
610. Seminar in Accounting Theory (3) F,S Moustafa

Prerequisite: Accounting $300 B$ or 500 with a grade of $C$ or better. Critical analysis of generally accepted accounting theories and principles. Formerly Accounting 600.
612. Seminar in Advanced Tax Law and Accounting (3) F,S Faculty

Prerequisite: Accounting 450 with a grade of $C$ or better. Tax planning and estate 550. Formerly Accounting 650.
614. Seminar in Accounting Management and Controllership (3) F,S Suttle

Prerequisites: Accounting 400 with a grade of $C$ or better and Management 425 or 500 ; or consent of instructor. Critical analysis and evaluation of controllership function and other line and staff functions involved in financial management. Formerly Accounting 660.
616. Seminar in Contemporary Accounting Problems (3) F,S Cornwell

Prerequisite: Graduate standing in business administration. Acquaint students with problems confronting the accounting profession in the areas of theory, application and certification; including future impact of solutions being effected and future direction of the profession.
697. Directed Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Individual study under the direction of the faculty.


## Lower Division

200A. Introduction to Law (1) F,S Faculty
For non-business majors only. Examination of legal remedies, the attorney/client For nows criminal trial process and elationsionsing. Three-week modular course covering 15 hours of classwork

200B. Personal Law (2) F,S Faculty
Recommended prerequisite: Finance 200A or any introductory law course. Torts Recommet rights and remedies, wills and estates, laws affecting the rights of the landlord/tenant and the purchase of property, marriage, divorce, family law and race employment and education. Six-week modular course covering 30 hours of classwork

200C. Consumer Law (2) F,S Faculty
Recommended Recortive lative enactments Consumer problems in the marketplace, sperights and remedies and the rising powe warranties and product liability, consumer rights andar course covering 30 hours of of governm
222. Legal Aspects of Business Transactions (3) F,S Faculty

Introduction to law and the legal system, elements of contracts and sales, fundamental factors governing commercial paper.

Upper Division
302. Insurance Principles (3) F,S Faculty

Principles of rearing and insurance; life and property-lity insurance needs of the individual. Types of carriers and insurance markets; organization and functions of carriers; industry regulation.
324. Legal Aspects of Business Organizations (3) F,S Faculty Prerequisite: Finance 222. Laws governing agency, partnerships corporations and property

## 32. Real Estate Principles and Practices (3) F,S Faculty

Major forces affecting real property values and the real estate industry including production of real estate resources, marketing and financing of land based on aluation processes as related to location and development; effects of business trends and government regulation; rural and urban real estate development and transfer. Role of residential, commercial and individual construction in the health of American economic system is closely examined.

## 360. Financial Analysis (3) F,S Faculty

Capital formation, rates, markets and institutions. Flow of fund analysis, intermediation, interest rate structures, risks and liquidity. Financial management of institutions.
362. Business Finance (3) F,S Faculty

Prerequisites: Economics 200 or 201 or 300; Accounting 201 or equivalent. Different forms of ownership organization emphasizing significance of corporate form. Methods, instruments, control factors in raising, administering, distributing funds of business firms; working and fixed capital requirements; internal and external fund sources; financial aspects of promotion, growth, reorganization, liquidation.
382. Investment Principles (3) F,S Belt, Harlow, Runyon

Prerequisite: Finance 362 . Development of a rational investment philosophy. Analysis of investor objectives, risks and returns; valuation principles; technical approach to price patterns, trends and turning points. Alternative investment media
432. The Consumer: A Socio-Legal Approach (3) F George, Klein

Psychology of the consumer and growth of the consumer movement. Major issues including problems relating to advertising, sales practices, pricing, warranties and product safety. A study of consumer protection legislation. An examination of legal remedies and corporate responsibility. Same course as Marketing 432.
434. Decision Analysis in Accounting and Finance (3) F,S Faculty

Prerequisites: Quantitative Systems 310 and either Accounting 200B or 201 or 500. Application and theory of scientific techniques used by accountants to provide and utilize information for making decisions. Includes some problems relating to the uniform Certified Public Accountant examination. Same course as Accounting 434.
*444. Legal Aspects of Real Estate (3) F,S Faculty
Prerequisite: Finance 342. Basic principles of the law of real estate as related to conveyances, titles, private and public restrictions on the use of land, escrows community property and financial transactions.
*446. Real Estate Appraisal (3) F,S Faculty
Prerequisites: Accounting 201, Finance 342. Development of the capacity for selection of criteria for establishing real property values and the determination of alternative uses and locations.

## 448. Real Estate Economics (3) F,S Faculty

Land use patterns and economic implications. Influence on real estate development. Understanding real estate markets in terms of supply and demand factors. Capital markets influence on real estate markets. Government involvement in real estate markets
*449. Real Estate Finance (3) F,S Faculty
Prerequisite: Finance 342. Markets, institutions, instruments and techniques involved in real estate finance. Analysis of investment opportunities in residential income, commercial, raw land and other properties from the individual's standpoint.

## 450. Real Estate Investment Analysis and Taxation (3) F,S Faculty

Prerequisites: Finance 342 and 444 with a grade of " $C$ " or better. Examines the interactions of finance, business risks and taxation of various types of rea properties to achieve superior portfolio effects.

## 52. Reai Estate Development (3) F,S Faculty

Prerequisites: Finance 342 and 444 with a grade of " $C$ " or better. Feasibility Prysis, demand analysis and cost estimating. Planning prodecures. Preparation f reports and documents for permits and approvals. Site selection and analysis Architectural and landscaping analysis. Project management. Marketing

## 464. Financial Management (3) F,S Beecher, Dilbeck, Runyon

Prerequisites: Finance 362 and Accounting 300B or 310. Application of financia functions and decisions. Flow-of-funds. Analysis in working capital management capital budgeting, capitalization and income models. Business combination analysis.
*484. Security Analysis (3) F,S Belt
Prerequisite: Finance 382. Analysis of securities by industries and individual companies. Application of quantitative techniques in evaluating financial condition, operations, growth and management. Principles of portfolio management.

## 486. Security Markets (3) F,S Beit, Teweles

Prerequisite: Finance 362. Examination of purposes and functions of over-the counter markets and organized exchanges for securities marketing. Operations o New York Stock Exchange and Chicago Board of Trade are reviewed. Fundamenta and technical aspects of securities industry required of individuals in qualifying for certificates as customers brokers, security salesmen and analysts and other registered positions of finance and investment.
*488. Commodity Markets (3) F,S Hariow, Teweles
Prerequisite: Finance 362 or Marketing 300 or consent of instructor. History and Pature of commodity futures trading. Operation of commodity futures exchanges Fundamental and technical devices used by successful commodity traders.
*490. International Finance (3) F,S McCulloch, Morris
Prerequisite: Finance 362. Various real and monetary factors in the finance of international business. International capital markets, movements of funds and special problem areas.

## *495. Selected Topics (1-3) F,S Faculty

Prerequisites: Consent of instructor and grade point of 3.0 in finance. Topics of current interest in finance selected for intensive study. May be repeated for a maximum of 6 units. Topics will be announced in the Schedule of Classes.
*497. Directed Studies (1-3) F,S Faculty
Prerequisites: Consent of instructor and department chair, on Dean's List and 3.0 GPA or higher in finance. Individual projects, study and research of advanced nature in finance.

## Graduate Division

## 531. Estate Planning (3) F Farrell

Prerequisites: Finance 222, 324. Planning and administration of the disposition property by wills, estates and trusts including use of life insurance, impact of federal and state taxes and special trust provisions and devices. Formerly Finance 528.
532. Problems in Real Estate (3) $S$ Dilbeck

Prerequisite: Finance 342. Effect of government on the market functions and structure, management of related industry firms, investment risk and return analysis and special urbanization trends. Formerly Finance 542.
533. Capital Budgeting (3) $F$ Dilbeck

Prerequisites: Finance 362, 464. Theory of capital budgeting within framework of the firm. Cost of capital determination and logics of expansion vs. growth and equity financing vs. debt financing. Formerly Finance 564.
630. Seminar in Financial Forecasting (3) $S$ Runyon

Prerequisites: Finance 362, 464 or consent of instructor. Research projects in general forecasting and financial forecasting in industry, individual company product and commodity areas. Formerly Finance 666

## 631. Seminar in Business Finance (3) F Faculty

Prerequisites: Finance 360, 362. Specific analysis of capital formation with selected problems concerning supply and demand of investment funds. Problems imposed on equity capital markets by public taxation, business debt financing, and practices of investing institutions. Presentation and interpretation of student reports on selected topics. Formerly Finance 662.

## 633. Seminar in Investments (3) $S$ Belt, Runyon

Prerequisites: Finance 464, 382 or 484 . Selected problems in security analysis portfolio planning, balance and adjustment as related to (1) individual circumstances of the investor, (2) specific market conditions, and (3) broader financial aspects of the economy. Presentation and interpretation of student reports on selected topics. Formerly Finance 682.
691. Seminar in International Finance (3) F,S Faculty

Prerequisites: Finance 490, background in economics, accounting and finance, graduate standing in business administration. Covers real and monetary factors in the finance of international business, international capital markets, movements of funds and special problem area.
695. Selected Topics (3) F,S Faculty

Prerequisite: Consent of instructor. Topics to be announced in the Schedule of Classes. Topics change each offering and in the absence of significant duplication the course may be repeated once for credit.
697. Directed Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Individual study under the direction of the faculty

## Management and Human Resources Management

## Management

## Upper Division

300. Operations Management (3) F,S Laufer, Rudkin, Stanton, Stone

Recommended preparation: Quantitative Systems 310. Analysis of theory and philosophy of operations management and of the principles of planning and contro of the operations system. Emphasis on available tools for decision making.
302. Industrial Operations (3) F,S DeVoe

Recommended preparation: Management 300 or equivalent. Analysis of the principles of industrial processes and the operations in a system; philosophies of basic operations and decision making in the selection of operations and the state of technology in a system
303. Introduction to Management (3) F,S Hamburger, Lyle, Metzger

Survey of the various theories, principles and concepts of management as developed by the classical, behavioral and management science schools of thought. This course is primarily intended for the student who needs to acquire introductory and unifying knowledge in management theories and concepts.
326. Management and Society (3) F, S Heise, Morse, Stone

Issues of current concern to corporate oligarchs; analysis of management's responsibilities to stock holders, employees, customers, the government and society. Issues include profits, pollution, ownership of research and social accountability.
*401. Work Design and Measurement (3) F,S DeVoe, Kiang, Laufer, Rudkin
Recommended preparation: Management 300 or 500 . Analysis of principles and theory of motion economy; work place and equipment design with emphasis on ergonomics and human engineering; principles of work measurement.
*402. Inventory Management (3) F,S Lyle 300 or equivalent. Analysis of Recommended preparation: Management 300 or equivalent. Analysis of principles and philosophies of operation scheduling inventory control and their interactions
*405. International and Comparative Management (3) F,S Bates, Flores
Recommended preparation: Management 425 or 500 . Analysis of the functions of management in international business; comparative management studies, and the impact of the environment on management performance.
*406. Quality Management (3) F,S Hamburger, Rudkin
Recommended preparation: Management 300 or equivalent. Analysis of the principles and purposes of quality control and the study of the methods of managerial decision making.
*407. Logistics Management (3) F, S Lyle
Recommended preparation: Management 300 or equivalent. Analysis of principles and philosophies of planning materials requirements, acquisition processes and distribution in all types of organizations, and the study of the methods of logistics decision making.

## 421. Management of Small Business Enterprises (3) F,S Flores, Heise,

 Stanton, StoneAnalysis of the formation of management functions and decision making as related to small enterprise. Cases and problems will be examined.
*422. Sociotechnical Systems (3) F,S Sartore, Smith
Design philosophies for identifying and measuring elements of sociotechnical systems. Analysis of the interrelationship of technology and work groups. Technological change and social change models. Technological forecasting.

## 423. Women in Management (3) F,S Morse

The new role of women in management. Examines stereotypes of women in business and strategies for bringing women into management. Considers legal, social and interpersonal factors. Course will provide interactive skills for both men and women in management. Open to women and men.

## 425. Administrative Organization Systems and Business Policy (3) F,S Faculty

Recommended preparation: Senior standing. Analysis of the principles and theory of administrative organizations, information systems, management functions, decision-making tools, strategies and administrative policy formulations. Business problems and cases will be used extensively.
*426. Management and Information Systems (3) F,S Smith
Evaluation of concepts, analysis and design of management information systems; management decision models, strategies for implementing system changes. Not open to students with credit in Office Management 432.

## 450. Comparative Management Systems (3) Faculty

Study of management structures, function and responsibility under conditions ther than those found today in the United States. Countries studied will vary from year to year; limited foreign terminology may be developed and used in the course.

## 495. Selected Topics (1-3) F, S Faculty

Prerequisites: Consent of instructor and grade point of 3.0 in management and operations management. Topics of current interest in management selected for intensive study. May be repeated for a maximum of 6 units. Topics will be announced in the Schedule of Classes.

## 497. Directed Studies (1-3) F,S Faculty

Prerequisites: Consent of instructor and department chair, on Dean's List and 3.0 GPA or higher in management. Individual projects, study and research of advanced nature in managem ent.

## Graduate Division

541. Industrial Logistics (3) $S$ Morse

Prerequisites: Minimum of three units in operations management and three units in marketing or consent of instructor. Systems analysis and synthesis of the general logistics system containing the marketing, production and transportation activities. Emphasis placed on definition of system components of outputs activities and inputs and the specification and quantification of the major functional relationships interrelating these components.
542. Enterprise Structure and Operation (3) F Hamburger

Prerequisite: Graduate standing or consent of instructor. Systems analysis and synthesis of the general enterprise system composed of the logistics, money information, talent and decision sub-systems. Emphasis on the examination of the components of each of the sub-systems and how they interrelate in the operation of the total enterprise. Systems approach of defining outputs, activities and inputs is used as the vehicle for analysis.
543. International Business Policy (3) F Campo-Flores

Prerequisites: Nine units of 500/600 level courses in the area of international business. Analysis of current theory and principles of international business managemunt pertaining to problems of formulating policy and developing strategies and tactics in the multinational corporation; case studies, readings, logistic analysis and research report.

## 544. Management and Operations Management Decision Making

(3) S DeVoe, Laufer

Prerequisites: Quantitative Systems 210; Management 500 or Management 300 and 425. Basic course in quantitative tools vital to the successful managerial planning, control and organization. A thorough study of how systems analysis network analysis and probability can be applied in these critical manageria functions. Emphasis is on the application rather than derivation.

640A,B. Seminar in Operations Management (3,3) F,S DeVoe
Prerequisite: Management 300 or 500 . Application of analytical techniques to selected problems and case studies in industrial management. GBA 640A not open to students with credit in Management 600. Form erly Managem ent 600A,B.
641. Seminar in Advanced Production-Inventory Systems (3) F DeVoe

Prerequisites: Management 402 and 300 or 500 . Application of newly developed techniques to production planning and scheduling; deterministic and stochastic demands in inventory control. Formerly Management 601.
642. Seminar in Operations Management Simulation (3) $S$ DeVoe

Prerequisites: Management 402 and 442 or consent of instructor. Design and testing of simulation models of operations management systems. Use of the techniques, models and programming languages available as tools for solution of operating systems. Individual and group assignments in the construction and programming of an operations management model.
643. Seminar in Sociotechnical Systems (7) F Smith

Prerequisite: Management 422. Advanced topics in design of work environments. The interplay between industry, community and management. Formerly Management 622.

645A,B. Seminar in Management Policy and Problems $(3,3)$ F,S Bates, Metzger, Stanton
Prerequisite: Management 425 or 500 or consent of instructor. History of management thought; business organization, strategies and policies; executive control; managerial problems. GBA 645 A not open to students with credit in Management 625 . Formerly Management 625A, B

646A,B. Seminar in Organization Analysis (3,3) F,S Bates, Smith, Stanton Prerequisite: Management 425 or 500 or consent of instructor. Scientific analysis of organization. The management function; audit of management performance GBA 646A not open to students with credit in Management 626. Formerly Management 626A,B.

## 647A,B. Seminar in Management Planning and Control Systems <br> $(3,3)$ F,S

 RudkinPrerequisite: Management 425 or 500 or consent of instructor. Analysis of planning and control systems in management. Cases and problems will be examined. Formerly Management 627A, B.

## 695. Selected Topics (3) F,S Faculty

Prerequisite: Consent of instructor. Topics to be announced in the Schedule of Classes. Topics change each offering and in the absence of significant duplication the course may be repeated once for credit.
697. Directed Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Individual study under the direction of the faculty.

## Human Resources Management

## Upper Division

360. Behavioral Sciences and Management (3) F,S Inderlied, Lewis, Simons Traynor, Whitcomb, Faculty
Contributions of the behavioral sciences to more effective use of human resources in industry. Emphasis on theories of employee motivation, case studies of human relations problems and techniques for integrating individual and organizational goals.
361. Human Resources Management (3) F,S Lewis, Quinn, Traynor, Faculty Survey of theories, policies and practices governing employer-employee relations in such areas as labor-management, organization, selection, training, salary administration, communications and management development. Emphasis on the research approach to solving management problems.
362. Labor Relations (3) F,S Monat, Simons, Faculty

Development, aims, structure and functions of labor and employer organizations; the nature and objectives of management; the bargaining process; labor law and governmental intervention; dispute settlement techniques; unemployment; unions and minorities; and employee organizations in government and the professions. Not open to students with credit in Economics 340.
*440. Collective Bargaining (3) F,S Traynor, Faculty
Prerequisite: Human Resources Management 361. Collective negotiations. Examination of the roles of management, labor and government in structuring work environments. Nature of the process of negotiation and conflict resolution in organization.
*445. Job Analysis and Evaluation (3) F,S Quinn, Faculty
Prerequisite: Human Resources Management 361. Techniques of obtaining, verifying, organizing, storing and retrieving information about jobs. Analysis of multiple uses of occupational information.
446. Organizational Creativity (3) F,S Gregory

Theory and practice in the application of creative problem solving for achieving of objectives in all areas of business. Nonquantitative emphasis on the use of creative research methodology in decision making: classroom exercises and case studies.
*463. Personnel Development (3) F,S Quinn, Traynor, Faculty
Prerequisite: Human Resources Management 361. Criteria for identifying development and training needs of managers, supervisors and employees. Survey and critical analysis of current industrial programs and trends.

## 464. Managerial Psychology (3) F,S Inderlied, Kirkpatrick, Simons,

 Whitcomb, FacultyPrerequisite: Human Resources Management 360. Principles of psychology and their applications to individual, small group and organizational behavior. Emphasis on personnel assessment, management development, morale and organizational effectiveness.

## 465. Personnel Selection and Appraisal (3) F,S Teel

Prerequisite: Human Resources Management 360 or 361 or consent of instructor. Survey and critical analysis of techniques for identifying personnel requirements, recruiting an adequate supply of candidates, selecting the best qualified applicants and appraising on-the-job performance, both of individuals and of organizations. Entry-level through top management jobs considered. Emphasis on student participation in developing and/or using selection and appraisal techniques.
466. Behavioral Science and Change (3) F,S Whitcomb

Prerequisite: Human Resources Management 360. Provides a theoretical foundation for the change processes, as well as practical application of concepts. It will include a study of the process of change in individuals, groups and organizations, focusing on theory, research and current practices. The skills needed to manage change and to plan for innovation in institutions and organizations will be explored. Concepts and methods will be tested through individual and group projects.
*495. Selected Topics (1-3) F,S Faculty
Prerequisites: Consent of instructor and grade point of 3.0 in human resources management. Topics of current interest in human resources management selected for intensive study. May be repeated for a maximum of 6 units. Topics will be announced in the Schedule of Classes.

## *497. Directed Studies (1-3) F,S Gregory

Prerequisites: Consent of instructor and department chair, on Dean's List and 3.0 GPA or higher in human resources management. Individual projects, study and research of advanced nature in human resources management.

## Graduate Division

552. Comparative Labor Relations Systems (3) F,S Simons

Prerequisite: Human Resources Management 361, 440 or GBA 650. Com parative cross-country survey and analysis of the history, structure, institutional arrangements and philosophy of the labor relations systems in advanced developing and underdeveloped countries. Comparative survey and analysis of labor and management relations and the role of government in industrial relations particularly in the settlement of industrial disputes. Formerly Manpower Management 550.

## 554. Labor Arbitration (3) F,S Faculty

Prerequisite: Human Resources Management 440 or consent of instructor. Application through case analysis of the principles, practices and techniques of labor arbitration. Course will include the preparation and handling of materials in briefs and oral presentations. Special attention is given to the conduct of labor relations under a collective bargaining agreement, such as union security, seniority, discipline, transfers and promotions, management rights and grievance procedures and arbitration. Formerly Manpower Management 555.
556. Management of Minority Groups (3) F,S Kirkpatrick

Prerequisite: Graduate standing. Consideration of the special management problems in connection with disadvantaged minority groups. Topics will include personnel selection and placement, training, motivation, morale, the concept of cultural deprivation and the interface between the white and the minority worker in the industrial situation. Attention will be devoted to the needs of hardcore unemployed individuals, as well as to other minority group members. Formerly Manpower Management 565.
650. Seminar in Labor Relations (3) F,S Faculty

Prerequisite: Human Resources Management 361 or 500. Intensive analysis of current problems of labor and management. Formerly Manpower Management 640.
652. Seminar in Personnel Management (3) F,S Gregory, Kirkpatrick, Simons Prerequisite: Human Resources Management 361 or 500. Case approach to human relations problems confronting business executives. Formerly Manpower Management 660.

## 655. Seminar in Employee Motivation (3) F,S Teel

Prerequisite: Human Resources Management 360 or 464 or consent of instructor Survey and analysis of research studies of the relationship between employee motivation and productivity. Critical review of theories of human motivation and the data supporting them. Emphasis on applications of motivation theory in the Mand Formerly Manpower Management 545. Not open to students with credit in Manpower Management 550.
695. Selected Topics (3) F,S Faculty

Prerequisite: Consent of instructor. Topics to be announced in the Schedule of Classes. Topics change each offering and in the absence of significant duplication the course may be repeated once for credit
697. Directed Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Individual study under the direction of the faculty.

## Marketing

## Upper Division

## 300. Marketing (3) F,S Faculty

Recommended preparation: Economics 200 or 201 or 300. Interdependence of elements in the firm's marketing system. Relation of the marketing system to other activities in the firm. The firm's role in domestic and world marketing environments. Economic and social effects on marketing, human behavior as it affects marketing, marketing communications, marketing management problems and their solutions

## 310. Retail Concepts and Policies (3) F,S Ash, Butcher

An overview of the retail system. Retail decision making is emphasized in relation to the following areas: store operation and management; merchandise assortment and pricing decisions; store location and layout; advertising and sales communication; consumer analysis; retail accounting and control. Cases and term projects are required.
320. Interpersonal Marketing Communications: Salesmanship (3) F,S Ash, Ford, Faculty
Economic aspects of consumer demand as related to selling. Individual and company objectives in selling from the business and social point of view; contributions of psychology, sociology and other benavioral sciences to salesmanship; evaluation of selling techniques and practices including recruiting, training and compensation.

## 330. Mass Marketing Communications: Advertising (3) F, S Harding, Klein, Wolff

Principles and practices of advertising. Social and economic importance of advertising and its relation to modern business organization; importance of an advertising plan; preparation of advertisements, copy and layout, selection of media and sales promotion.
340. Transportation Systems (3) F,S Hall

Principles of freight traffic, problems of rates and service, importance of the industrial traffic manager, shipping documents, diversion and reconsignment, routing, carrier liability, shipper responsibility, transits, traffic organizations, economic and financial aspects of transportation facilities, services and patterns of public regulation

## 380. International Business (3) F Spiller, Faculty

The extent and expansion of world markets, the flows of trade and U.S. participation therein. Opportunities and problems arising from participation in export/import, transportation, and other aspects of international business. Cases problems, term project and class presentation required.
*401. Marketing Systems and Environment (3) F,S Ash, Butcher, Spiller
Prerequisite: Marketing 300. Study of marketing institutions and their interrelationships in the distribution process. Economic, behavioral, social and political forces which influence vertical marketing systems are discussed. Cases, problems and term projects are required.
*403. Marketing Communication Theory (3) F, S Klein
Prerequisite: Marketing 300. The business communications source; objectives, social and cultural environment. Encoding process in relation to the consumer. Decoding process and the consumer's frames of reference. Consumer attitude formation and change. Term projects with classroom presentations required.
404. Communication Theory-Nonverbal (3) $S$ Klein

Role of nonverbal communication and behavior in the total marketing process. Relationship between verbal and nonverbal interaction. Definition and measurement of communication effectiveness.
408. Marketing Management (3) F, S Faculty

Prerequisites: Marketing 300; senior standing. Strategies and techniques in marketing management. Student is required to apply prior material from the marketing curriculum to problems and cases in a seminar setting. Emphasis is on decision making in such matters as distribution and product, pricing and promotional strategies. Problems, cases and term projects required.
*430. Promotion Strategies (3) F,S Frye, Harding, Spiller, Wolff
Prerequisite: Marketing 300. Communication as a tool of promotional marketing management. Major strategic promotion problems faced by marketing management, including allocation of resources to communication alternatives, evaluation of communication effectiveness and coordination with other elements of the marketing system. Cases, problems, class presentations and term projects are required.
432. The Consumer: A Socio-Legal Approach (3) F George, Klein

Psychology of the consumer and growth of the consumer movement. Major issues including problems relating to advertising, sales practices, pricing warranties and product safety. A study of consumer protection legislation. An examination of legal remedies and corporate responsiblity. Same course as Finance 432.
*442. Air Transportation (3) F,S Harding, Faculty
Prerequisite: Marketing 340. Commercial air systems of the U.S.; economic characteristics, management and public regulations; problems and services of commercial air transportation; operations, equipment, passenger and cargo services of airports and airlines.
*465. Industrial Marketing (3) F,S Faculty
Prerequisite: Marketing 300. Identification of the influencers and decision makers, input-output analysis and study of the sources of industrial marketing data. Pricing and price negotiation. Product development and testing. Design and control of the channels of distribution
*470. Marketing Research (3) F, S Cotta, Frye, Holmes, Palubinskas, Spiller Prerequisites: Marketing 300, Quantitative Systems 310. Fundamentals of arketing and industrial research as an approach to problem-solving in business Cases are used to develop the student's analytical ability and demonstrate the application of business research fundamentals. Term projects
*473. Marketing Decision Making (3) F,S Frye, Holmes, Klein
Prerequisites: Quantitative Systems 310 and Marketing 300 (may be taken concurrently) or consent of instructor. Solving marketing problems through the application of analytical techniques. Emphasis is on fundamental understanding and applications. Techniques are reviewed, explained and applied to actual marketing data and to case situations. Problem sets. Not open to students with credit in Marketing 373.
*480. International Marketing (3) F,S Palubinska
Prerequisite: Marketing 300 or consent of instructor. Individual enterprise in varying cultural, economic and political environments; international marke ppportunities; types of foreign operations; international marketing management financing; legal situation; comparison with domestic marketing logistics and transportation. Problems, cases and term projects with classroom presentation are required.
*490. Consumer Behavior (3) F,S Butcher, Klein, Stuteville
Prerequisite: Marketing 300 or consent of instructor. Nature of parameters of consumer behavior. Socio-psychological factors including personality, small group theory, dem ographic variables, social class and culture.

## 492. New Products/New Service (3) F,S Stuteville

Prerequisite: Marketing 300 or consent of instructor. An analysis of the process and strategy of new product or service innovation, research and introduction. The course will stress actual recent case histories from Los Angeles area firms. Students will conceive and propose new product introductions.
*495. Selected Topics (1-3) F,S Faculty
Prerequisites: Consent of instructor and grade point of 3.0 in marketing. Topics of current interest in marketing selected for intensive study. May be repeated for a maximum of 6 units. Topics will be announced in the Schedule of Classes.
*497. Directed Studies (1-3) F,S Faculty
Prerequisites: Consent of instructor and department chair, on Dean's List and a 3.0 GPA or higher in marketing. Individual projects, study and research of advanced nature in marketing

## Graduate Division

660. Seminar in Marketing Theory (3) F Ash, Butcher, Cotta, Harding,

Holmes
Prerequisite: Marketing 500 or 408 . Current marketing thought as a basis for the understanding of marketing interactions. Formerly Marketing 608.

## 661. Seminar in Marketing Policies (3) F,S Ash, Harding, Holmes, Spiller

 Prerequisite: Marketing 500 or 408. Current marketing problems, both technological and social, and their relation to population, income, channels of distribution, government regulation of marketing, executing product development and the sales organization. Form erly Marketing 609.662. Seminar in Marketing Environment and Institutions (3) S Ash, Butcher, Stuteville
Prerequisite: Marketing 500, or 300 and 310 . Analysis of the environment in which marketing institutions operate, with an accent on prognostication of marketing institutions. Formerly Marketing 610.
663. Seminar in Advertising Policies (3) F,S Harding, Wolff

Prerequisites: Marketing 330,408 or 500. Advertising policies and problems. Case studies in executive determination of basic strategy, promotional programs, advertising administration, physical and psychological aspects, determination of effectiveness and coordinative concepts. Special problems of economic justification; ethics and government regulation. Formerly Marketing 630
664. Seminar in Transportation (3) $S$ Hall, Harding

Prerequisite: Marketing 340. National transportation policy and current management problems. Formerly Marketing 640.

## 665. Seminar in Marketing Research (3) F,S Frye

Prerequisite: Marketing 500 or 408 . The role of research in the solution of marketing problems. Research methods in assemblying, analyzing, and interpreting information for business use. Case studies and class projects may be required. Formerly Marketing 670.

## 666. Seminar in International Marketing (3) S Palubinska

Prerequisite: Consent of instructor. Enterprise adjustment to the dynamics of international socio-economic environment; development of strategy for solution of marketing problems caused by changing technology, social and economic development and changing objectives of governmental commercial policy. Formerly Marketing 680

667A. Seminar in International Business - Africa and the Near East (3)
S, alternate years Faculty
Prerequisite: Marketing 380 or 480 or Finance 490 or Management 405. Environmental conditions, requirements and problems confronting business in the countries of Africa and the Near East. Research and analysis of the impact and potential of this area in world markets. Formerly Marketing 681

## 667B. Seminar in International Business-Asia and Oceania <br> (3) F, alternate

years Faculty
Prerequisite: Marketing 380 or 480 or Finance 490 or Management 405. Environmental conditions, requirements and problems confronting business in the countries of Asia and Oceania. Research and analysis of the impact and potential of this area in world markets. Formerly Marketing 682.

## 67C. Seminar in International Business - Europe (3) F, alternate years

 PalubinskasPrerequisite: Marketing 380 or 480 or Finance 490 or Management 405 Environmental conditions, requirements and problems confronting business in the euntries Europe. Research and analysis of the impact and potential of this area in world markets. Formerly Marketing 683.

## 667D. Seminar in International Business - Latin America (3) S, alternate years Spiller <br> Prerequisite: Marketing 380 or 480 or Finance 490 or Management 405

 Environmental conditions, requirements and problems confronting business in the countries of Latin America Research and analysis of the impact and potential of this area in world markets. Formerly Marketing 684.
## 668. Seminar in Consumer Behavior (3) F Klein, Stuteville

Prerequisite: Consent of instructor. Topics in the behavioral sciences as they apply to marketing. Formerly Marketing 690.
695. Selected Topics (3) F,S Faculty

Prerequisite: Consent of instructor. Topics to be announced in the Schedule of Pres. Topics the course may be repeated once for credit
697. Directed Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Individual study under the direction of the faculty.

## Quantitative Systems

## Administrative Systems

## Lower Division

130. Current Concepts of American Business (3) F, S King, Nelson

Development of an understanding of contemporary business and related societa issues and the roles of producer and consumer in the American business enterprise system. Includes introduction to major business functions
202. Introduction to Business Communication (3) F,S Gillis

Survey of written and oral communication media utilized in business; emphasis on developing skill in business informational writing.

## Upper Division

302. Business Communication (3) F,S Gillis, Pickard

Prerequisite: Quantitative Systems 202 or consent of instructor. Theory and practice of behavioral communication involved in the administrative managemen process; emphasis on written communication involving interaction, persuasion and human relations.
331. Administrative Management (3) F,S Burras, Doud

Organization, function, layout and equipment of administrative departments: general introduction to computers and computer terminology as used in the administrative management process; improvement of efficiency in the administrative management process. Not open to students with credit in Office Management 431.
*402. Business Reports (3) F,S Doud, Pickard
Analysis of the principles of collecting, organizing and presenting business data Oral and written reports involving problem solving in the administrative management process.
*432. Administrative Information Systems (3) F,S Burras, Keester
Prerequisite: Quantitative Systems 240. Provides a review of modern data processing theory and technology. Areas covered are information processing concepts; data base concepts; systems analysis, evaluation, design and implementation; and administrative considerations of information systems and methodology
*433. Financial Aspects of Business Equipment (3) F,S Keester
Prerequisite: Quantitative Systems 331 or consent of instructor. Economic easibility, procurement, financing and effective utilization of data originating, processing and communicating equipment used in the administrative management process.
*495. Selected Topics (1-3) F, S Faculty
Prerequisite: Consent of instructor and GPA of 3.0 or higher in major. Topics of Prerequisite: Consent of Classes. In the absence of significant duplication, may be repeated for a maximum of six units.
*497. Directed Studies (1-3) F,S Faculty
Prerequisites: Consent of instructor and department chair, on Dean's List and a GPA of 30 or higher in administrative systems. Individual projects, research or study in administrative systems.

## Graduate Division

520. Problems in Business Communication (3) F,S Doud, Pickard

Prerequisite: Consent of instructor. Contemporary business communication thought and research applied in the solving of organizational communication problems.
521. Advanced Administrative Management (3) F,S Doud, Keester

Prerequisite: Quantitative Systems 331 or consent of instructor. Advanced study in the problems, practices and policies involved in administrative management Methods of establishing, analyzing, standardizing and controlling administrative systems and procedures in the office.
522. Issues and Trends in Administrative Management (3) $S$ Burras, Keester Advanced study in contemporary philosophies, issues and trends in administrative management and information systems.
523. Survey of Research in Administrative Management (3) S Keeste Study, analysis, interpretation and evaluation of significant research in administrative management and information systems.
620. Case Studies in Administrative Management (3) F,S Doud, Keester Case studies in depth of regional organizations involving the interrelationships of information systems, communications and administrative management
697. Directed Research (1-3) F,S Faculty

Prerequisite: Consent of instructor. Individual study under the direction of the faculty.

## Quantitative Methods

## Lower Division

## 40. Business Data Processing (3) F,S Faculty

Introduction to BASIC programming. Data processing and computer programming fundamentals designed to provide an understanding of the function of computers in business and governmental operations

## 242. COBOL Programming (3) F,S Gillis, Gilon

Introduction to COBOL programming with an emphasis on the application to business problems usually characterized by the need to process large files of data General treatment of language elements, file management techniques and input/output considerations. Intended for students with no background in COBOL.
243. FORTRAN Applications in Business (3) F,S Faculty

Introduction to FORTRAN programming with an emphasis on the application to business data processing. This course will include the use of subroutines and mass storage devices such as tapes and disks. Intended for students with no background in FORTRAN

## Upper Division

310. Business Statistics (3) F, S Faculty

Prerequisite: Mathematics 114. Probability, measures of central tendency and dispersion, hypothesis testing and estimation, simple regression and correlation and applications of the probability distributions. Not open to students with credit in Quantitative Systems 210.
410. Probability and Decisions (3) F,S Chao, Gilon, Payne

Prerequisites: Mathematics 114, 115B or consent of instructor. Probability theory with emphasis on logical applications of probability models to business problems and decision making. Topics include elements of probability, distribution functions, random variables, probability distributions and their properties.
411. Statistical Decision Theory (3) F,S Chao, Stinson

Prerequisite: Quantitative Systems 410. Statistical tools for the analysis of data and for business decision making. Topics include sampling and sampling distributions, hypothesis testing and estimation.
*413. Comparative Analysis of Computer Languages (3) F,S Gilon Prerequisite: Quantitative Systems 240 and either 242 or 243 , or consent of instructor. Comparison of key characteristics of several major higher level languages. The languages are BASIC, FORTRAN, COBOL, APL, SNOBOL, LISP and GPSS. The characteristics are computational aspects, string and list processing, data bank design and file management and simulation capabilities.
440. Time Sharing Software for Business Statistics (3) F,S Faculty

Prerequisite: Quantitative Systems 310 or consent of instructor. Solution of elementary practical business problems through Time Sharing Software (MINITAB or SPSS). Programs covered include: descriptive statistics, analysis of variance, contingency tables, non-parametric methods. A survey of business data sources will also be covered.
442. Business Computer Methods (3) F,S Gilon

Prerequisites: Quantitative Systems 240, 310. The major topics covered are financial modeling, least squares model design (simple regression analysis), and forecasting techniques and time series decomposition. For each topic the following four steps are implemented: (1) brief theoretical exposition, (2) business data sources, (3) computer software use, (4) calculator verification. A financialregression type calculator is required for this course.
445. Computer Use in Multiple Regression Modeling (3) F,S Gilon

Prerequisite: Quantitative Systems 442. Topics covered are: Multiple regression analysis (MRA), polynomial regression, and simultaneous equations modeling and econometric forecasting. The students will be guided in the development and verification of their own permanent MRA package using matrix algebra in BASIC, FORTRAN, or APL according to the student's own preference. Time Sharing software in MRA-related programs will also be covered
*460. Operations Research: Deterministic Models (3) F,S Stinson, Wollmer Prerequisites: Mathematics 114 and 116 or Mathematics 123, Quantitative Systems 410. Theory and applications of operations research as an aid to management decision making. Emphasis on the application of deterministic models such as network analysis, linear programming, dynamic programming, PERT/CPM and introduction to game theory.
*463. Operations Research: Probabilistic Models (3) F,S Stinson, Wollmer Prerequisite: Quantitative Systems 410. Continuation of Quantitative Systems 460 with extensions to probabilistic models such as inventory, queueing theory, Markov chains and simulation.
*466. Computer Model Simulation (3) F,S Lin
Prerequisites: Quantitative Systems 310, 243. Solution of business simulation problems through extensive use of simulation languages such as GPSS and SIMSCRIPT II. Topics covered include: random number and process generator, simulation of queueing and inventory systems, and design, analysis and validation of simulation experiments.
*495. Selected Topics (1-3) F,S Faculty
Prerequisite: Consent of instructor and GPA of 3.0 or higher in major. Topics of current interest in the field as announced in the Schedule of Classes. In the absence of significant duplication, may be repeated for a maximum of six units.
*497. Directed Studies (1-3) F,S Faculty
Prerequisites: Consent of instructor and department chair, on Dean's List and a Prith methods. Individual projects, research or study in quantitative methods.

## Graduate Division

570. Economic Theory of Decision (3) F,S Chao, Stinson

Prerequisite: Quantitative Systems 210. Economics of decision making in pusiness and government. Consistent behavior in terms of personal utilities and probabilities. Departures from consistency; stochastic theories of behavior and resulting econometric models.
571. Theory of Information (3) F,S Chao, Stinson

Prerequisite: Quantitative Systems 570 or consent of instructor. Decision making and behavior in terms of personal utilities and probabilities. Optimal decision and information rules. Amount, cost and value of information.
572. Stochastic Processes (3) F,S Faculty

Discrete and continuous stochastic processes including renewal theory, Markov chains and queuing theory. Application to the solution of business oriented problems.
573. Advanced Statistical Inference (3) F,S Payne, Sachdeva

Prerequisite: Quantitative Systems 4,10. Statistical theory and practical plications to problems of the firm. Includes discrete and continuous distributions, random sampling, transformations of variables, estimation, tests of hypothesis, sufficience.
574. Topics in Multivariate Analysis (3) F,S Gilon, Sachdeva

Prerequisite: Quantitative Systems 413. Multivariate statistical techniques in Prerequl and management science research. Topics include factor analysis, ehant analys, multiple discriminant functions, canonical correlations, and generalized distance functions.

## 575. Experimental Design (3) F,S Stinson

Prerequisite: Quantitative Systems 413. Experimental design as applied to behavioral and management science research. Topics include complete and incomplete block design, factorial experiments, Latin squares, analysis o covariance and multiple comparisons.
670. Seminar in Operations Research and Statistics (3) F,S Stinson, Wollmer Contemporary issues, problems and trends in operations research and statistics.
695. Selected Topics (3) F,S Faculty

Prerequisite: Consent of instructor. Topics to be announced in the Schedule of Classes. Topics change each offering and in the absence of significant duplication the course may be repeated once for credit.
697. Directed Research (1-3) F,S Faculty

Prerequisite: Consent of instructor. Individual study under the direction of the faculty.

## Graduate Business Administration

500. Research Methodology (3) F,S Faculty

Prerequisite: QS 500 or equivalent. Scientific methods of research; variation in research methodology and design. The application of research findings to major phases of business.
690. Applied Research (3) F,S Faculty

Prerequisite: GBA 500. Application of research methodology in an individual research project. Emphasis is on experimentation, simulation and surveys. Utilizes background of specific statistical tools and techniques and an understanding of theory development and research design.
698. Thesis (2-4) F,S Faculty

Prerequisite: GBA 500. Planning, preparation, and completion of a thesis in business administration.
699. Integrated Analysis (3) F,S Sartore

Prerequisites: Classified MBA/MS status in the last semester or within six units of completion of the 33 -unit minimum graduate program and advanced to candidacy. A comprehensive course which serves as the required terminal examination for School of Business Administration graduate candidates. A project is required. A study of a wide range of business problems and formulation of solutions to them. The object of this course is to assess student skills in integrating knowledge from all functional areas of business and applying them to complex business problems arising out of changing technology, competitive market conditions, social changes and governmental actions. The methodology may include cases, games, and team teaching. A grade of B or better is required for successful completion. Students must file application for entry into GBA 699 no later than the fourth week of instruction in the semester preceding the one in which GBA 699 will be taken. Application forms are available in the SBA Graduate Office.

## Graduate Prerequisite Courses

## Accounting

500. (498G) Managerial and Financial Accounting (3) F,S Faculty

Prerequisite: Graduate standing. Analysis of accounting reports and development of information, consistent with generally accepted accounting principles, of data underlying such reports; evaluation of internal control, systems and procedures; cost accounting. Not open to students with credit in Accounting 410G. (A terminal course. Graduate students starting accounting and planning on continuing in that area should select Accounting 201.) Not open to students with credit in Accounting 500.
501. (499G) Intermediate Accounting (3) F Faculty

Prerequisites: Graduate standing, Accounting 200B or 201. Accounting theory and practice and report development and presentation. Not open to students with credit in Accounting 300A-B or 404G.

## Chemistry

500. (498G) Legal Environment of Business (3) F,S Faculty

Prerequisite: Graduate standing. Framework and role of law in society emphasizing the judicial process, basic concepts of commercial law and evolution of legal attitudes between business and government. Not open to students with credit in Finance 322, 324 or 428G
501. (499G) Finance Survey (3) F,S Faculty

Prerequisite: Graduate standing. Financial theory, management and environment of the firm. Not open to students with credit in Finance 360, 362, 461G or 501.

## Management

500. (498G) Business Policies, Operations and Organization (3) F,S Faculty Prerequisite: Graduate standing. Recommended preparation: Quantitative Systems 410. Theory and philosophies of industrial management, principles of internal industrial organization and control systems, motion and time study, industrial statistics, industrial safety and industrial research as alds to decision making. Administrative organization systems, information systems, management functions, decision making, strategies and policy formulation. Not open to students with credit in Management 300, 425, 412G or 500.

## Human Resources Management

500. (498G) Human Resources Management (3) F,S Faculty

Prerequisite: Graduate standing. Principles, practices and techniques of employee-employer relations. Sigificance of labor-management relations. Effective use of human resources. Not open to students with credit in Human Resources Management 461G or 500.

## Marketing

500. (498G) Marketing Concepts (3) F,S Faculty

Prerequisites: Graduate standing, consent of instructor. Critical practices in context of changing economic, social and governmental conditions. Readings, case analysis and research on problems of current interest. Not open to students with credit in Marketing 300 or 400G or 500.

## Quantitative Systems

500. (498G) Probability and Statistical Decision Theory (3) F,S Faculty

Prerequisites: Graduate standing, consent of instructor. Probability theory and statistical methodology with applications to decision problems of business and other applied disciplines. Not open to students with credit in Quantitative Systems 500.

Economics 500. Business Economics
Workings of the price system in the allocation of resources, and the determination of the level and fluctuations of aggregate economic activity, with special emphasis on the role of business enterprise in the economy. Analysis of the economic implications of various forms of industrial organization and the application of public policy to business activity, including antitrust policy and regulation.

Department Chair: Dr. Kenneth L. Marsi.
Emeriti: Julie V.N. Kierbow, Clyde E. Osborne.
Professors: Bauer, Becker, Goldish, Harris, Henderson, Jensen, Kalbus, Lieu, Marsi, Mayfield, Perlgut, Po, Senozan, Simonsen, Stern, Tharp, Wynston.

## Associate Professors: Baine, Berry, Devore, Hunt, Loeschen.

Assistant Professors: Cohlberg, Dunne, Maricich.
Undergraduate Adviser: Dr. Kenneth L. Marsi.
Graduate Adviser in Chemistry: Henry N. Po.

## Graduate Adviser in Biochemistry: Louis E. Perlgut

Graduate Studies Committee: Po, chairman; Jensen, Lieu, Perlgut, Senozan, Wynston.
The program in chemistry at the bachelor's degree level is planned to promote development of both a broad and specialized background in a specific science, to serve as preparation for graduate work in chemistry or biochemistry, and to provide a foundation for those students seeking careers in teaching, medicine and in industrial and governmental scientific endeavors. The B.S. degree in chemistry is certified by the American Chemical Society.
The Department of Chemistry offers graduate study leading to research-based master of science degrees in chemistry and biochemistry. The candidate is urged to observe the general requirements stated in this Bulletin as well as the specific departmental requirements stated here and, more fully, in the Graduate Studies Brochure of the Department of Chemistry, available upon request.
A limited number of teaching, graduate and research assistantships are available. Usually, these involve half-time work in the instructional program at the freshman level or work in the laboratory. Application forms for these positions are available from the Graduate Adviser, Department of Chemistry.

## Chemistry Department Advisory Council

This council, including persons prominent in the community, fosters communication between academic and industrial chemistry. It advises the department concerning the instructional program and informs the department of opportunities for interaction with the community.
Dr. Joseph R. Brown, Jr., Park Investment Co.
Dr. Norman Byrd, Branch Manager of Chemical Research, Douglas Aircraft Co
Dr. Marjories Caserio, Dept. of Chemistry, UC, Irvine

Dr. John Farrar, Manager, Materials and Processes Laboratories Engineering, Rockwell International
Dr. H. Dwight Fisher, Vice-President, West Coast Technical Service, Inc.
Mr. Arnie Grant, Manager, Chemistry Dept., TRW
Dr. Melvin Hochberg, President, Rachelle Laboratories, Inc
Mr. Lester L. Louden, Chief Chemist, Los Angeles Dept. of Water and Power
Dr. Andrew J. Masley, Manager, Program Development, Aerojet Electrosystem Co.
Mr. Allen L. McCloskey, Vice President and Director of Research, U.S. Borax Research Corp.
Mr. John T. Ogorzalek, Tenneco Chemicals, Inc.
Mr. John H. Pedersen
Mr. Richard Stegemeier, Vice President, Research, Union Oil Co. of California
Mr. Richard Stegem G. Wannamaker, Dow Chemical

## Ex Officio Members

Dr. Stephen Horn, President, CSULB
Dr. Kenneth L. Marsi, Chairman, Chemistry Dept
Dr. Roger D. Bauer, Dean, School of Natural Sciences
Howard L. Still, Special Assistant to the President, CSULB

## Major in Chemistry for the Bachelor of Science Degree (code 3-7661)

Chemistry majors must achieve a grade of $C$ or better in all chemistry courses required for the major.
Lower Division: Chemistry 111A-B, 251; courses to support the major to include Physics 151, 152, 153 and Mathematics 122, 123, 224, and one of the following: Microbiology 210, Biology 210, 212, 216. A reading knowledge of scientific German or Russian is required.
Upper Division: Chemistry 321A-B, 371A-B, 373, 385, 431, 451, either 491 and 499 or English 300 or 317 , and an additional six units of upper division chemistry. A maximum of three units from Chemistry 496 and Chemical Engineering 320, 305, or 430 may be used to fulfill this six-unit requirement.
Transfer Students: A student who transfers to the University must take at least 16 units of upper division chemistry courses here including either Chemistry 321B or Chemistry 371A-B. In exceptional situations, at the discretion of the department, advanced courses may be substituted for the 321 B or Chemistry $371 \mathrm{~A}-\mathrm{B}$ requirement. To receive credit toward the major for Chemistry 321A and 321B, which have been taken elsewhere, the consent of the department chairperson is required; also satisfactory performance on an organic chemistry proficiency examination may be required.

## Major in Chemistry for the Bachelor of Arts Degree (code 2-7661)

The bachelor of arts degree program in chemistry is intended to provide a general background in chemistry, but not in the depth required for a bachelor of science degree. This program, when complemented with study in other areas, will serve as preparation for a career in chemical and related industries or secondary science education. The bachelor of arts program is also an appropriate preparation for medical and dental schools, and for graduate programs in the life sciences. In order to take full advantage of the bachelor of arts program for various career objectives, adequate counseling by chemistry advisers is indispensible. Each student must confer with an adviser to set up his/her individually tailored program in chemistry and one or more complementary areas prior to beginning the course of study.

Chemistry majors must achieve a grade of $C$ or better in all chemistry courses required for the major.
Lower Division: Chemistry 111A-B, 251; courses to support the major to include Physics 100A-B or 151, 152; and Mathematics 122, 123.
Upper Division: Chemistry 321A-B, 371A-B or 377A-B; English 300 or 317. A minimum of 3 additional units to be chosen in consultation with an adviser must be taken from Chemistry $373,385,421,422,431,441 B, 471,472$ or 496 . Students
must consult an adviser to select additional courses to meet the student's individual goals and interests.
Transfer Students: A student who transfers to the University must take at least 12 units of upper division chemistry courses here. To receive credit toward the major for Chemistry 321A-B which has been taken elsewhere, consent of the department chairman is required; also satisfactory performance on an organic chemistry proficiency examination may be required.
Concurrent and/or Summer Enrollment in Another College
Students who wish to take course work in a community or another college to meet curricular requirements while enrolled as undergraduates in the School of Natural Sciences must petition the appropriate department for prior approval to enroll in specific courses. This policy is for either concurrent enrollment or summer enrollment. University policy must also be complied with. See "Concurrent Enrollment" and "Transfer of Undergraduate Credit" in this Bulletin. Courses not receiving prior approval will not be accepted for credit by the department.

## Minor in Chemistry (code 0-7661)

A minimum of 20 units of chemistry which must include Chemistry 111A-B. Nine units must be taken from upper division chemistry courses.

## Master of Science Degree with a Major in Chemistry (code 6-7661)

## Prerequisites

1. Acceptance as a graduate student by the Chemistry Departm ent
2. A bachelor's degree with a major in chemistry, or:
3. A bachelor's degree with undergraduate preparation in chemistry, physics and mathematics equivalent to that required for the bachelor of science degree with a major in chemistry at this University.
4. Entering graduate students are required to take placement examinations in analytical, inorganic, organic and physical chemistry. Any student failing to take and pass a placement examination in any of these subjects is required to enroll in an appropriate course or audit a course and pass an examination in that field as recommended by the Graduate Studies Committee. Usually the recommended courses are:

Chemistry 451 if the subject is analytical chemistry
Chemistry 431 if the subject is inorganic chemistry
Chemistry 321A and/or 322 if the subject is organic chemistry
Chemistry 371A and/or 371B if the subject is physical chemistry
5. The placement examinations will be given on Tuesday and Wednesday of the week preceding the first day of instruction. The Graduate Studies Committee evaluates the examinations and recommends appropriate courses to correct or any deficiencies in chemistry. The chemistry graduate adviser meets with the student at this time to prepare a tentative degree program

## Advancement to Candidacy

The department recommends advancement to candidacy after the graduate student has:

1. Either passed the placement examinations in analytical, inorganic, organic and physical chemistry or received a grade of $C$ or better in the courses and recommended by the Graduate Studies Committee for correcting deficiencies. (The student auditing courses to correct deficiencies is expected to file with the Graduate Studies Committee a statement from the instructor certifying at least C work.)
2. Earned an average of at least $3.0(\mathrm{~B})$ average in all work completed at this University as a graduate student.
3. Obtained approval of a graduate degree program by the chemistry graduate adviser, the department chairman (in consultation with the Graduate Studies Committee) and the Dean of Graduate Studies.

The sludent is expected to be advanced to candidacy by the beginning of the third semester of graduate work. Upon advancement to candidacy, a Thesis Committee will be selected in consultation with the Graduate Studies Committee.

## Requirements for the Master of Science

1. Advancement to candidacy at least one sem ester before the graduation date.
2. The completion of a minimum of 30 units to be distributed in the following way:
(a) Minimum of nine units in chemistry lecture courses in the 500 series (excluding Chemistry 595). These courses must be selected from at least two of the following fields: analytical, inorganic, organic, physical and biological chemistry.
(b) Two units of Chemistry 595 . c) Maximum of units of 698 and up to three units of 697 and/or 691)
(d) Nine to 12 units from 400 and 500 series courses (excluding Chemistry 595). The exact number of units depends on the number of 600 level courses taken. A minimum of six units is recommended from two of the following three areas: Chemistry 471 (or 472), 441A, 421. At the discretion of the Graduate Studies Committee equivalent courses taken as an undergraduate may meet these requirements but may not count toward the 30 unit requirement.
Changes in the above pattern of course requirements may be made only at the discretion of the Graduate Studies Committee and the chemistry graduate adviser.
3. Completion of an acceptable thesis.

## Master of Science Degree with a Major in Biochemistry (code 6-7658)

## Prerequisites

1. Acceptance as a graduate student by the Chemistry Department.
2. A bachelor's degree with a major in chemistry or one of the biological sciences including courses in calculus and general microbiology. Students deficient in undergraduate preparation must take courses to remove these deficiencies with or without credit towards the degree.
3. Entering graduate students are required to take placement examinations in analytical, biological, organic and physical chemistry. Any student failing to take and pass a placement examination in any of these subjects is required to enroll in an appropriate course or audit a course and pass an examination in that field. Under exceptional circumstances a student may be allowed to repeat the placement examination. The designated courses are:

Chemistry 451 if the subject is ar:alytical chemistry
Chemistry 441A and/or 441B if the subject is biochemistry
Chemistry 321A and/or 322 if the subject is organic chemistry
Chemistry 371A and/or 371B; or 377A and/or 377B if the subject is physical chemistry
4. The placement examinations will be given on Tuesday and Wednesday of the week preceding the first day of instruction. Entering students should correspond with the biochemistry graduate adviser before arrival to arrange to take these examinations. The Graduate Studies Committee evaluates the examinations and recommends appropriate courses to correct any deficiencies in chemistry. The biochemistry graduate adviser and the student's advisory committee meet with the student at this time to prepare a tentative degree program.

## Advancement to Candidacy

The department recommends advancement to candidacy after the graduate student has:

1. Either passes the placement examinations in analytical, biological, organic
and physical chemistry or received a grade of C or better in the courses prescribed by the student's advisory committee for correcting the deficiencies. (The student auditing courses to correct deficiencies is expected to file with the graduate adviser and Graduate Studies Committee a statement from the instructor certifying a minimum of $C$ work.)
2. Earned at least a 3.0 (B) average in all graduate work completed at this University or transferred to meet degree requirements.
3. Obtained approval of a graduate degree program by the graduate adviser, the department chairman (in consultation with the Graduate Studies Committee) and the Dean of Graduate Studies.
The criteria above should be met by the beginning of the third semester of graduate study. Deficient students may continue at the discretion of the Department Graduate Studies Committee.

## Requirements for the Master of Science

## 1. Advancement to candidacy.

2. The completion of all requirements in the graduate degree program as established by the student's advisory committee. The graduate program must include a minimum of 30 units with:
(a) A minimum of nine units in chemistry lecture courses in the 500 series (excluding Chemistry 595).
(b) Two units of Chemistry 595.
(c) A maximum of 10 units of chemistry in the 600 series (one unit of 695 , three units of 697 and six units of 698).
(d) Chemistry 371A and 371B or 377A and 377B; 443 and 451 taken either prior or during the course of this program. Credit earned in Chemistry 371A, 371B, 377A, 377B and all approved 400 level courses, must be applied towards the M.S. in biochemistry when it is a part of the graduate program.
Changes in the above pattern of course requirements may be made only at the discretion of the student's advisory committee and the graduate adviser.
3. Completion of an acceptable thesis.

## Lower Division

100. Fundamentals of Chemistry (4) F,S Faculty

Prerequisite: One year of high school algebra or consent of instructor. General course including elementary inorganic, organic and biological chemistry. Not open to majors or minors in the physical sciences or to students with credit in Chemistry 111 A . (Lecture 3 hours, laboratory 3 hours.)

## 101. Introduction to General Chemistry (3) F,S Faculty

Prerequisite: One year of high school algebra. (This course is a prerequisite to Chemistry 111A if the student fails to pass the Chemistry Placement Examination. Basic principles and concepts including atomicrure and chemical calculations with emphasis on problem solving. Does not count for General Education credit. Offered on a credit-no credit basis only. (Lecture 3 hours, laboratory-problem session 3 hours. Course begins the fourth week of the semester.)

## 111A. General Chemistry (5) F,S Faculty

Prerequisite: Mathematics 101 or 102 (may be taken concurrently) and successfu completion of a placement examination or Chemistry 101. High school chemistry and physics are recommended. The first semester of a two-semester sequence (Chemistry 111A and Chemistry 111B). Introduction to the principles of chemistry including chemical bonding, solution properties and chemical equilibrium and kinetics. Recommended for students who intend to pursue careers in science or engineering. (Lecture 3 hours, laboratory and problem session 6 hours.)

111B. General Chemistry (5) F, S Faculty
Prerequisite: Chemistry 111A with a grade of C or better. The second semester of a two-semester sequence (Chemistry 111A and Chemistry 111B). Continuation of the study of chemical principles with application to inorganic systems. Includes pplication of modern bonding theories to inorganic molecules and study of trends and reactivities of the elements and their compounds. Qualitative inorganic nalems are emphasized in laboratory and problem solving sessions. (Lecture 3 hours, laboratory and problem solving sessions 6 hours.)

## 200. Introduction to Chemistry (4) F,S Kalbus, Loeschen, Senozan, Stern

Prerequisite: High school algebra. Introduction to the fundamental principles of chemistry and the beginning study of organic chemistry. Not open to students with credit in Chemistry 111A. (Lecture 3 hours, laboratory 3 hours.)
251. Quantitative Analysis (4) F,S Faculty

Prerequisite: Chemistry 111B. Introduction to the techniques and theory of gravimetric and volumetric analysis, spectrophotometry, potentiometry and chromatography. This course meets the requirements of most medical and denta schools. (Lecture 2 hours, laboratory 6 hours.)

## Upper Division

300. Bio-organic Chemistry (4) F,S Berry, Cohlberg, Dunne, Perlgut,

Simonsen, Wynston
Prerequisites: Chemistry 200 with a grade of $C$ or better, satisfactory performance on a qualifying examination. Continuation of the study of organic chemistry and an introduction to biochemistry. Does not meet the requirements of medical or dental schools. (Lecture 3 hours, laboratory 3 hours.)

## 321A. Organic Chemistry (5) F,S Goldish, Harris, Henderson, Jensen

Loeschen, Maricich, Marsi, Mayfield
Prerequisite: Chemistry 111B with a grade of C or better. Chemistry 251 is recommended. The first semester of a two-semester sequence (Chemistry 321A and either 321B or 322). Designed primarily for chemistry majors, but open to other students who desire a broad background in this field. This sequence meets the requirements for medical and dental schools. Emphasis is upon the application o modern principles to structure, reactivity, methods of synthesis and physica properties of organic compounds; and spectroscopy including UV, IR, NMR and mass spectroscopy. (Lecture 3 hours, laboratory and quiz section 6 hours.)

321B. Organic Chemistry (5) F, S Goldish, Harris, Henderson, Jensen Loeschen, Maricich, Marsi, Mayfield
Prerequisite: Chemistry 321A with a grade of C or better. The second semester of a two-sem ester sequence (Chemistry 321A and 321B) for students desiring 10 units of organic chemistry. A continuation of the study of organic chemistry including heterocycles, nitrogen compounds, natural products and special topics. (Lecture 3 hours, laboratory and quiz section 6 hours.)
322. Organic Chemistry Lecture (3) F,S Goldish, Harris, Henderson, Jensen Loeschen, Maricich, Marsi, Mayfield
Prerequisite: Chemistry 321A with a grade of $C$ or better. The second semester of a two-semester sequence (Chemistry 321 A and 322 ) for students desiring 8 units of organic chemistry. Not open to chemistry majors or to students with credit in Chemistry 321B. Similar to the lecture portion of Chemistry 321B. (Lecture 3 hours.)
323. Organic Chemistry Laboratory (2) F,S Goldish, Harris, Henderson, Jensen, Loeschen, Maricich
Prerequisites: Chemistry 322 with a grade of $C$ or better and consent of department chairperson. For students who have credit in Chemistry 322 and change to a major requiring 10 units of organic chemistry
327. Organic Chemistry (3) F,S Goldish, Harris, Henderson, Jensen Loeschen, Maricich, Marsi, Mayfield
Prerequisite: Chemistry 111A with a grade of C or better. Lecture course in the chemistry of the carbon compounds. Not applicable to a degree in chemistry Lecture 3 hours.)
328. Organic Chemistry Laboratory (3) F, S Goldish, Harris, Jensen, Loeschen, Maricich
Prerequisite: Chemistry 327 which may be taken concurrently. Designed to provide training in the basic techniques of the organic chemistry laboratory. No applicable to a degree in chemistry. (Lecture 1 hour, laboratory 6 hours.)

371A. Physical Chemistry (3) F,S Baine, Becker, Devore, Senozan, Stern
Prerequisites: Chemistry 111B and 251 with a grade of $C$ or better, Mathematics 224, Physics 153. The first semester of a two-semester sequence (Chemistry 371A and either Chemistry 371 B or 372.) Principles and applications of classica thermodynamics. Introduction to statistical thermodynamics. (Lecture 3hours.)

## 371B. Physical Chemistry (3) S Baine, Becker, Devore, Senozan, Stern

Prerequisite: Chemistry 371A with a grade of C or better. The second semester of a two-semester sequence (Chemistry 371A and 371B) in physical chemistry. introduction to quantum chemistry, spectroscopy and chemical kinetics
372. Physical Chemistry (3) F Baine, Becker, Devore, Senozan, Stern Prerequisite: Chemistry 371A with a grade of C or better. Selected topics in physical chemistry of particular interest to chemical engineers. Equilibrium and steady state thermodynamics of multi-component systems including combustion gases, strong electrolytes, fused salts and alloys, transport phenomena, chemical kinetics and topics in atmospheric chemistry. (Lecture 3 hours.)
373. Physical Chemistry Laboratory (3) F,S Baine, Devore, Senozan, Stern

Prerequisites: Chemistry 251,371A, and Chemistry 371B (which may be taken concurrently), all with a grade of C or better. Introduction to basic apparatus and techniques of physicochemical experimentation and research and application of the principles discussed in 371A-B. Reference to chemical literature is required (Lecture 1 hour, laboratory 6 hours.)

## 377A. Fundamentals of Physical Chemistry (3) F Baine, Becker, Devore

 Hunt, Senozan, SternPrerequisites: Chemistry 111B with a grade of C or better; Mathematics 123 (may be taken concurrently); Physics 100B or 152. The first semester of a two-semester sequence. Principles of physical chemistry with emphasis on thermodynamics and chemical kinetics. Examples from biological and environmental sciences will be used to illustrate the principles. (Lecture 3 hours.)

377B. Fundamentals of Physical Chemistry (3) S Baine, Becker, Devore,
Hunt, Senozan, Stern
Prerequisite: Chemistry 377A or 371A, each with a grade of C or better. The second semester of a two-semester sequence. Principles of physical chemistry with emphasis on molecular structure and spectroscopy. (Lecture 3 hours.

## 385. Computer Methods in Chemistry (2) S Baine, Devore

Prerequisites: Chemistry 111B with a grade of C or better, Mathematics 224, Physics 152. Beginning Fortran programming applied to typical problems in chemical engineering and chemistry. (Lecture 1 hour, laboratory 3 hours.) Not open to students with credit in Chemical Engineering 305.

## *421. Physical Organic Chemistry (3) F Goldish, Harris, Henderson, Jensen,

 Loeschen, Maricich, MarsPrerequisites: Chemistry 321B or 322 with a grade of $C$ or better or pass the Organic entrance exam and 371B or 377B (may be taken concurrently). Theoretical interpretations of the chemical and physical properties of organic compounds including the following: mathematical derivations of rate equations from experimental results, calculations of reaction rate constants from experimenta data, quantitative comparison of the reactivities of organic compounds mathematical correlations of structure and properties. Practice in solving problems relating reaction mechanisms to the factors derived above.
*422. Identification of Organic Compounds (3) S Goldish, Harris,
Henderson, Jensen, Loeschen, Maricich, Marsi
Prerequisites: Chemistry 251 and 321 B , all with a grade of C or better, or pass the Organic entrance exam. Characterization of organic compounds through study of their chemical and physical properties. (Lecture 1 hour, laboratory 6 hours.)
*431. Advanced Inorganic Chemistry (3) F Hunt, Po, Tharp
Prerequisite: Chemistry 371A with a grade of C or better and Chemistry 371B (may be taken concurrently). Detailed quantitative study of chemical bonding in inorganic molecules with emphasis on molecular orbital theory. Extensive coverage of transition metal chemistry including coordination chemistry, ligand field theory, application of spectroscopy to structural analysis of inorganic molecules and a review of properties and reactivities of the elements and their compounds.

## *441A. Biological Chemistry (3) F,S Berry, Cohlberg, Dunne, Perlgut,

 Simonsen, WynstonPrerequisites: Chemistry 111B, 321B or 322 (may be taken concurrently) or Chemistry 327, all with a grade of $C$ or better. A biology or microbiology course is recommended. The first semester of a two-semester sequence (Chemistry 441A and 441 B ) in biochemistry. A chemical and mathematical treatment of the energetics and kinetics of reactions in living systems, including the chemistry and metabolism of carbohydrates and lipids. (Lecture 3 hours.)

## *441B. Biological Chemistry (3) F, S Berry, Cohlberg, Dunne, Perlgut,

 Simonsen, WynstonPrerequisite: Chemistry 441A with a grade of C or better. The second semester of a two-semester sequence (Chemistry 441A and 441B) in biochemistry. Structure, function and metabolism of proteins and nucleic acids and other advanced topics in metabolism. (Lecture 3 hours.)

## *443. Biological Chemistry Laboratory <br> (3) F,S Cohlberg, Dunne, Perlgut, Wynston

Prerequisites: Chemistry 251 and 441 B (which may be taken concurrently), all with a grade of C or better. Laboratory techniques used in biochemical research. (Lecture 1 hour, laboratory 6 hours.)
447. Clinical Chemistry (3) F,S Berry, Wynston

Prerequisites: Chemistry 251 and either 448M or 441A and 441B (the latter may be taken concurrently). Methods of analysis and chemical properties of blood, urine and other biological materials. Required in medical technology curriculum; not available for credit to majors in the physical sciences. (Lecture 1 hour, laboratory 6 hours.)
448. Fundamentals of Biological Chemistry (3) F,S Berry, Dunne, Cohlberg, Perlgut, Simonsen, Wynston
Prerequisite: Chemistry 327 with a grade of $C$ or better. Major principles of biochemistry including metabolic processes, biological control and regulatory processes, nutrition and chemical energetics and kinetics of animals, plants and microorganisms. Emphasis on major concepts and problem solving. Not open to chemistry majors. (Lecture 3 hours.)

448M. Fundamentals of Biological Chemistry for Medical Microbiologists
(3) F,S Berry, Dunne, Cohlberg, Perlgut, Simonsen, Wynston

Prerequisite: Chemistry 327 with a grade of C or better. Similar to Chemistry 448 with special emphasis on topics related to clinical chemistry. Open to medical microbiology majors only; other students admitted only by consent of instructor.

## 449. Nutritional Biochemistry Laboratory (3) F,S Faculty

Prerequisite: Chemistry 448 with a grade of $C$ or better. Analytical and biochemical analyses of foodstuffs and other compounds of biochemical interest (Lecture 1 hour, laboratory 6 hours.)
*451. Instrumental Methods of Analysis (4) F, S Kalbus, Lieu
Prerequisites: Chemistry 251 and 371A or 377, all with a grade of C or better, or consent of instructor. Theory and application of instrumental methods to chemica problems. Techniques covered include the following: atomic and molecular absorption and emission, electroanalytical chemistry, techniques of separations, mass spectroscopy, magnetic resonance and other modern methods of analysis (Lecture 2 hours, laboratory 6 hours.)
461. Scientific Glass Blowing (1) F,S Faculty

Demonstrations and practice in elementary laboratory glass manipulation. Open only to natural science majors. Offered only on credit/no credit basis. May be repeated once for credit, but not more than one unit is applicable towards the B.S degree in Chemistry. (Laboratory 3 hours.)

## *471. Chemical Thermodynamics (3) F Baine, Becker, Devore, Senozan,

 SternPrerequisites: Chemistry 371A with a grade of $C$ or better and consent of instructor. Mathematical derivation and quantitative application of thermodynamic relationships of particular importance in all fields of chemistry with extensive problem solving to show the application of these relationships. (Lecture 3 hours.)
*472. Advanced Physical Chemistry (3) S Baine, Becker, Devore, Senozan, Stern
Prerequisite: Chemistry 371 B with a grade of C or better. Topics in physical chemistry, including quantum chemistry and spectroscopy. The mathematical method required by these topics is used to calculate exact solutions to various physiochemical problems.

## 496. Special Problems in Chemistry (1-3) F,S Faculty

Prerequisite: Consent of instructor. Problems selected for considered and mature analysis. May be repeated to a maximum of six units .

## 499. Directed Reading (1) F,S Faculty

Prerequisite: Concurrent enrollment in Chemistry 491. Thorough survey of the chemical literature on some topic of current interest under the supervision of a faculty member. Preparation of a written report based on this reading. Not open to graduate students

## Graduate Division

522. Special Topics in Organic Chemistry (3) $S$ Faculty

Prerequisite: Chemistry 421 or consent of instructor. Areas of current interest in organic chemistry. Normally two of the following topics are treated. May be repeated with different topics to a maximum of six units.
Natural Products: Structure, biological activity, biogenesis and synthesis of selected naturally occurring compounds
Organic Synthesis: Modern synthetic reactions as demonstrated in recent synthesis of molecules of biological or theoretical interest.

Organophosphorus Chemistry: Nomenclature, synthesis and reactivity of phosphorus-containing organic compounds. Emphasis is placed upon mechanisms of reactions of such compounds. Some discussion of the biochemistry or organophosphorus compounds will be given.
Photochemistry: The effects of light absorbtion by organic compounds. Involves a study of the types and mechanisms of reactions, energy transfer, fluorescence and phosphorescence.
Kinetics and Mechanism: A survey of methods of elucidation of reaction mechanisms. Theory and application of kinetics, isotope effects, acidity functions, catalysis and linear free energy relationships may be included as related to molecular rearrangements, hydrolyses, hydration reactions and intramolecular catalysis.
Bioorganic Mechanisms: The application of mechanistic organic chemistry to the mechanism of action of biological compounds. Emphasis may center on drug action or enzyme catalysis.
Stereochemistry: Molecular configurations, conformations and stereochemical effects in the organic reactions of carbon and heteroatom compounds.
Reactive Intermediates: Organic chemistry of reactive intermediates such as carbenes, nitrenes and free radicals.
531. Advances in Inorganic Chemistry (3) S, alternate years Faculty

Prerequisite: Chemistry 431 or consent of instructor. Current topics and advances in inorganic chemistry. May be repeated with different topics to a maximum of six units.
Metallo-organic Chemistry: Complexes of transition metals in low oxidation states emphasizing structure of complexes and bonding, reaction types and homogeneous catalysis.
Physical Methods of Inorganic Chemistry: A brief survey of the basic theoretical principles of the quantum mechanics of bonding, followed by an intensive discussion of modern physical techniques. Application of most physical methods to selected inorganic compounds will be discussed.
Mechanisms of Inorganic Reactions: Inorganic reactions in aqueous solution, emphasizing the substitution mechanisms of octahedral complexes, types of electron-transfer reactions of complexes, application of Marcus-Hush theory and catalysis by transition metal complexes.
Boranes and Boron Chemistry: Synthesis, structure, reactivity and new bonding concepts in boranes and boron compounds.
541. Biochemistry of Macromolecules (3) F, alternate years Wynston

Prerequisite: Chemistry 441 B or consent of instructor. Studies of the chemical, physical and biological structures and functions of proteins, nucleic acids and other biopolymers.
542. Special Topics in Biochemistry (3) S, alternate years Faculty

Prerequisite: Chemistry 441 B or consent of instructor. A detailed intensive discussion of a limited aspect of biochemistry with reference to current literature. Course content will vary from year to year. May be repeated for credit with consent of instructor.
544. Physical Biochemistry (3) F, alternate years Cohlberg

Prerequisites: Either Chemistry 371B, 372 or 377 B , or consent of instructor and Chemistry 441B. Physical chemistry aspects of protein and nucleic acid chemistry and related analytical methods.
545. Enzymology (3) S, alternate years Dunne

Prerequisites: Chemistry 371A and 441B, or consent of instructor. Detailed study of the mechanisms and kinetics of enzyme-catalyzed reactions and mechanisms of enzyme regulation.
546. Clinical Biochemistry (3) For S Berry

Prerequisite: Chemistry 441B. Chemistry and methodology of clinically important analyses of biological fluids.

## 552. Special Topics in Analytical Chemistry (3) F, alternate years Faculty

Prerequisite: Chemistry 451 or consent of instructor. Selected topics including electrochemical measurements, chromatographic techniques, spectroscopic techniques (molecular and atomic absorption and emission), radiochemical analysis and basic electronic components of instrumentation. Emphasis will be placed on an in-depth understanding of the chemical principles involved, along with the utility and limitations of each method. Other topics include trace analysis by electrochemical methods and instrumental analysis of water and air pollution control.
571. Advanced Thermodynamics (3) S Faculty

Prerequisite: Chemistry 471. Continuation of Chemistry 471 to include statistical and solution thermodynamics.
572. Advanced Physical Chemistry (3) S Faculty

Prerequisite: Chemistry 371B or consent of instructor. Special topics in physical chemistry. May be repeated with different topics to a maximum of six units.
Group Theory: Group theory and its application in chemistry. Topics covered will include hybridization, molecular orbital theory, crystal and ligand field theories and molecular vibrations.
Spectroscopy and Molecular Structure: The use of spectroscopic methods to elucidate molecular structure. Topics covered will include microwave, infrared, visible, ultraviolet, Raman, nuclear magnetic resonance, electron spin resonance, nuclear quadrupole and Mössbauer spectroscopy.
Dynamics of Chemical Reactions: Review of phenomenological kinetics equations; methods of elucidating complex photochemical and thermal gas phase reaction mechanisms; theoretical approaches to physicochemical reactions including the RRKM method and quantum mechanical scattering; applications of kinetics to the various fields of chemistry.

595A. Colloquium in Biochemistry (1) F,S Faculty
595B. Colloquium in Organic Chemistry (1) F,S Faculty
595C. Colloquium in Analytical, Physical and Inorganic Chemistry (1) F,S Faculty
Prerequisite: Graduate standing or consent of instructor. Discussion of advances in chemistry as reported in recent literature. Designed to give experience in library use, organization and presentation and critical evaluation of the chemical literature. May be repeated for credit, but not more than a total of three units may be earned in any combination of 595 courses.
691. Directed Reading (1) F,S Faculty

Survey of the information in chemical literature on a current research topic, under the direction of a faculty member. Preparation of a written report based on this reading
695. Seminar in Chemistry (1) F,S Faculty

Weekly meetings for presentation and discussion of advanced work in special fields including original research by faculty and graduate students.
697. Directed Research (1-3) F,S Faculty

Prerequisite: Arrangement with instructor. Laboratory work supervised on an individual basis. May be repeated for credit.
698. Research and Thesis (1-6) F,S Faculty

Prerequisite: Arrangement with instructor. Chemical laboratory investigations to be terminated by a thesis.

# Communicative Disorders 

## 

## Department Chair: Dr. Bruce Ryan.

Professors:Cooper Ryan, J Thompson Yates
Associate Professors: Beattie, Craven, Warren
Undergraduate Adviser: Dr.J.J. Thompson.
Graduate Adviser: Dr. Duane C. Craven.

The Communicative Disorders Department provides specialized course work for students planning careers in speech pathology or audiology. Departmental majors may complete work leading to bachelor of arts and/or master of arts degrees, as well as Certificates of Clinical Competence in either audiology or speech pathology from the American Speech and Hearing Association and the requirements for licensure by the State of California. The graduate program has accreditation from the Education and Training Board of the American Speech and Hearing Association.

Students seeking special education credentials may enroll for required credential course work. Students in allied health fields and linguistic sciences will find courses to implem ent their regular majors

The department maintains a language, speech and hearing clinic to serve as a clinical and research laboratory on campus for both graduate and undergraduate students. This facility is supplemented by an off-campus branch clinic plus many nearby hospitals, rehabilitation agencies and nonprofit language/speech/hearing clinics.

Students who desire to specialize in audiology and those who wish to complete requirements for Certificates of Clinical Competence from the American Speech and Hearing Association should consult with a departmental adviser regarding additional course work necessary.

The Department of Communicative Disorders offers graduate study leading to the master of arts degree in communicative disorders with options in audiology and speech pathology. Students may focus their course work to meet the academic and clinic practicum requirements for licensure by the State of California and for the Certificate of Clinical Competence in Audiology, and/or Speech Pathology from the American Speech and Hearing Association.

Requirements for (1) the Specialist in Special Education-Communication Handicapped, (2) the Clinical-Rehabilitative Services-Language, Speech and Hearing Specialist, and (3) the Clinical-Rehabilitative Services-Audiologist may be completed in conjunction with the master's degree.

Students who are enrolled or planning to enroll in the graduate program may apply for the following financial assistance: foundation fellowships, U.S. Office of Education traineeships, clinic assistantships and clinic traineeships.

Students receiving any of these grants-in-aid are expected to devote a specified number of hours each week to clinical activities. Applications may be obtained a the department office or by writing to the department chair. Applications, with supportive materials, must be submitted by November 1 for the spring semester and April 1 for the fall semester.

## Major in Communicative Disorders

for the Bachelor of Arts Degree (code 2-6842)
Students desiring a bachelor's degree in communicative disorders must complete the following required courses:
Lower Division: Communicative Disorders 262 and one course from Speech Communication 246, 271.
Upper Division: Communicative Disorders 360, 361, 366, 371, 373, 480, 481, Speech Communication 447 and two courses from Communicative Disorders 431, 466, 474, 476.

## Admission to the Professional Program in Communicative Disorders

The professional program provides the academic and clinical course work necessary to complete degree, credentialing, licensing and ASHA certification requirements necessary for providing speech pathology or audiology services to the public. Students wishing to be admitted to this program must apply to the Department Admissions Committee. Therefore, the applications shall be evaluated by the following departmental criteria.

1. A grade point average of 2.75 or better in all previous college or university course work.
2. A series of tests to assess the applicant's ability in logical thinking and problem solving, writing, reading and speech proficiency.
3. Have transportation available for travel to off-campus clinical facilities.
4. A grade point average of 2.75 or better in Communicative Disorders 360, 361, 371, 373.
5. Submit transcripts and course descriptions of those communicative disorders courses which have been completed at other universities to the Department Admissions Committee. These transcripts are in addition to any which have been submitted to the University Admissions and Records Office.
Students meeting the minimum criteria will be placed in the group of students who will be selected for entrance into the professional program. If more students are available than positions in the program for students, selection will be made on a randomized choice basis.

Students who do not meet the criteria g.p.a. of 2.75 for item 4 may use a grade of B or better obtained in Communicative Disorders 366 to replace one criteria course in which the student has received at least a C grade.

Applications for admission to the professional program must be submitted by March 1 for admission by September 1 and October 1 for adm ission by January 15.

Students who are admitted to the professional program may enroll in Communicative Disorders 389. Upon successful completion of Communicative Disorders 389, the student may then enroll in Communicative Disorders 469, Clinical Practice. Communicative Disorders 389 and 469 units may be used as electives toward meeting B.A. graduation requirements.

## Credentials for Service in Public Education

Students who wish to complete credentials for service as language, speech and hearing specialists, educational audiologists or teachers of the severely oral language handicapped must be admitted to the professional program in communicative disorders.

## Clinical Rehabilitative Services-Language, Speech and Hearing Specialist

A. The following courses are required to complete the Clinical Rehabilitative Services-Language, Speech and Hearing Credential: Communicative Disorders 360, 361, 366, 371, 373, 389, 466, 476, 478, 480, 481, 564, 570, 572; Educational Psychology 350, 451, 464; Health Science 411.
B. Supervised Clinical Experience: Students must complete as many units of Comunicative Disorders 469, 479, 669, Educational Psychology 486A (5) to complete a minimum of 300 clock hours of supervised clinical experience with children. At least 100 hours of the supervised clinical experience must be completed in a school environment.
C. Optional: Special authorization to serve as a teacher of Severe Language Handicapped/Aphasic Children requires completion of Communicative Disorders 482A,B, and at least 100 hours of student teaching experience in a class for severe language handicapped children in addition to the completion of sections $A$ and $B$ in this section.

## Clinical Rehabilitative Services-Audiologist

A. The following courses are required to complete the Clinical Rehabilitative Services-Audiologist credential: Communicative Disorders 360, 361, 366, 371, $373,389,430,431,474,478,480,481,530,564,570,572,574$.
B. Supervised Clinical Experience: Students must complete as many units of Communicative Disorders $469,479,679$, to complete a minimum of 300 clock hours of supervised clinical experience with children. At least 100 hours of the supervised clinical experience must be completed in a school environment.

## Specialist in Special Education-Communication Handicapped

Students who wish to begin completing this credential must either:
A. Hold a valid teaching credential or complete a multiple-subjects or singlesubjects teaching credential in the School of Education.
B. In addition, the student must complete the following generic special education courses: Educational Psychology 350, 360, 451, 464; Health Science 411.
C. The following courses are required to complete the Communication Handicapped Specialist in Special Education Credential: Communicative Disorders 262, 360, 361, 366, 373, 389, 431, 466, 476, 478, 480, 481,564,570 572.
D. Supervised Clinical Experience: Students must complete as many units of Communicative Disorders 469, 479, 669, Educational Psychology 486A (10) to complete a minimum of 300 clinical clock hours of supervised experience with children. At least 100 hours of clinical experience and teaching children with communication handicaps must be in a school environment.

## Admission to the Graduate Program

Enrollment in 500/600 level courses in communicative disorders is restricted to students who have been admitted to the graduate program of the department. Students wishing to be admitted must complete the following procedures:

1. Students must meet the criteria for acceptance by the University as a graduate student.
2. Every student (new or continuing) must apply to the Office of Admissions and Records to obtain admission to the University with graduate standing.
3. Every student then must apply to the Department of Communicative Disorders for admission to the graduate program using the department application form. This form must be filed with the departm ent chair by March
1 for the following fall semester and by October 1 for the following spring semester. The following supportive materials must be filed with the department admission application:
a. Change of objective form (available at department office).
b. Transcripts of all upper division and graduate work completed. These transcripts are in addition to those required by the Office of Admissions and Records.
(1) Students must have maintained a GPA of 3.0 or better in the last 60 units attempted prior to date of application.
(2) Students must have maintained a GPA of 3.0 or better in the major field and 3.0 or better in all clinical practicum courses attempted.
(3) Students approved for admission during the last semester of their senior year must confirm an acceptable grade point average during their final semester to receive unqualified admission to the department graduate program
c. Results of Miller Analogies Test (MAT). Students must achieve an appropriate test level score to merit acceptance into the graduate program.
d. Three letters of recommendation from academic personnel or individuals who have knowledge of the applicant's perform ance in settings requiring close interpersonal relationships in health and education related areas These recommendations should bear upon the student's potential as a graduate student in communicative disorders.
4. Any deficiencies will be determined by the department graduate committee after consultation with the student and the student's faculty adviser and study of transcript records. This includes demonstration, through a series of tests, of the applicant's abilities in logical thinking and problem solving, writing, reading and speech proficiency
5. Student will have completed one of the two prerequisites listed below

Master of Arts Degree with a Major in Communicative Disorders (code 5-6842)

## Prerequisites

1. A bachelor's degree from an accredited institution with a major in communicative disorders (speech pathology and/or audiology), or:
2. A bachelor's degree from an accredited institution with at least 24 units of upper division work in communicative disorders (speech pathology and/or audiology), including courses comparable to those required of majors in the Department of Communicative Disorders at this University

## Advancement to Candidacy

1. Acceptance as an approved major in the department graduate program. See "Admission to Graduate Program.
2. Removal of all undergraduate deficiencies.
3. Earned 3.0 grade point average (a) in graduate work in communicative disorders, (b) n all graduate work completed at this University, (c) in all graduate work transferred to meet degree requirements.
4. Completion of Communicative Disorders 696.
5. Filing of the departmental application for advancement to candidacy. Student must obtain permission of the department graduate committee to write a thesis or to take a comprehensive examination in partial fulfillment of the master's degree program. Forms are available at the department office.
6. Acceptance by the Dean of Graduate Studies of a program of graduate courses approved by the student's department adviser, department graduate committee and the department chair.

## Requirements for the Master of Arts

Students must elect one of two available options: audiology or speech pathology. Both options require a minimum of 30 units of upper division and graduate coursework approved by the student's department graduate adviser, including:

1. Fifteen units of $500 / 600$ level courses which must include:
a. Communicative Disorders 696 (both options) to be completed during the student's first semester of graduate study
b. One to three units of Communicative Disorders 697 (both options) or four units of 698 (both options).
c. One to a maximum of three units of Communicative Disorders 669 (speech pathology option) or 679 (audiology option).
d. A minimum of two seminars: Communicative Disorders 662 and 663 (speech pathology option) or 674 repeated once with different instructor (audiology option)
e. Sufficient additional units of $500 / 600$ level courses in Communicative Disorders to support selected option
2. Nine units of acceptable upper division or graduate courses in communicative disorders.
3. Six units of acceptable electives in any discipline, selected in consultation with the adviser. Student teaching, special methods courses and 300-leve courses may not apply.
4. A thesis or comprehensive written examination. Department graduate committee approval is required to elect either thesis or comprehensive examination.
5. A final oral examination which includes defense of the thesis or the comprehensive written examination and is administered by the candidate' committee.

## Lower Division

60. Speech Improvement (1) F,S Faculty

For students with speech defects that are not amenable to correction in other speech courses. May be repeated for credit to a maximum of two units.

## 262. Psychology of Communicative Disorders (3) $S$ Craven, Thompson, Yates

Psychological aspects of communicative disorders and their implications for the speech and hearing pathologist.

## Upper Division

360. Voice Science (3) F Craven

Speech process as an organic and acoustic phenomenon. Anatomy, physiology neurology and acoustics of speech and voice. Design for students planning to enter the clinical program in communicative disorders
361. Language and Speech in Normal and Exceptional Children (3) F,S Yates Examination of language development as learned and as psychodynamic behavior. Procedures for differential diagnosis and remediation.

## 366. Speech Pathology I: Introduction and Disorders of

## Articulation (4) S Craven, Ryan, Thompson

Prerequisites: C.D. 361,371. Introduction to historical and interpersonal features of human communicative dysfunctions. Survey of major communicative disorders Etiology, assessment and therapy for disorders of articulation.

## 371. Phonetics (3) F Ryan

Phonetic basis of speech sounds and the various factors which influence pronunciation. Consideration is given to linguistic variations, regional dialects and standards.

## 373. Principles of Audiometry I (3) F, S Beattie, Warren

Anatomy and physiology of the hearing mechanism; administration and interpretation of audiometric and testing results, organization of hearing conservation programs. Designed for students planning to enter the clinical program in communicative disorders.

## 385. Coping with Communication Problems of the Aging (3) $F$ Thompson,

 WarrenPhysical, physiological, environmental and emotional factors of aging which affect the hearing and speaking processes; procedures for improving communication skills of the aged; techniques for reestablishing and maintaining mmunications with elderly persons who have severe hearing, language or speech deficits. Not open to students with credit in Communicative Disorders 485.
389. Clinical Methods: Introduction and Observation (3) F,S Faculty

Prerequisite: Admission to professional program. Introduction to the nature of programming for therapy. Focus on operant procedures, data collection, charting parent counseling; clinician-client relationships. Videotapes; observation. (Lecture 2 hours, laboratory 3 hours.)
*430. Hearing Science (3) F Beattie
Prerequisite: C.D. 373. Provides an understanding of how the normal hearing observer responds to selected acoustic signals. Parameters include dB notation, physics of sound, difference limens, temporal phenomena, binaural hearing, masking and adaptation.
*431. Pediatric Audiology (3) S Warren
Prerequisite: C.D. 373. Etiologic factors, assessment of auditory function, implications of impairment, selection of hearing aids, remedial programs, counseling parents-emphasis on hard-of-hearing infants and children. (Lecture 2 hours, laboratory 3 hours.)
*466. Speech Pathology II: Stuttering (3) F Craven, Thompson
Prerequisite: C.D. 366. Etiology, evaluation and therapy for stuttering, cluttering and other disorders of rhythm
*469. Clinical Practice in Speech Disorders (2-6) F, S Faculty
Prerequisites: C.D. 389 and consent of instructor. Student conducts individual and group speech therapy under clinical supervision. Forty-five hours required for each unit. May be repeated for credit to a maximum of six units.

## 474. Audiometry If (3) F Beattie, Warren

Prerequisite: C.D. 373. Advanced audiometry; refined techniques in speech audiometry, use of masking, objective and automatic audiometry; differential diagnosis in audiology.
*476. Speech Pathology III: Disorders of Voice (3) S Faculty
Prerequisites: C.D. 360, 366. Etiology, diagnosis and therapy of functional and organic voice disorders related to vacal abuse, neurological impairment, auditory impairment, oro-facial abnormalities and laryngeal carcinoma.
*478. Language and Speech of the Culturally Different (3) F,S Faculty Linguistic-cultural differences in relation to the language and speech development of minority children; dialectal and language style differences and their clinical and educational implications.
*479. Clinical Practice in Hearing Disorders (2-6) F,S Beattie, Warren
Prerequisites: C.D. 373, 480 and consent of instructor. Student conducts individual and group hearing therapy under clinical supervision. Forty-five clock hours required for each unit. May be repeated for credit to a maximum of six units.
*480. Hearing Pathology I (3) S Beattie, Warren
Prerequisite: C.D. 373. Introduction to hearing pathology, etiology of hearing impairment. Principles of acoustics, auditory training and audiological research. Visual communication, speech and language development of the deaf.
*481. Speech Pathology IV: Disorders of Language (4) F Yates
Prerequisites: C.D. 360, 366. Etiology, assessment and therapy for disorders of language in children and adults
*482A. Teaching the Severe Language Handicapped/Aphasic Child (3) F Faculty
Prerequisite: Completion of requirements for student teaching in Language, Speech and Hearing. Designed for SLH/A teachers to provide preparation for utilizing assessment information and specialized teaching strategies. The course explores both conditioning techniques and cognitive discovery experiences necessary for both behavioral management and cognitive learning experiences in social science, language arts, mathematics and reading. (Lecture 2 hours, laboratory 3 hours.)

## 482B. Teaching the Severe Language Handicapped/Aphasic

Child (3) S Faculty
Prerequisite: C.D. 482A. Designed to provide SLH/A teacher candidates expanded knowledge and experience in specialized assessment, reading, language, writing spelling, social science and mathematics teaching skills for the SLH/A child (Lecture 2 hours, laboratory 3 hours.)
490. Special Studies in Communicative Disorders (1-3) F,S Faculty

Open only to communicative disorders majors with senior or graduate standing and consent of department chairperson. Individualized laboratory or library research selected in consultation with instructor. Written report of the research is required. Not acceptable for graduate credit toward the master's degree. May be repeated to a maximum of six units.
499. Directed Studies in Communicative Disorders (1-3) F,S Faculty

Prerequisite: Consent of instructor. Independent study under supervision of a faculty member. May be repeated for a maximum of six units. Not acceptable for graduate credit toward the master's degree.

## Graduate Division

530. Audiological Instrumentation (3) F Beattie

Prerequisites: Communicative Disorders 373,430 or consent of instructor. Use of instrumentation commonly used in audiology, such as the sound level meter electronic counter-timer, multi-meter, oscilloscope, filters, mixer, impedence audiometer, psychogalvanometer, hearing aid test box and Grason-Stadler 1200 system. (Lecture 1 hour, laboratory 6 hours.)
564. Parent Counseling in Communicative Disorders (3) F,S Faculty

Prerequisite: Communicative Disorders 469 (two units) and admission to department graduate program. Techniques used in counseling and interviewing parents, emphasizing problems presented by speech and language handicapped children.
570. Organization and Administration of Speech and Hearing Services (2) F,S Thompson
Prerequisite: Admission to department graduate program. Organization and administration of public school and community programs for those with communicative disorders. Role of speech and hearing specialists; relation of their services to total education program. Services available from related fields.
572. Diagnosis of Communicative Disorders (3) F,S Craven, Yates

Prerequisites: Communicative Disorders 469 (two units) and admission to department graduate program; corequisite: Communicative Disorders 669 (one unit). Differential diagnostic procedures in speech and language disorders. (Lecture 2 hours, diagnostic clinic 3 hours.)
574. Hearing Aids (3) $S$ Beattie

Prerequisites: Communicative Disorders 373 or 431,474 . Role of the hearing aid in auditory rehabilitation, hearing aid circuitry and assessment, types of hearing aids, response characteristics; hearing aid selection and evaluation.
662. Seminar in Language Pathology (3) F,S Thompson, Yates

Prerequisite: Communicative Disorders 696 or consent of Department Admissions Committee. Selected problems in language pathology through an investigation of the literature and clinical research. May be repeated once for credit.
663. Seminar in Speech Pathology (3) F,S Craven, Ryan, Thompson

Prerequisite: Communicative Disorders 696 or consent of Department Admissions Committee. Selected problems in speech pathology through an investigation of the literature and clinical research. May be repeated once for credit.
669. Advanced Clinical Practice in Speech Pathology (1-6) F,S Faculty

Prerequisites: Communicative Disorders 469 (2 units), or consent of instructor. Student conducts therapy sessions under supervision for persons with more complex speech disorders. Student handles all aspects of clinical program including initial interviews, parent counseling, and testing. May be repeated for credit to a maximum of six units.
674. Seminar in Audiology (3) S Beattie, Warren

Prerequisites: Communicative Disorders 696 or consent of Department Admissions Committee. Selected problems in audiology and hearing conservation approached through an investigation of literature and clinical research. May be repeated once for credit.
679. Advanced Clinical Practice in Audiology (1-6) F,S Beattie, Warren

Prerequisite: Communicative Disorders 479 (2 units) or consent of instructor Student conducts evaluation and rehabilitative sessions under supervision with persons with more complex hearing disorders. Student handles all aspects of the audiologic program including evaluation consultation, program planning and execution. May be repeated for credit to a maximum of six units. (Formerly Speech Communication 679.)

## 696. Research Methods (3) F,S Beattie, Ryan,Thompson

Prerequisite: Background or knowledge in statistical course work and/or consent of instructor. Problems, procedures, methods of a descriptive, historical and empirical nature as utilized in communicative disorders research
697. Directed Research (1-3) F,S Faculty

Prerequisite: Communicative Disorders 696 or consent of Department Graduate Committee.Required of all candidates for the master's degree not electing the thesis option.

## 698. Thesis (1-4) F,S Faculty

Prerequisites: Advancement to candidacy for master's degree and consent of the Department Graduate Committee. Preparation, completion and submission of an acceptable thesis in partial fulfillment of the requirements for the master's degree.

## Comparative Literature

Department Chair: Dr. Thomas Hubble
Professors: Carr, Hubble, Markman.

## Associate Professors: Bush, Jernigan.

## Undergraduate Adviser: Dr. Thomas Hubble

The goal of a comparative literature major is a broad, liberal education based on a comparative study of the world's great literatures in translation and on the relationship of those literatures to history, philosophy, language, the fine arts, and creative writing

The bachelor's degree in comparative literature is designed to provide a basis for the following areas of professional specialization: (1) graduate study in comparative literature, English, foreign languages and other related areas; (2) teaching of literature, folklore and mythology, and foreign language; (3) government work, international relations, and business administration, particularly those areas of government and business work which require an extensive knowledge of foreign cultures and the ability to communicate well, both in English and in a foreign language.

Major in Comparative Literature for the Bachelor of Arts Degree (code 2-6832)

## Option I

51 units to be distributed as follows:
Comparative Literature: 24 units (at least 18 of which must be upper division) selected from courses within the Comparative Literature Department. English 398 and 431 may be used to partially satisfy this requirement. No more than nine units in comparative literature/theatre arts courses may be used to satisfy this requirement without special consent of the department
Primary Concentration: 15 upper division units from any one of the following: English, English/creative writing, foreign language, philosophy, religious studies, music history, art history, history, or theatre arts. (If this concentration is English or foreign language, 12 of these units must be in literature. If the concentration is English/creative writing, 12 units of creative writing will be permitted, with the remaining units in literature. If the concentration is theatre/drama, courses in dramatic literature may be chosen from English theatre arts, foreign languages or comparative literature/theatre arts courses.)
Secondary Concentration: 12 upper division units (nine of which must be in literature) in one foreign language. In the case of languages offering a limited number of courses, the equivalent of four semesters of college study will
suffice. If a foreign language has been chosen for the prim ary concentration, the student may elect the secondary concentration in English, English/creative writing, another foreign language, philosophy, religious studies, music history, art history, history, or theatre arts (nine units of which must be in comparative literature/theatre arts).

## Option II: World Literature

This option is primarily designed for the student who wants a broad background in world literature in translation allied with a strong concentration in one specific field.

This option is also designed for the student who elects the program approved for the single subject credential in English as the concentration to satisfy the requirements for the single subject credential under the Ryan Act. Department advisement is necessary.

48 units to be distributed as follows:
Comparative Literature: 24 units (at least 18 of which must be upper division) selected from courses within the Comparative Literature Department. English 398 and 431 may be used to partially satisfy this requirement. No more than nine units in comparative literature/theatre arts courses may be used to satisfy this requirement without special consent of the department.
Concentration: 24 upper division units from any one of the following: English, English/creative writing, foreign language, philosophy, religious studies, music history, art history, history or theatre arts. (If the concentration is English/creative writing, 12 units of creative writing will be permitted, with the remainder in literature. If the concentration is theatre/drama, courses in dramatic literature may be chosen from English, theatre arts, foreign languages or comparative literature/theatre arts courses.)
Foreign Language Examination: A basic reading examination in a foreign language will be administered to test a student's reading proficiency. Four semesters of college study of a foreign language (or equivalent) may be used in lieu of an examination.

## Option III: Interdisciplinary Studies

This option is designed to allow the student, with the aid of a faculty committee, to create an interdisciplinary program of study founded in literature.

48 units to be distributed as follows:
Comparative Literature: 24 units (at least 18 of which must be upper division) selected from courses within the Comparative Literature Department.
Concentration: 24 upper division units to be arranged in an interdisciplinary pattern by the student in cooperation with a faculty committee. It will be the responsibility of the faculty committee to be sure that the student's program is academically defensible. The committee will be chosen by the student and will consist of two full-time professors in comparative literature and one full-time professor from another discipline. The student's program must be established by the end of the first semester of the junior year. All students wishing to participate in this option must receive permission from the department chairperson before beginning the program.

## Minor in Comparative Literature (code 0-6832)

In addition to the bachelor of arts degree in comparative literature, the department offers a minor in comparative literature. The minor provides a flexible program for the student majoring in another discipline, but who is interested in comparative literature either for professional advantages or for intellectual enrichment.

## Requirements for the Minor in Comparative Literature:

A minimum of 18 units in comparative literature, of which at least 12 are selected from any of the department's upper division offerings excluding Comparative
Literature 499 .

## Lower Division

## 124. Introduction to World Theatre and Drama Jernigan, Markman <br> (3) F,S Bush, Carr, Hubble,

Introduction to all aspects of theatre, including criticism, dramatic literature, movements, themes, historical background and theatrical production from different parts of the world. (Same course as Theatre Arts 124.)

## 230. Introduction to World Literature (3) F, S Bush, Carr, H ubble, Jernigan, Markman

Readings in translation from masterpieces of world literature with emphasis on the technique and form of literary art as developed in various cultures.
232. Folklore and Mythology (3) F,S Bush, Carr, Hubble, Jernigan, Markman Introduction to mythology and folklore, with emphasis on myths of Eastern and Western civilization and their application in literature.
234. Introduction to Asian Literature (3) S Carr

Representative selections, in translation, from literature of the Near East, India China and Japan. Not open to students with credit in Comparative Literature 439.

## 250. Literature and the Other Arts (3) F,S Bush, Carr, Hubble, Jernigan, Markman

Investigation of the interrelationships between the arts. Analysis of literary, fine art and music materials from ancient periods to the present in regard to movements, techniques, philosophies and formal organization to achieve artistic expression. Field experience and interviews with local artists.

## Upper Division

## 324. World Theatre Today (3) S Bush, Carr, Hubble, Jernigan, Markman

Current trends, problems and achievements of the theatre of the present day from an international point of view with an examination of influences of the avantgarde movements of post World War I (Expressionism, Dada, Surrealism, the Absurd, Existentialism). (Same course as Theatre Arts 324.)
325. Asian Theatre and Drama (3) F Carr

History and background of Asian theatre; style of execution and production; influence of Asian theatre on Europe and America; emphasis on India, China and Japan. (Same course as Theatre Arts 325.)

## 330A,B. Survey of European Literature (3,3) F,S Bush, Carr, H ubble, Jernigan, Markman

Representative selections, in translation, from European writers to and since 1600, in relation to the development of Western civilization.

## 342. The Bible as Literature (3) $S$ Jernigan, Markman

Reading of representative Biblical selections evaluated by literary criteria.

## 346. Readings in World Poetry (3) F Bush

Representative selections, in translation, from the poetry of the world, from the earliest examples to the present.
349. Literary Movements (3) F Bush, Carr, Hubble, Jernigan, Markman Intensive study of a movement or theme in world literature. Specific movement or theme will be announced in the Schedule of Classes. (May be repeated for credit to a maximum of nine units by consent of instructor.)

## 402. Modern Folklore (3) F, S Carr

Origin and development of folk tradition from rural society to the modern city, with special emphasis on the folk arts and their development in the mass media.
403. Studies in Asian Literature (3) S Carr

Interrelationships of two or more authors, themes, genres, movements or aspects of literature and culture in Asia or between Asia and the West. Topics to be announced in the Schedule of Classes. May be repeated for credit, on different topics, for a maximum of nine units

## 404. Women in World Literature (3) F,S Markman

Intensive study of the relationship of women and world literature. Specific movement, area or theme will be announced in the Schedule of Classes. May be repeated for credit to a maximum of six units with different topics. Open to all qualified $m$ en and women.
410. Comparison of the Arts (3) F,S Bush,Carr, Hubble, Jernigan, Markman Comparison of the history and theory of literature, art, and music. Primary emphasis on technique analysis, genre study, influences from one medium to another and cultural trends. May be repeated with different topics up to nine units. Topics to be announced in the Schedule of Classes.
421. Classical Drama (3) F Hubble, Jernigan, Markman

Greek and Roman drama, in translation. (Same course as Theatre Arts 421. Formerly Com parative Literature 332.)

## 422. Renaissance Theatre and Drama (3) F Jernigan, Markman

Prerequisites: Two courses in literature or theatre arts or consent of instructor. Achievements, problems, trends of Renaissance theatre and drama in Spain, France, Italy and England. (Same course as Theatre Arts 422.)

## 428. Selected Periods in Theatre and Drama (3) S Bush, Carr, Hubble, Jernigan, Markman

Prerequisites: Two courses in literature or theatre arts or consent of instructor. Study of special movements and periods in the history of drama and theatre, to be selected each sem ester. (Same course as Theatre Arts 428.)

## 430. Dante (3) F, 1980 and alternate years Jernigan

In-depth study of the major work of Dante-the Vita Nuova, the lyric poetry and the Divine Comedy in translation. Examination is also given to the influence of Dante on later writers.

## 431. Medieval Literature (3) $S$ Jernigan

Representative selections, in translation, from writings of the medieval period, reflecting dominant ideas of the time.
432. Continental Renaissance Literature (3) $F$ Jernigan

Major themes, authors and works of Renaissance Europe.
438. Twentieth Century European Literature (3) S Hubble

European literature, in translation, from about 1900 to the present.

## 440. Latin American Literary Studies (3) F,S Bush

Special topics in Latin American literature. The topic for the semester will be announced in the Schedule of Classes. May be repeated with different topics up to nine units.
445. American Folklore Studies (3) F,S Carr

Special topics in American folklore. Topics are chosen to provide a bridge between literary, aesthetic and specialized folkloristic studies of American culture. Special attention will be paid to European and Third World contributions to American folklore. Topics to be announced in the Schedule of Classes. May be repeated with different topics up to nine units.
449. Critical Studies in Major Continental Writers (3) S Bush, Carr, Hubble, Jernigan, Markman
Recommended for seniors in comparative literature, English and foreign languages. Intensive study of one to three major Continental authors. Authors to be studied will be announced in the Schedule of Classes. May be repeated for credit to a maximum of nine units by consent of instructor.
450. Comparative Studies (3) F Bush, Carr, Hubble, Jernigan, Markman

Interrelation of two or more disciplines, emphasizing reciprocal influences and borrowing of materials during various literary periods. The class will feature a different interdisciplinary study each semester, to be announced in the Schedule of Classes. May be repeated for a maximum of 12 units with consent of instructor.
451. The Novel and the Motion Picture in Contemporary Society (3) F Hubble Interdisciplinary study of two genres, with particular focus on novels made into films and on the aesthetic distinction of both forms as major genres in the 20th century.

## 452. Studies in Mythology (3) F, S Bush, Carr, H ubble, Markman

Interrelation of two or more mythologies, mythological themes or theories of mythology. This class will feature a different area of interdisciplinary or comparative nature in the study of mythology each semester, to be announced in the Schedule of Classes. May be repeated with different topics to a maximum of nine units. Consent of the department is necessary beyond six units.

499, Directed Studies (1-4) F, S Bush, Carr, H ubble, Jernigan, Markman
Prerequisite: Consent of instructor. Independent study of special topics under supervision of a faculty member. May be repeated for a maximum of six units with consent of department.

## Graduate Division

## 501. Advanced Interdisciplinary Study (3) F,S Hubble, Markman

Intensive study of the theories and methods of comparing and interrelating literature with other disciplines such as various areas among the fine arts, the social sciences and the sciences. Not open to students with credit in Comparative Literature 401.

## 502. Modern Folklore Research (3) F,S Carr

Intensive study of folklore research methods and techniques with particular emphasis on rural-to-urban changes in the modern city.
550. Topics in Comparative Literature (3) S Bush, Carr, Hubble, Jernigan, Markman
Prerequisite: Comparative Literature 501 or consent of instructor. Special studies of movements, figures and relationships in world literature; or between world literature and other disciplines. Topics to be announced in the Schedule of Classes. May be repeated to a maximum of nine units with different topics.

## Computer Studies in the Liberal Arts



Director: Dr. Glenn Walker.
CSULB offers four different computer science degrees. The particular degree program selected will depend on the student's academic interests and occupational goals. Each of these programs is briefly described below. For more information, see the explanation elsewhere in this catalog under the department indicated.

Computer courses at CSULB are taught by the following departments: Accountancy, Biology, Chemistry, Civil Engineering, Computer Studies, Economics, Electrical Engineering, Geography, Industrial Technology, Instructional Media, Management, Mathematics, Mechanical Engineering, Political Science, Psychology, Physics, and Quantitative Systems.
Business Computer Methods $\{$ B.S. in Business Administration

## Major in Business Computer Methods

This program leads toward computer-oriented careers in business, industry, education, and government. It provides a foundation for problem-solving and decision-making using the technology of the computer. This new option prepares the student for positions in a dynamically growing field in business. Major courses for the degree are: Comparative Analysis of Computer Languages,Administrative Information Systems, Business Computer Methods, Computer Application for Business Problems, and Computer Model Simulation. (See Quantitative Systems)
Computer Science and Engineering $\left\{\begin{array}{l}B . S . \text { in Engineering }\end{array}\right.$
ajor in Computer Science and Engineering
This program allows the student to acquire substantive competence in computer sciences and related fields. The program builds upon a strong base of mathematics, physics, and engineering science. It includes a core of standard electrical engineering courses as well as courses in digital systems and circuitry, programming languages and computer applications, plus electives in the student's particular interest area. (See Electrical Engineering)


This program is designed to prepare students for careers in the computer field or for graduate study in Computer Science and/or Mathematics. (See Mathematics)

Computer Science Special Major $\left\{\begin{array}{l}\text { Bachelor of Arts }\end{array}\right.$ Special Major-Computer Science

This program provides students an individualized course of study leading to a degree when legitimate academic and professional goals are not accommodated by standard degree majors. Consisting of correlated studies in two or more departments, the computer science special major has involved combinations of computer science and related courses from Computer Studies, Electrica Engineering, Industrial Technology, Instructional Media, Mathematics, Political Science, and Quantitative Systems. (See Special Major)

Students interested in the Computer Science Special Major should consult the Director of the Center for Computer Studies in SS/PA 207 for additional information.
200. Introduction to Data Analysis (3) F,S Black, Hubbard, Stevens, Walker A course for beginners in punching questionnaire responses and other data on cards, how to use the keypunch and sorter, analyzing data with the Statistical Package for the Social Sciences, the logic of scientific research, use of data banks and writing simple computer programs in BASIC on an interactive computer terminal.
210. Computer Statistics (3) F,S Hubbard

Prerequisite: Knowledge of mathematical procedures covered in elementary high school algebra. Use of on-line SPSS (Statistical Package for the Social Sciences) with statistical applications. Descriptive statistics; probability distributions; tests of hypotheses and estimation; contingency tables and their analysis; correlation and regression; non-parametric techniques. Not open to students with credit in Sociology 210. (Lecture 3 hours.)

## 273. Cobol Programming (3) F, S Seewerker

Prerequisite: A previous course in computing, such as Mathematics 270 or Quantitative Systems 240. Fundamentals of the computer programming language Cobol Data division, input and output file handling for tapes and disks. Computer assignments using Cobol. Same course as Mathematics 273.
321. Information Systems Using Cobol (4) F Faculty

Prerequisite: Mathematics 273 or Computer Information Science 273. Study of information systems based on Cobol. Review of basic Cobol programming and introduction to advanced features with emphasis on sophisticated file handling techniques and organization. Data base management systems. Several computer projects in the design and implementation of information systems. Same course as Mathematics 321. (Lecture 3 hours, problem session 2 hours.)

## Criminal Justice

Department Chair: Dr. Gary B. Adams.
Professors: Becker, Germann, Guthrie, Kenney, Whisenand
Associate Professors: Adams, Good, Grencik, Hails, Rush

## Assistant Professor: Vito

Undergraduate Adviser: Dr. George E. Rush.
Graduate Adviser: Dr. John P. Kenney.
Graduate Committee: Germann, Guthrie, Kenney, Rush, Vito.
The program in criminal justice offers the bachelor of science degree to the man or woman seeking a comprehensive education enroute to a professional career. The program is designed to accommodate the needs of the continuing student, the transfer student and the experienced criminal justice practitioner.

Four options are available: corrections, criminalistics, law enforcement and security administration.

## Note: Students Intending to Transfer from Community College

Students intending to transfer from community colleges to this University to continue work for a bachelor of science degree in criminal justice are advised to complete general education requirements while attending the community college.

A maximum of 24 units of lower division criminal justice (police science) courses are acceptable for transfer. Twelve units will be accepted for Criminal Justice 101, 151, 155 and 157 if equivalent subject matter work has been completed at a community college. It should be understood that these will not satisfy upper division major requirements.

## Note: Students Not Currently Employed in the Field.

Students hopeful of entering the criminal justice field should ascertain the requirements for any particular agency. Specific requirements and candidate screening are not available through the Criminal Justice Department.

Graduate study in criminal justice provides the opportunity for men and women to meet (1) the need for adequately prepared personnel to fill college and university positions in the broad field of criminal justice, (2) the need for highly skilled and broadly educated persons to engage in research, (3) the need for persons planning professional careers in the administration of criminal justice, and (4) the need for persons with advanced education to engage in the administration of programs of corrections, policing and security
The master of science degree in criminal justice will expand and increase individual competency, develop and mature thought processes, aid in gaining
insights into professional leadership and knowledge to assure leadership positions and permit an exchange of student-faculty ideas to further the spirit of research and scholarship to enhance professional and personal capabilities.
In addition to being admitted by the Office of Admissions and Records, applicants also must be accepted for admission by the Criminal Justice Department before their program for a master's degree can be formulated. The following factors are considered:

1. Scholastic achievement as represented by official transcripts of all college course work. Each applicant should request a copy of the official transcript be sent to the graduate adviser in the Criminal Justice Department in addition to the copies required by the Office of Admissions and Records.
2. Resume and statement of goals.
3. Three letters of recommendation.

## Major in Criminal Justice for the Bachelor of Science Degree

## Law Enforcement Option (code 3-1036)

Upper Division: Criminal Justice 301, 350, 403, 480, 495 (students currently working for a law enforcement agency will be required to substitute three units of Criminal Justice 490, Independent Study); six units selected from Criminal Justice 303, 315, 324, 376, 404, 481, 490, 499; nine units selected from Criminal Justice $325,361,421,422,482,485$; and completion of the following: Criminal Justice 351, 355, 357
Supporting Courses: Complete a minimum of 12 units of upper division social science courses (taken outside the Department of Criminal Justice) supporting major objectives. Courses are to be selected in consultation with a criminal justice adviser.

Corrections Option (code 3-1032)
Upper Division: Criminal Justice 301, 350, 403, 480, 495 (students currently working in a correctional setting will be required to substitute three units of Criminal Justice 490, Independent Study); nine units selected from Criminal Justice 303, 315, 324, 376, 404, 481, 490, 499; nine units selected from Criminal Justice 354, 358, 365, 383, 469, 470; and three additional units of Criminal Justice electives.
Supporting Courses: Complete a minimum of 12 units of upper division social science courses (taken outside the Department of Criminal Justice) supporting major objectives. Courses are to be selected in consultation with a criminal justice adviser.

## Criminalistics Option (code 3-1034)

Lower Division: Chemistry 111A-B, 251, 251L; Physics. 100A-B; Mathematics 115 S and one of the following: Biology 207, 212 or Microbiology 210.
Upper Division: Criminal Justice 301, 311, 312, 350, 355, 403, 411, 495 (students currently working in a criminalistics laboratory will be required to substitute three units of Criminal Justice 490, Independent Study); Chemistry 321A-B, 451.

## Security Administration Option (code 3-1038)

Upper Division: Criminal Justice 301, 331, 332, 350, 403, 431, 435, 480, 495 (students currently employed in the area of security administration will be required to substitute three units of Criminal Justice 490, Independent Study, for 495); six units selected from Criminal Justice 335, 336, 437; three units selected from Criminal Justice 325, 361, 421, 422, 482, 485, 490, 499; and three units selected from Criminal Justice 351, 355, 357.
Supporting Courses: Complete a minimum of 12 units of upper division social science courses (taken outside the Department of Criminal Justice) supporting major objectives. Courses are to be selected in consultation with a crimina justice adviser.

## Administration Option (code 3-1355)

Upper Division: Criminal Justice 301, 350, 403, 480, 495 (students currently employed in the area of administration will be required to substitute three units of Criminal Justice 490, Independent Study); nine units selected from Criminal Justice 303, 315, 324, 376, 404, 481, 490, 499; 12 units selected from Criminal Justice 325, 365, 421, 422, 482, 485.
Supporting Courses: Complete a minimum of 12 units of upper division social science courses (taken outside the Department of Criminal Justice) supporting major objectives. Other courses are to be selected in consultation with a criminal justice adviser.

## Minor in Criminal Justice (code 0-1013)

A minimum of 18 units which must include:
Upper Division: Criminal Justice 301, 350, 403, 404.
Supporting Courses: Complete an additional six units selected from Criminal Justice 359, 421, 482, 485, 499.

## Master of Science Degree with a Major in Criminal Justice (code 6-1031)

## Prerequisites

1. A bachelor's degree with a major in criminal justice or a directly related field or a bachelor's degree which includes 24 units of criminal justice or directly related courses comparable to courses required for a major in criminal justice at this University, and 12 units of social science. (Students deficient in undergraduate preparation must take courses to remove the deficiencies as determined by the Department Graduate Studies Committee.)
2. A student must have an undergraduate average of $3.0(B)$ or better in criminal justice or an acceptable related area, unless an exception is made by the department.

## Advancement to Candidacy

1. Student must satisfy the general University requirements for advancement to candidacy as specified in this Bulletin and must complete the specific requirements set forth in the Bulletin and in the School of Applied Arts and Sciences Handbook in effect during the semester of advancement to candidacy.
2. The graduate program must be approved by the department graduate adviser and Director of Graduate Studies and Research, School of Applied Arts and Sciences.
3. Students must complete six graduate units prior to advancement to candidacy.

## Requirements for the Master of Science

Completion of 30 units of approved upper division and graduate courses, of which 24 units must be in criminal justice. Included in the 30 units are the following required core courses (15 units): Criminal Justice 551,581, 621, 690 and 696; and a thesis (four units) or Criminal Justice 699. A student may elect to take a comprehensive examination in lieu of a thesis or Criminal Justice 699.

## Lower Division

101. Introduction to the Administration of Justice (3) F,S Faculty

History and philosophy of administration of justice in America; recapitulation of the system; identifying the various subsystems, role expectations and their interrelationships; theories of crime, punishment and rehabilitation; ethics, education and training for professionalism in the system.

## 151. Basic Concepts of Criminal Law (3) F Faculty

Historical development, philosophy of law and constitutional provisions; definitions, classification of crime and their application to the system of
administration of justice; legal research study of case law, methodology and concepts of law as a social force.

## 155. Basic Concepts of Evidence (3) F, 1980 and every third

semester Faculty
Origin, development, philosophy and constitutional basis of evidence; constitutional and procedural considerations affecting arrest, search and seizure; kinds and degrees of evidence and rules governing admissibility; judicial decisions interpreting individual rights and case studies.

## 157. Principles and Procedures of the Justice System (3) S, 1980 and every third semester Faculty

In-depth study of the role and responsibilities of each segment within the administration of justice system: law enforcement, judicial, corrections. A past, present and future exposure to each subsystem procedures from initial entry to final disposition and the relationship each segment maintains with its system members.

## Upper Division

## General

301. Contemporary Issues in Criminal Justice (3) F,S Germann, Rush, Vito

Prerequisite: Criminal Justice 101. Criminal justice studied as a total interacting system: police, corrections, parole, probation and the judiciary.
303. Basic Statistics in Criminal Justice (3) F, S Faculty

Description and analysis of research methods used in law enforcement, courts, probation and parole and correctional institutions. Calculation, interpretation and applicability of special techniques to the fields of criminal justice.

## 315. Organization Theory and Behavior (3) F,S Adams, Whisenand

Functional and structural approaches. Behavioral approach to the study of criminal justice administration. Organization and the individual; decision making and organization development. Not open to students with credit in Criminal Justice 321 or 322.

## 324. Criminal Justice: Personnel Supervision and Development (3) F,S

 Adams, GoodTechniques of supervision; problems of policy and procedure; field problems; instructional and disciplinary methods; motivation; supervisory investigations and reports; perform ance rating

## 376. Criminal Justice Planning (3) F,S Faculty

Examination of crime-oriented planning. Apprehension, adjudication, custody and supervision. Basic planning strategies and practical considerations for implementation.
403. Criminal Justice: Ecology and Etiology (3) F,S Faculty

Social, political, economic, religious and emotional characteristics of criminal justice problems; historical perspectives. Objectives and methods of social control by individuals and institutions.
404. Behavioral Aspects of Criminal Justice (3) F,S Faculty

The criminal justice system is examined from a psychological-behavioral viewpoint. The interaction of various offender types and the problems developed by them are explored.
421. Specialized Problems in Criminal Justice Administration (3) F,S Becker

Policy and procedure in specialized situations; labor-management disputes; minority group relations; crowd, public gathering, mob and riot control; mental cases; subversives; civil defense and disaster planning. Special problems involved in licensing, inspections, animal regulation, ambulance service and other specially assigned police activities. Integration of public safety functions. Problems of organized crime
*424. Advanced Supervision and Executive Development in Criminal Justice F Faculty
Prerequisite: Criminal Justice 324. Behavioral science approach to supervision in criminal justice. Includes sensitivity training, individual and group interview rehearsals and group dynamics.
480. Introduction to Research Techniques (3) $S$ Faculty

Prerequisite: Any basic course in statistics. Introduction to basic techniques in criminal justice research including library research, report writing, research design models, sampling techniques, questionnaire construction, interview techniques and participant observation.
*490. Independent Study (1-3) F, S Faculty
Prerequisite: Consent of instructor. Individual research and study approved by major professor. May be repeated for credit not to exceed a total of 3 units.
*495. Internship (3) F, S Faculty
Prerequisite: Consent of instructor. Supervised work experience in criminal justice agency in the immediate area. May be repeated for a maximum of six units. (Not open to employed criminal justice officials.)

## 496. Internship (6) F,S Faculty

Prerequisite: Consent of instructor. Supervised work experience in criminal justice agency in the immediate area. (Not open to employed criminal justice officials nor students with credit in Criminal Justice 495.)
*499. Special Topics in Criminal Justice (1-3) F, S Faculty
Prerequisite: Consent of instructor. Topics of current interest in the field of criminal justice selected for intensive development. Topics are announced in the Schedule of Classes. May be repeated for a maximum of six units.

## Law Enforcement

## 325. Police Administration (3) F,S Kenney

Prerequisite: Criminal Justice 315, 321 or 322. Program approach to the study of police administration. Overview of administration of the police function in the United States. Organization, management and operation of policing agencies.
361. Investigation and Theories in Field Policing (3) F,S Good

Examination of the investigative process throughout the criminal justice system includes procedures involving the decision to invoke the criminal justice process disposition of offenders; socio-psychological aspects; the role of training application of science and technology to operational problems. Not open to students with credit in Crim inology 271 or 371.

## 422. Comparative Police Administration (3) F,S Becker

Survey of nationwide and worldwide police philosophy and technique. Evaluation of current major hypotheses; review of recent developments and contributions by agencies and academic institutions; review of current literature in the field
481. Community Relations in Criminal Justice (3) F,S Faculty

Individual and group study of relationships between criminal justice agencies and the public. Exploration of areas of conflict and cooperation.
*482. Crime, Police and the Political Process (3) F Guthrie
Crimino-political power; relationships between specific organized crimes and political entities; political functions of criminal groups; the police as a political instrumentality.

## 485. The Role of Police in Society (3) S Germann, Kenney

Historical development of the police as an institution for social control; policing in urban and rural areas; political and socio-economic factors affecting the changing role of police in modern society.

## Legal

350. General Survey of Law (3) F,S Hails

Philosophy and history of criminal law within our legal system; structure of court system and proposed revisions; survey of criminal liabilities and safeguards within U.S. Constitutional and evidentiary rules.

## 351. Advanced Legal Process: Criminal Law (3) F,S Hails

Prerequisite: Criminal Justice 151.Jurisprudential philosophy and case study of common law and statutory crimes; includes functions and development of substantive criminal law; elements of criminal liability; specific crimes and defenses.

## 355. Advanced Legal Process: Criminal Evidence (3) F,S Faculty

Prerequisite: Criminal Justice 155. Issues and problems of proof in civil and criminal trials; admissibility; examining witnesses; constitution consideration and exclusionary rules.
357. Advanced Legal Process: Criminal Procedure (3) F,S Faculty

Prerequisite: Criminal Justice 157. Criminal analysis of prosecution; constitutional limitations from arrest to release; trends in the administration of criminal justice; legal restraints on police; relation between state and federal criminal authority.

## 59. Drug Abuse and the Law (3) S Faculty

Various drug abuses from a historical, sociological, psychological and legal perspective. The legal relationship of drug abuse to law enforcement and the criminal justice system, with legal sanctions, is explored; implications of and alternatives to the criminal sanctions are developed.

## Corrections

354. Legal Aspects of Corrections (3) F,S Faculty

Historical, sociological and philosophical development of sanctions imposed upon the convicted offender. Statutory laws with Constitutional interpretations as they affect and implement the specialized areas of probations, parole and correctional institutions will be explored.

## 358. Legal Rights of the Convicted Offender (3) $S$ Faculty

Emerging rights of the convicted offender are explored with focus upon Constitutional guarantees, appellate courts' decisions and their impact upon administration.

## 365. Correctional Administrative Behavior (3) F,S Faculty

Prerequisite: Criminal Justice 315, 321 or 322. Program approach to the study of correctional administration. Overview of the administration of the correctional function within the United States. Organization, management and operation of correctional agencies. Not open to students with credit in Criminal Justice 483.
383. Correctional Counseling (3) F,S Grencik

Theories and techniques of counseling useful to the corrections counselor. Includes abnormal reactions with appropriate responses, crisis intervention, community mental health and the use of mental health reports.

## 469. Correctional Environments (3) S Faculty

Forces and stress produced by correctional environments will be examined from a total institution perspective. Field trips to both adult and juvenile institutions will be required.
470. Alternatives to Incarceration (3) F Faculty

Historical and philosophical overview of the theory and theories behind diversion rom the criminal justice system; the legal framework; critical appraisal of impact o alternative community treatment programs; analysis and evaluation upon the correctional process

## Criminalistics

311. Basic Criminalistics (3) $S$ Faculty

Broad survey of the relationship between the physical sciences and the administration of criminal justice. Concepts of identifications and their application to various types of physical evidence which involve chemical and physical analysis and mechanical or physical comparison. (Lecture 3hours.)
*312. Intermediate Criminalistics (3) F Faculty
Prerequisite: Criminal Justice 311. Applications of comparative microscopy, serology, spectrography, chemical and microchemical techniques to fibers, hairs poisons, textiles, stains, dust, dirt and debris. Chemical tests for intoxication and narcotic addiction. Examination of questioned documents and the instrumental detection of deception. (Lecture 2 hours, laboratory 3 hours.)
*411. Advanced Criminalistics (3) S Faculty
Crime laboratory organization and management. Training of laboratory personnel. Transportation, storage and security of physical evidence. Preparation of courtroom exhibits. Use and care of special equipment such as X-ray and photospectrometer. Special problems of identification and classification. (Lecture 2 hours, laboratory 3 hours.)

## Industrial Security

## 331. Introduction to Industrial Security (3) F Faculty

Historical, philosophical and legal basis of security; role of security in modern field.

## 332. Principles of Loss Prevention (3) $S$ Faculty

Overview of the functional operations of those specialized areas of security management relating to loss prevention and risk management. Includes areas of fire protection, theft control, safety, insurance, OSHA regulations and security surveys.
335. Commercial Security (3) S Faculty

Examination of the complexity of commercial security; various management approaches; and protection within the system. Legislation and proposed lega measures to ensure protection will be examined.

## 336. Government Security (3) F Faculty

Historical, philosophical and legal basis of government security programs. The role of government agencies relating to security and intelligence in modern U.S society. The structure of the organization and a survey of checks and balances within the system.

## 431. Industrial Security Administration (3) S Faculty

Organization and management of industrial security and plant protection units Security, police, administrative, legal and technical problems. Special problems of government contract security. Specialized programs in retail security, insurance and credit investigation, transportation security and private guard and alarm services.
*435. Physical Security (3) S Faculty
Protection of industrial, business and governmental facilities. Physical security requirements and standards.
*437. Special Problems in Industrial Security (3) F Faculty
Theft control, shoplifting, document control, subversion and sabotage, civil disturbances, business espionage, labor problems, white-collar crime and natural disasters. Legal aspects. Illegal political activities.

## Graduate Division

512. Problems in Urban Criminal Justice (3) S Germann, Guthrie, Rush

Prerequisite: Consent of instructor. Control and prevention of crime in urban settings; interagency relationships; the changing law enforcement processes.

## 521. Criminal Justice Administration (3) F,S Adams, Guthrie, Kenney, Whisenand

Historical development of criminal justice programs; concepts, issues and theories of criminal justice administration; program planning and current scene; cultural and environmental settings.
541. Correctional Counseling and Case Management (3) F Grencik Issues, problems and situations confronting the correctional counselor/caseworker with suggestions for counselor strategies and reactions. The personal counseling or treatment role of the counselor/caseworker in the correctional milieu is emphasized. Referral strategies and suggestions for effective use of correctional resources in program design are included.
551. Criminal Justice Legal Systems (3) $F$ Hails

Prerequisite: Basic law course. Legal theories; examination of criminal law, evidence and procedure, origin, philosophy and development of legal reasoning.
581. Theories of Crime Causation and Prevention (3) F Becker, Rush, Vito

Prerequisite: Consent of instructor. Relationship and interaction between social structure and crime. Investigation into the classical and behavioral theories of crime and crime prevention.
599. Special Topics in Criminal Justice (3) F,S Faculty

Prerequisite: Consent of instructor. Group investigation of selected topics in criminal justice. Topics to be announced in the Schedule of Classes. May be repeated for a maximum of six units.

## 621. Seminar in Criminal Justice Administration (3) $S$ Kenney

Prerequisite: Consent of instructor. Reports based on original investigation, review of recent books, periodicals, investigation of topics of current interest.
622. Seminar in Administration of Criminal Justice Information Systems (3) $\mathbf{S}$ Faculty
Prerequisite: Consent of instructor. Special study and original research in automatic data processing applications in the administration of criminal justice; technological and other developments; equipment and methods; staff studies and potentialities.
623. Seminar in Comparative Criminal Justice Administration (3) F Becker, Kenney
Prerequisite: Consent of instructor. Advanced study of the theories, philosophies and techniques of criminal justice worldwide and nationwide Intensive review of the literature, recent developments and individual research.
624. Seminar in Criminal Justice Problems (3) S Germann, Guthrie

Prerequisite: Consent of instructor. Intensive study and individual research of the problem areas in the broad spectrum of criminal justice.

## 630. Seminar on Organized Crime (3) $S$ Guthrie

Prerequisite: Consent of instructor. Historical development of organized crime; its criminology; various techniques used against it and detailed consideration of the political, social and economic conditions of its evolution. Not available to students with credit in Criminal Justice 599 on the topic "Organized Crime."
640. Seminar in Police Administration (3) $S$ Adams, Kenney, Whisenand

Theories, concepts and issues related to the administration, organization and management of the police function. Research into changes and modification taking place.
641. Seminar in Correctional Administration (3) S Faculty

Theories, concepts and issues related to the administration, organization and management of probation, parole and institutional programs. Research into changes and modifications taking place.
650. Seminar in Juvenile Justice (3) F Adams, Kenney, Whisenand

Study of juvenile justice programs administered by the police, court and correctional agencies; analysis of theories of delinquency causation and prevention; current issues.
690. Seminar in Criminal Justice Program Evaluation (3) $S$ Whisenand

Application of the social scientific research methods to determine effectiveness of operational criminal justice programs. Analysis of reports of evaluative research. Preparation of reports

## 696. Research Methodology (3) $F$ Vito

Prerequisite: Undergraduate course in statistics. Scientific method of research; variations in research design and methodology; application of research findings to problem solution.
697. Directed Research (1-3) F,S Faculty

Prerequisites: Consent of instructor, advancement to candidacy. Independent research into criminal justice problems; issues and theories.

## 698. Thesis (1-4) F,S Faculty

Prerequisites: Criminal Justice 696, advancement to candidacy. Planning, preparation and completion of a thesis.
699. Integrated Analysis of Criminal Justice (3) F Germann, Kenney Prerequisites: Criminal Justice 697, classified M.S. status and within six units of completion of the 30 -unit minimum graduate program. A comprehensive course which serves as the required terminal examination for Criminal Justice Department candidates. A project required. A principal requirement will be the integration and systhesis of concepts and issues covered in the core course of the curriculum. Criminal Justice 697 may not be taken concurrently


## Dance

## Department Chair: Ms. Pat Finot

## Professor: Schlaich

Associate Professors: Finot, Hamilton

## Assistant Professor: Kennedy

Music Director: Ruby Abeling.
Credential Adviser: Dr. Joan Schlaich
Undergraduate Advising Coordinator: Dr. Joan Schlaich.
The Dance Department provides an in-depth program of studies with emphasis on modern dance technique, composition and performance. The curriculum is designed to give students a basic dance background which prepares them as a teacher at the secondary, community college or university level in both public and private schools; a performer in dance companies, on television or in dance films; or a choreographer. The curriculum prepares students for most graduate programs in dance. It gives the general education student and the student in closely related areas experience in dance as an art form

The CSULB dance major is the only dance degree program approved in The California State University and Colleges system. The number applying to major in dance exceeds the number that can be accepted. Therefore, dance majors are accepted by audition only. Applicants should contact the Dance Department in advance of enrollment

The part-time faculty includes Susan Cambigue, Ellen Graff, Carlton Johnson, Elizabeth Lee, Gloria Newman, Jeff Slayton and Betty Walberg.

## Major in Dance for the Bachelor of Arts Degree (code 2-5230)

Lower Division: Dance 112A, 112B, 114A, 212A, 212B, 220.
Upper Division: Dance 320, 331, 350A, 441, 488; Physical Education 304; and a minimum of one unit of Dance 180A or 180B, and one unit of Dance 380A or 380B.

Electives: A minimum of 10 units from Dance 100, 114B, 116A, 116B, 117, 120, 131, 181A, B, 312A, 312B, 314A, 317, 318, 350B, 370, 381A, B, 420A, 462, 485, 490, 495, 499. Must include one of the following: (1) Dance 485 or (2) Dance 318 and 350B or (3) other courses specified by the Dance Department.

## Minor in Dance (code 0-5230)

Lower Division: Dance 112A, 112B, 114A, 220.
Upper Division: Dance 320, 331, 441, 488 and a minimum of one unit of Dance 180A or 180 B and one unit of 380 A or 380 B

## Teaching Credentia

See adviser.

## Technique

Note: It is expected that dance students will take technique courses in sequence. However, students must screen for level placement in all technique classes. Screening will be done the previous semester and the first day of class. (Non-major technique I classes are not screened.)

## Lower Division

## 100. Orientation to Dance (2) F Faculty

Introductory information, degree requirements, career opportunities, current problems and issues in the field. Student identification of personal learning needs and goals. Evaluation on credit/no credit basis
111. Beginning Modern Dance (2) F,S Faculty

Basic skills and techniques of modern dance. Not open to dance majors. (Activity 4 hours.)

112A,B. Modern Dance Technique I,II (3,3) F,S Faculty Basic skills and techniques of modern dance. (Activity 6 hours.)
113. Beginning Ballet (2) F,S Faculty

Basic skills and techniques of ballet. Not open to dance majors. (Activity 4 hours.)

114A,B. Ballet Technique I, II (2,2) F,S Faculty
Basic skills and techniques of ballet. (Activity 4 hours.)
116A,B. Jazz Technique I, II (2,2) F, S Faculty
Basic theory and practice of modern jazz dance. (Activity 4 hours.)
117. Tap Dance I (2) F,S Faculty

Basic technique in the tap dance idiom, time steps, stylistic patterns, rhythmic patterns and tap combinations.
120. Improvisation (2) $F$ Hamilton

Use of improvisation as an introduction to structural form ; individual and group problems. (Activity 4 hours.)
131. Introduction to Music for Dance (1) F or S Faculty

Basic music notation, simple and complex rhythmic patterns, poly rhythms, skill in the use of percussion instruments and a brief survey of the historical periods of music for dance.
162. Introduction to Dance for the Theatre (2) F,S Hamilton

Fundamentals of movement theories and techniques with direct application to stage movements. Designed for theatre arts majors. (Activity 4 hours.)

180A,B. Dance Performance (1,1) F, S Finot
Participation as a performer and/or choreographer in Dance Department approved University-sponsored production. Some concert participation is by audition only. A combination of $180 \mathrm{~A}, \mathrm{~B} / 380 \mathrm{~A}, \mathrm{~B}$ may be repeated for a total of eight units.

181A,B. Dance Production-Technical (1,1) F,S Finot
Technical participation in Dance Department-approved University-sponsored productions. A combination of $181 \mathrm{~A}, \mathrm{~B} / 381 \mathrm{~A}, \mathrm{~B}$ may be repeated for a total of eigh units.
200. Viewing Dance (3) F,S Faculty

Introduction to contemporary dance theatre through viewing dance films (modern dance, ballet and ethnic), dance performances, and lecture/discussions on dance

## 212A,B. Modern Dance Technique III, IV $(3,3)$ F, S Faculty

Increased skill in the techniques of modern dance. (Activity 6 hours.)
220. Elements of Choreography (3) F,S Schlaich

Prerequisite: Dance 112B. Theory and practice in the basic elements of dance composition. (Lecture 1 hour, activity 4 hours.)

## Upper Division

312A,B. Modern Dance Technique V, VI $(3,3)$ F, S Newman
Increased skill in the technique of modern dance. (Activity 6 hours.)

## 314A. Ballet Technique III (2) F Faculty

 Advanced skills in the techniques of ballet. (Activity 4 hours.)
## 317. Tap Dance II (2) F,S Faculty

Prerequisite: Dance 117 or consent of instructor. Advanced techniques in the tap danceidiom.
318. Ethnic Dance Forms (3) F,S Faculty

Theory and technique of various ethnic dance forms. May be repeated up to 12 units, provided it is with a different instructor each time. (Lecture 1 hour, activity 4 hours.)
320. Solo and Small Group Composition (3) S Faculty

Prerequisite: Dance 220. Development of theme and style in solo and small group studies. (Lecture 1 hour, activity 4 hours.)

## 331. Music for Dance (3) F Walberg

Prerequisite: Dance 212A or consent of instructor. Theoretical and practical analyses of musical forms and instruments for dance accompaniment related to class work and performance. Includes a music repertoire for dance. (Lecture 1 hour, activity 4 hours.)

## 340. Dance Accompaniment (3) F Faculty

The art of musical improvisation for the dance class-modern and ballet. Acquiring the skill of improvising in all periods and styles of music. Knowledge of harmony and basic keyboard training required. Other instrumentalists by consent of instructor.

## 350A,B. Dance Notation I, II (3,3) F, S Kennedy

Theory and practice of notating movement through labanotation. (Lecture 1 hour, activity 4 hours.)
370. Dance in the Elementary Curriculum (1) S Faculty

Improvisational approaches to basic elements of dance as integrated into the total elementary curriculum; as a basic form of communication, as an instrument for the development of individual creativity, as identification of dance as an art form.

## 380A,B. Dance Performance (1,1) F,S Fino

Participation as a performer and/or choreographer in Dance Department. approved University-sponsored production. Some concert participation is by audition only. A combination of $180 \mathrm{~A}, \mathrm{~B} / 380 \mathrm{~A}, \mathrm{~B}$ may be repeated for a total of eight units.

381A,B. Dance Production-Technical (1,1) F,S Finot
Technical production participation in Dance Department-approved Universitysponsored productions. A combination of $181 \mathrm{~A}, \mathrm{~B} / 381 \mathrm{~A}, \mathrm{~B}$ may be repeated for a total of eight units.

## 420. Advanced Composition (3) F Faculty

Prerequisite: Dance 320 or consent of instructor. Approaches to the development of choreographic materials of extended structure and content.

## 441. History of Dance (3) F, S Schlaich

History of dance from primitive to contemporary times. Cultural importance of dance as an art form.

## 462. Advanced Dance Movement for the Theatre (2) F,S Hamilton

Prerequisite: Dance 112A or 162. Movement, modern dance and choreography for the actor, teacher and director of theatre arts and musical theatre
485. Contemporary Dance and the Fine Arts (3) F Walberg

Advanced theory and practice relating contemporary dance to the fine arts.

## 488. Organization of Dance Production (3) S Schlaich

Prerequisite: Open to dance majors and minors only. Analysis and practice in the production elements of dance concerts. Course is coordinated with department concert.
490. Special Topics in Dance (1-3) F, S Faculty

Prerequisite: Consent of instructor. Topics of current interest in the field of dance selected for special presentation and development. May be repeated provided it is a different topic, or with consent of department chair. Topics will be announced in the Schedule of Classes.

## 95. Repertory (3) F,S Faculty

Prerequisite: Audition. Students learn and perform works of distinguished choreographers. Leads to performance.
499. Directed Studies in Dance (1-3) S Faculty

Prerequisite: Consent of instructor. Independent projects and research of advanced nature in any area of dance. May be repeated for a maximum of six units.

## Economics

## Department Chair: Dr. Elbert W. Segelhorst

Emeritus: Peter F. Palmer.
Professors: Atherton, Cole, Crowther, Glezakos, Dvorak, J.R. Powell Rooney,Segelhorst, Simonson, Strain
Associate Professors: R.C. Anderson, Beaumont, Ishimine, Larmore, Magaddino Skov, Stern, Tennenbaum

## Assistant Professor: Farrell

Credential Adviser: Dr. I. Lee Skov
Undergraduate Adviser: Dr. Joseph P. Magaddino
Graduate Adviser: Dr. Elbert W. Segelhorst
Graduate Committee: Dvorak, Ishimine, Powell, Stern.
Economics is a social science dealing with resource allocation, productive processes, income distribution, and levels of output, employment and prices. Its purpose is prediction of the economic behavior that may be expected within existing or proposed institutional frameworks

The bachelor of arts degree with a major in economics prepares the student to qualify for a variety of positions in business and government. The degree also provides the foundation for teaching in elementary and secondary schools and for more advanced study in economics, business, law and other related fields.

The master of arts degree in economics is designed to provide academic preparation for positions in industry, government, consulting agencies and teaching, where the M.A. is the most advanced degree required. The emphasis is on the immediate application of more advanced principles of analysis to business, management and government. Candidates are responsible for observing the general requirements stated in this Bulletin as well as requirements specified by the Economics Department. Detailed information on requirements may be obtained from the departmental graduate adviser.

A limited number of graduate assistantships are available to qualified students.

## Major in Economics for the Bachelor of Arts Degree (code 2-8510)

Lower Division: Economics 200, 201, Accounting 202 and Mathematics 100 or equivalent. Under certain circumstances the student who declares economics as a major in upper division status may, with departmental consent, substitute Economics 300 for Economics 200 and 201. Students planning graduate study in economics are strongly urged to take analytic geometry and calculus.
Upper Division: Economics 310, 311, 313, 320, 360 or 361,380 and two additiona upper division economics courses, exclusive of Economics 300, 495 and 499. A least one of these additional courses must be at the 400 level.

The Department also requires a minimum of two courses outside of Economics (totaling six or more units), in addition to courses fulfilling any categories of the General Education requirement. Students may take any upper division course from the departments listed below, or any of the following lower division courses:Anthropology 100; Geography 100; History 131A, 131B; Mathematics 100 115B, 117, 122, 123, 224, 246; Political Science 201; Psychology 100; Social Welfare 220; Sociology 100; a departmentally approved course in computer studies.

## Minor in Economics (code 0-8510)

The economics minor is particularly suitable for students planning careers in primary or secondary education or students desiring a broad-based introduction to the methods of economic analysis. A minimum of 21 units which must include Economics 200, 201, 310; either 311 or 320; one of the following: Economics 313, 360, 361, 368; and at least two upper division electives, of which at least one is at the 400 level. Under certain circumstances the student who declares economics as a minor in upper division status may, with departmental consent, substitute Economics 300 for Economics 200 and 201.

## Master of Arts Degree with a Major in Economics (code 5-8510)

## Prerequisites

1. A bachelor's degree with a major in economics, or
2. A bachelor's degree with 24 units of upper division courses comparable to those required of a major in economics at this University. (Deficiencies will be determined by the Economics Department.)
3. A minimum undergraduate grade point average of $3.0(B)$ in upper division economics courses. (A student who fails to meet this requirement may submit Graduate Record Examination scores on the verbal, quantitative and advanced economics sections, and petition the Economics Department for a waiver.)
4. Graduate students must consult with the graduate adviser for information concerning department procedures and for approval of their course of study before entering the master of arts program in economics.

## Advancement to Candidacy

1. Satisfy the general requirements of the University for advancement to candidacy.

## Requirements for the Master of Arts

1. Thirty units of upper division and graduate courses approved by the Economics Department, of which 24 must be in economics with a minimum of 15 units in the 500 and/or 600 series. All students must develop two fields of concentration in economics, including economic theory (micro and macro).
2. Satisfactory completion of Economics 583.
3. A comprehensive examination in economic theory and one other field of economics, or a comprehensive examination in economic theory and a thesis.

## Lower Division

## 200. Principles of Economics (3) F,S Faculty

Money and banking, price changes, national income analysis, business cycles, economic growth, fiscal and monetary policy, international trade. (Macro Economics.)

## 201. Principles of Economics (3) F,S Faculty

Business organization, price theory, allocation of resources, distribution of income, public economy. (Micro Economics.)

## 300. Fundamentals of Economics (3) F,S Faculty

Designed for nonmajors. Presents basic training in economics for social studies teachers or citizens who wish to exercise a reasoned judgment about economic issues in public affairs. Content generally same as Economics 200, 201 in condensed form. Not open to students with credit in Economics 200 or 201 except by consent of the Economics Department.

## 303. Current Economic Thought (3) S Simonson

Covers ideas and philosophies of famous economists and leading present-day schools of economic thought. Includes study of main ideas of such importan economic philosophers as Galbraith, Myrdal, Samuelson, Friedman, Sweezy Mises, Hayek, Rothbard and several others. Emphasis on modern institutionalis school, post-Keynesian school, Chicago monetarist school, neo-Marxist radica school and libertarian school. Not open to students with credit in Economics 312.

## 305. Resources and Man (4) S Rooney

Occurrence and setting of non-renewable resources: ore deposits, fuels and water. Extraction and conservation. Demand for resources: economic and population growth, technology, pollution control, recycling, imports and exports Taxation and government regulation of mineral industries. (Same course as Geology 305.)

## 307. Economics of Women (3) S Skov

The changing economic role of women in the marketplace. Topics include an economic analysis of discrimination, increased participation of women in employment, marriage and fertility choices and impact of government programs on the role of women. Open to both men and women.

## 308. Consumer Economics (3) F,S Skov

Consumer demand; advertising and other influences affecting demand; consumer sovereignty; patterns of consumer expenditure; the consumer protection movement; consumer taxes, family incomes and related public policy issues.

## 310. Microeconomic Theory (3) F, S Faculty

Prerequisites: Economics 200 and 201. Analysis of economic concepts and their applications to business situations. Emphasis on supply and demand analysis, costs of production, variations of competition and monopoly, revenues, prices, profits and losses, and other aspects of the operations of the business enterprise.
311. Macroeconomic Theory (3) F,S Faculty

Prerequisites: Economics 200 and 201. Determinants of levels of income, employment, and prices; of secular and cyclical changes in economic activity; and of the effects of public policies upon aggregative economic experience.

## 313. History of Economic Thought (3) F,S Cole, Simonson

Prerequisites: Economics 200 and 201, or 300. Evolution of economics as a science. Doctrines of the different schools of economic thought. Study of the contributions of outstanding economists. Not open to students with credit in Economics 412.
320. Money and Banking (3) F, S Anderson, Dvorak, Stern, Tennenbaum

Prerequisites: Economics 200 and 201. Nature and functions of money and its relation to prices; the monetary system of the United States; the functions of banks, bank credit, foreign exchange and monetary control.

## 333. Managerial Economics (3) F, S Faculty

Prerequisites: Economics 200, 201 and Mathematics 115B (core requirement for business students); or Economics 310, or consent of instructor. Applications of microeconomic and macroeconomic theory to managerial decisions and planning Analysis of the firms' resource and product markets. Production functions; cos and output decisions. Pricing strategies under various market constraints Investment in fixed assets. Business forecasting. Emphasis upon the calculation of solutions to operational problems of the business firm.

## 334. Environmental Economics (3) S Rooney

Relationship to economic policy and environmental degradation of the goal to maximize wealth; historical and economic roots of the goal to maximize wealth; economic and population growth and the environment; implications for environmental protection policy; alternative economic goals implied by increasing environmental and natural resource constraints.

## 355. Law and Economics (3) $S$ Magaddino

Prerequisite: Economics 201 is suggested. Analysis of economic concepts and heir application to law and legal institutions. Emphasis on property law contract law, accident law, crime control and judicial administration.

## 360. American Economic History (3) F,S Crowther, Powel

Prerequisites: Economics 200 and 201, or 300. Economic analysis of growth and welfare in the American economy from the beginnings of industrialization to the present, with emphasis upon the material and social factors affecting the transformation of our economy since the early nineteenth century.
361. European Economic History (3) F Crowther

Prerequisites: Economics 200 and 201, or 300 . Economic analysis of the principal eatures of the European economy from the Industrial Revolution to the present, with emphasis upon the problems of economic growth, capital formation and technological and demographic change in this era.

## 362. Japanese Economy (3) $F$ Ishimine

Prerequisites: Economics 200 and 201 are recommended but not required. Socia and historical background of the Japanese economy, from the Takugawa and Meiji periods to the present. Early industrialization efforts and postwar policies for "democratization" of the economic structure. Contemporary problems, policies and patterns of institutional change. Analysis of influences affecting growth and prospects for economic progress.

## 368. Comparative Economic Systems (3) F,S Faculty

Handling of economic problems in differing national and ideological contexts Combines an overall conceptual framework with the study of specific nationa approaches

## 380. Economic Statistics (3) F,S Glezakos, Rooney

economic data, probability 100 or equivalent. Elementary statistical analysis of economic data, probability theory, sampling, distributions, statistical inference, testing of hypotheses, simple linear regression and correlation, time series, index numbers.

## 420. Forecasting (3) S Faculty

Prerequisite: Economics 311 or 320 . Principles and methods of forecasting Evaluation of the reliability of existing forecasting techniques. Also covers use of the macroeconomic model as a basis for forecasting and the role of forecasts and the role of forecasts in the formulation of national economic policy
*422. Monetary and Fiscal Policy (3) F Beaumont, Cole
Prerequisites: Economics 311, 320. Application of monetary and fiscal theories to a nation's economic problems. Theory, targets, instruments and institutions of economic policy. Analysis of policy actions affecting output, employment, prices, external balance and income distribution. Private/public sector interaction; efficiency/equality dilemma. Procedures stress individual studies and reports
*430. Industrial Organization (3) F Cole, Powell
Prerequisites: Economics 200 and 201, or 300. Exploration of corporate economics-structure, behavior and performance of the few large enterprises that originate ninety percent of the GNP of major industrial nations. Analysis of arguments for and against "big business." Implications of separation of management and ownership. The dilemma of economies of size versus competition: governmental attempts to solve the dilemma. Not open to students with credit in Economics 330.
*432. Economics of Business Regulation (3) S Cole, Rooney
Prerequisites: Economics 200 and 201, or 300. The economics of "businesses affected with a public interest." Appraisal of governmental actions intended to promote competitive behavior through regulation. Contrast between the older regulation of market activity and the newer regulation of the conditions of production and consumption. Regulations affecting health, safety, environmental and employment conditions. Alternatives to regulation. Not open to students with credit in Economics 332

## *436. Urban Economic Problems (3) F Segelhorst, Skov

Prerequisites: Economics 200 and 201, or 300. Intensive study and analysis of selected urban economic problems. Students prepare reports for class discussion, proposing policy solutions for such problems as poverty, political fragmentation, segregated housing and traffic congestion.
437. Urban and Regional Economics (3) F Segelhorst

Prerequisites: Economics 200 and 201, or 300. Examines the location, spatial organization, economic adjustment and development of urban and metropolitan regions. Application of analytical tools to the problems of the Los Angeles region. Not open to students with credit in Economics 336.
*441. Labor Economics (3) F Anderson, Atherton, Strain
Prerequisites: Economics 200 and 201, or 300. Manpower resources and their utilization, with particular reference to labor unions, collective bargaining and related public policies. Effects of these institutions on production, employment, prices and patterns of income distribution. Not open to students with credit in Economics 340
*444. Economics of Poverty (3) S Atherton
Prerequisites: Economics 200 and 201, or 300 . Incidence and causes of poverty in the United States. Welfare and other programs designed to alleviate poverty. Procedures stress individual studies and reports.

## *445. Economics of Health (3) $F$ Larmore

Prerequisite: Economics 201 or 300. Analysis of health as an economic good Health services as scarce resources. Use of tools of economic theory in study of special problems of health resources, markets, manpower shortages, non-profit enterprises, insurance programs and Medicare. Procedures stress individual studies and reports. Not open to students with credit in Economics 345.

## 450. Public Finance (3) F Beaumont, Magaddino, Segelhorst

Prerequisites: Economics 200 and 201, or 300 . The economic role of government. Analysis of the theory of public goods. Criteria for efficient allocation of resources between the private and the public sector. Possible responses of government externalities, such as environmental degradation. Emphasis of the allocation and distribution effects of government expenditures and taxation. Not open to students with credit in Economics 350.
451. Economics of State and Local Governments (3) S Beaumont Prerequisites: Economics 200 and 201, or 300. State and local fiscal systems: economic analysis of government functions, revenues and intergovernmental relations; implications for regional development. Not open to students with credit in Economics 351.
465. Economic Development (3) F Farrell, Glezakos

Prerequisites: Economics 200 and 201, or 300 . Economic and social factor underlying economic development. Analysis of problems associated with the economic growth of the less developed countries. Evaluation of development policies. Not open to students with credit in Economics 365
*471. International Economics (3) F,S Farrell, Glezakos, Ishimine, Stern
Prerequisites: Economics 200 and 201, or 300. International trade and exchange rate theory. Types of trade control: tariffs, quotas, exchange manipulation monopolies. Basic U.S. and European commercial policies since 1930. Not open to students with credit in Economics 370.
472. International Trade and Finance (3) F Farrell, Ishimine, Stern

Prerequisite: Economics 471. Pure theory of trade. Consequences of balance of payments disequilibrium for national income and prices. Tariffs, customs, unions and the theory of commercial policy. Foreign exchange market and international inancial institutions. Not open to students with credit in Economics 470
481. Intermediate Economic Statistics (3) F Glezakos

Prerequisite: Economics 380. A rigorous treatment of statistics emphasizing pplications of simple and multipe probability distributions, nalysis of analysis of variance and structural analysis of time series.
*486. Introduction to Econometrics (3) S Glezakos
Prerequisites: Mathematics 115, Economics 380, or consent of instructor Elementary mathematical expression of economic theory. Combined use of mathematics and statistics to solve economic problems. Use of econometric models for formulating economic policy.
490. Special Topics in Economics (3) F,S Faculty

Prerequisite: Consent of instructor. Topics of current interest in economics Topics will be announced development. May be repeated for a maximum of six units Topics will be announced in the Schedule of Classes.

## 495. Field Studies Practicum (3 or 6) F,S Strain, Tennenbaum

Prerequisites: Economics 310 or 333 and consent of instructor. Observation and practical experience, at a managerial level, in an appropriate business or government enterprise. Applications for permission to enroll must be filed with the involved. Coursemayberepeat six weeks prior to beginning of the semester involved. Course may be repeated for a maximum of six units.
499. Directed Study (1-3) F, S Faculty

Prerequisite: Consent of instructor. Independent study under the supervision of a faculty member. May be repeated for a maximum of six units of credit

## Graduate Division

500. Business Economics (3) F,S Faculty

Workings of the price system in the allocation of resources, and the and fluctuations of aggregate economic activity, with secial emphasis on the role of business enterprise in the economy. Analysis of the economic implications of various forms of industrial organization and the application of public policy to business activity, including antitrust policy and regulation. Not open to students majoring in economics.
510. Advanced Microeconomics (3) F Faculty

Prerequisites: Economics 310, consent of instructor. Applications of microeconomic theory. Detailed examination and analysis of particular markets and contemporary issues in light of economic theory. Specific emphasis on policy analysis for government and business decisions.
511. Advanced Macroeconomics and Forecasting (3) S Faculty

Prerequisites: Economics 311, consent of instructor. Applications of macroeconomics, monetary and forecasting theory to operational management and planning decisions of government and business.

## 583. Mathematical Economics (3) F Glezakos

Prerequisites: Economics 310, 311, Mathematics 115 or consent of instructor. Applications of calculus, linear algebra and other mathematical tools in formulating and solving economic problems. Not open to students with credit in Economics 483.
597. Directed Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Intensive reading and/or practical research in economics.
630. Seminar in Industrial Organization and Economic Policy (3) F Cole, Powell
Prerequisites: Economics 310, 430, consent of instructor. Advanced topics in government regulation of industry.
636. Seminar in Urban and Regional Economics (3) S Segelhorst

Prerequisites: Economics 437, consent of instructor. Applications of analytical tools to selected topics and problems in urban regional economics and finance.
640. Seminarin Labor Economics (3) $F$ Anderson Prerequisites: Economics 441, consent of instru
645. Seminar in Health Economics (3) $S$ Larmore

Prerequisite: Economics 445 or consent of instructor. Economic theory and institutional features of health care facilities, services and manpower. Emphasis on cost containment and health planning.

## 650. Seminar in Public Finance (3) $F$ Segelhorst

Prerequisites: Economics 450 or 451 and consent of instructor. Selected topics in the theory of public finance: theories of budgetary policy, tax justice, shifting and incidence, other effects of taxation, fiscal policy.
665. Seminar in Economic Development (3) $S$ Farrell

Prerequisites: Economics 365, consent of instructor. Selected topics dealing with economic development, with special emphasis on problems of underdeveloped countries.

## 670. Seminar in International Trade and Development (3) F Farrell,

Ishimine
Prerequisite: Economics 471 or 465 or consent of instructor. Selected topics dealing with current problems and solutions in international trade, finance and development

## 686. Seminar in Econometrics (3) S Glezakos

Prerequisites: Economics 481, 486,583, or consent of instructor. Development of methods for the estimation and testing of the relationships among economic variables and use of econometric models for prediction and economic policy purposes.

## 697. Directed Research (1-3) F,S Faculty

Prerequisite: Consent of instructor. Independent research under the guidance of a faculty member.

[^8]
## School of Education

## Dean: Dr. John A. Nelson, Jr

## Associate Dean, Graduate Studies and Research: Dr. Joan J. Michael

Director of Support Services and Planning: Mr. John A. McAnlis.
Supervisor/Adviser, Educational Placement: Ms. Norie Zahn.
Adviser, Educational Placement: Dr. Tom Shaw.
The School of Education provides undergraduate and graduate studies in the field of education. It offers specific curricula focusing on the preparation of personnel for teaching and educational service in the elementary, junior and senior high schools, community colleges, adult programs, other educational agencies and programs for training program developers and instructors in business, industrial, health and governmental areas

Descriptions of credential programs appear in the Credential Advisement Handbook.

## Professional Programs in Education

## Program

Department
Elementary Education
University Single Subject
Teacher Education
Secondary Education
Elementary Education
ED 1-13

| Multiple Subjects Credential Program <br> (elementary teachers) <br> Single Subjects Credential Program <br> (secondary teachers) | Elementary Education | ED1-13 |
| :---: | :---: | :---: |
| Bilingual/Cross Cultural Specialist Single Subject <br> Credential | Teacher Education <br> Secondary Education | ED1-51 |
| Early Childhood Specialist Credential | Elementary Education | ED1-07 |
| ED1-13 |  |  |

Reading Specialist Credential Elementary Emphasis Secondary Emphasis
Special Education Specialist

| Elementary Education | ED1-13 |
| :--- | :--- |
| Secondary Education | ED $1-07$ |
| Educational Psychology | ED $1-10$ |

Credential (Learning Handicapped,
Severely Handicapped, Gifted)
(Communication Handicapped
offered through the Communicative
Disorders Department)
Clinical Rehabilitative Services

Credential (Language, Speech and
Hearing, and Audiology and Special
Class Authorization for Severe
Language Handicapped and/or
Aphasic Pupils

Administrative Services Credential
Library Services Credential
Pupil Personnel Services and School Psychologist Credential
Designated Subjects Credential
Health Services Credential (School Nurse)
Instructional Media Certificate Program
Career Guidance Certificate Program

ED1-10
Educational Administration
LA 1-209 ED 1-10
ducational Psychology

Instructional Media

Specific program information for all credentials is available through departmental offices or the School of Education Credentials Office.

## Scholarships

Several scholarships are available to students enrolled in the School of Education. For candidates in the student personnel services program the Clyde Sanford Johnson Memorial Scholarship Fund, established in 1970 as a tribute to Dr. Johnson, a long time member of the faculty of the School of Education, provides monies for scholarships to be awarded annually by the Department of Educational psychology and Social Foundations to graduate students enrolled in the student personal characteristics, personal characteristics, and need. Also for graduate students in the pupil personnel area, the William H. McCreary Scholarship is awarded annually by the California Personnel and Guidance Association to honor the former Chief of the Bureau of Pupil Personnel Services who retired from the California State Department of Education in 1972. This scholarship is awarded on the basis of need, academic record, and activities on and off campus in counseling related areas need,
The Wayne W. Young Memorial A ward is presented anseling related areas. graduate in the area of educational administration For students in elementary administration.
Scholarships in elementary education, the Don D. Beiderman Memorial Education to students etting. For prudents preparing to teach in elementary schools in a multi-cultural Scholarship, prospective elementary school teachers, the Sam Pollach Memorial the Department of Elementary Education.

## Office of Educational Placement

Located in the School of Education, Educational Placement assists students and alumni in their search for teaching positions and helps employers in education locate qualified candidates for professional positions. The Educational Placement Office serves the placement needs of students currently enrolled in student leaching and provides services to students and alumni seeking positions as administrators, counselors, college instructors, librarians, and school psychologists.
To fully utilize Educational Placement services, student teachers in Elementary, Secondary or Special Education should establish a placement file, attend an orientation meeting and arrange for an individual appointment with an Educational Placement adviser. All other candidates should register with the office just prior to graduation and/or completion of an advanced credential.
duplicating, and mailing office of Educational Placement include maintaining, notices, conducting workshopsional placement files, posting written job vacancy about professional about professional educational opportunities. Limited services are provided to undergraduates; appointments may be scheduled with an Educational Placement education obtain information about the current job market within the field of

The office is located in ED1 Room 17 and is open 8 a.m. to 6 p.m. (Friday 8 a.m. to

5 p.m.) Phone - 498-5772.
Those students interested in teacher aide jobs should contact the Student Employment Office.

## Master's Degree Programs

Admission to the master's degree program is through the Office of Graduate Studies and Research within the School of Education, and materials explaining respective degree programs are available there. Students should consult with faculty in the various departments concerning particular programs.

All master's degree candidates in education are required to complete either a thesis or take a comprehensive examination in the area of their degree emphasis. For students working toward the M.S. in counseling the thesis is required.

Application for admission in a master's degree program must be made by November 15 for the spring semester or by June 1 for the fall semester; application for enrollment for thesis or comprehensives must be made by November 15 for the spring semester or by April 15 for the fall semester or summer session.

## Admissions to Graduate Program (Master of Arts in Education, Master of Science

 in Counseling, Master of Science in Special Education):Students may enroll in courses when admitted to the University as graduate students. They are not admitted to the master's degree program nor advanced to candidacy until they have completed the following steps.

1. Students must contact the University Testing Office and take the required tests before they may submit an application for admission to the program. Applications must be accompanied by transcripts from all institutions of higher learning attended.
2. When the application is complete and the tests have been taken, materials should be submitted to the Office of Graduate Studies and Research so that an official adviser can be assigned.
3. Students may be admitted when they have completed tests, submitted an application and their records have been reviewed. They may be advanced to candidacy when they have completed prerequisites and have approval of a program which has been signed by the departmental adviser and associate dean.

Students should contact the School of Education, Office of Graduate Studies and Research, and the department of their degree or credential emphasis for current information on any recent changes in requirements and programs.

## Master of Arts Degree with a Major in Education

## Prerequisites

A bachelor's degree with a minimum of 15 units of approved upper division education courses or equivalents as follows:

Educational Administration (code 5-3103): 15 units;
Educational Psychology (code 5-3158): Educational Psychology 301 or 302 or an upper division course in child psychology not taken in the School of Education; Educational Psychology 305, 419 or an equivalent introductory course in statistics, 420 or a course in psychological testing, 470 or 480 ;
Elementary Education (code 5-3110): 15 units to include Elementary Education $440,450,460,470$, and 481 or equivalents; for the Early Childhood Education Option include as prerequisite or part of program Elementary Education 421, 422 and 430; for the Elementary Reading Option include Educational Psychology 419;

Instructional Media (code 5-3150): 15 units; for Library Media Option Library Education 411, 412, 420, Instructional Media 300, 410, and one of the following: Elementary Education 430 or Educational Psychology 485;

Secondary Education (code 5-3140): Bachelor's degree with basic California Teaching Credential;

Social Foundations of Education (code 5-3162): 15 units including Elementary

Education 310 or Secondary Education 310, Educational Psychology 301 or 302, experience suitable to a social foundations program, such as teaching experience, VISTA, Peace Corps, social work or an undergraduate major in social science or humanities.

## Advancement to Candidacy

1. Students must satisfy the general University requirements for advancement to candidacy as well as special requirements specific to the area of study.
2. Prerequisites and testing must have been completed, an approved program of studies must have been filed with the School of Education Office of Graduate Studies and Research and the student must be currently enrolled.

## Requirements for the Master of Arts

1. Completion of $30-36$ units of approved upper division and graduate courses with a minimum of 15 units of $500 / 600$ level courses in education.
2. A thesis or successful completion of a comprehensive examination as required by the appropriate department.
3. Completion of the following courses appropriate to the area of emphasis, the specialization and the option:
Educational Administration: Educational Administration 541, 544, 580, 647 649, 680 and either 651 or 661; one from each of the following: (1) Educational Psychology 420, 470, or 480; (2) Educational Psychology 500, 520 or 696; (3) Educational Psychology 575,582, 604, 605, 677, or 680; and (4) Educational Administration 697 or 698;
Educational Psychology: Educational Psychology 519, 520, 604, 605, 698 and five courses from among the following according to specialization, i.e.:

Measurement and Research/Assessment: Educational Psychology 525, 526, 697; Instructional Media 440;

Child Development/Experimental Child Psychology: Educational Psychology 350, 451, 485, 560;
Learning Theory/Principles of Educational Remediation: Educational Psychology 405, 451, 527, 554A,B; Instructional Media 411;
and electives to total 30 units;
Elementary Education: one course from the following: Educational Psychology 420, 470, 480, Elementary Education 421, 430, or 451; one from the following: Educational Psychology 575, 582, 604, 605, 677, 680, or Elementary Education 655; one of the following: Educational Psychology 500 or 696; one of the following: Elementary Education 695 or 698; and the following according to specialization, i.e.,
Curriculum and Instruction: all of the following: Elementary Education 540, 550,560 , and 570 ; six units of electives;
Early Childhood Education: all of the following: Educational Psychology 604, Elementary Education 420,520,522,523, and 621; all of the following unless taken as prerequisites: Elementary Education 421, 422, and 430;
Elementary Reading: all of the following: Elementary Education 551, and 653 A,B, two of the following: Elementary Education 550,553,556,558, and 655; three units of electives;
Instructional Media: Two courses selected from Educational Psychology 420, $470,480,485$, Elem entary Education 430 (only one of Educational Psychology 485 or Elementary Education 430 may be taken to fulfill this requirement); Educational Psychology 500 or 696 and Instructional Media 697 or 698; the following according to specialization, i.e.:

Media: Instructional Media 300; and Instructional Media 501 or Educational Psychology 305;
Production; Applied and Theoretical: Three or four courses selected from Instructional Media 410, 411,510,511,512,513; and three or four
from Instructional Media 301, 440,500,501,520,540,630, to total seven courses.
Library Media: Instructional Media 501, 510, 511, Library Education 510, $540,550,581$ and electives to total 30 units selected from Radio-TV 400, Instructional Media 411, 440, 490, 500, 512, 513,540, Library Education 490 and Educational Psychology 677;
Secondary Education: 30 units of upper division and graduate courses; 18 units must be in the 500/600 series taken at this University;
Curriculum, Evaluation and Instruction: one of the following: Educational Psychology 500 or 696; all of the following: Secondary Education 520,540, and 560; one of the following: Secondary Education 695, 697, or 698; one of the following alternatives:
(1) Two courses from the following: Educational Psychology 420, 470 and 480; one of the following: Educational Psychology 575, 582, 604, 605, 677, or 680;
(2) 12 units of advanced coursework in the Single Subject area of concentration. The area of selection is limited to the areas identified as appropriate by the California Commission for the Preparation and Licensing of Teachers; Instructional Media 300 or equivalent;
Electives chosen in consultation with an adviser to a total of 30 units;
Reading: One of the following: Educational Psychology 420, 470, 480, 485, Elementary Education 451; one of the following: Educational Psychology 500 or 696; one of the following: Secondary Education 520,540, or 560 ; all of the following: Secondary Education 459, 555, 557, 657, and 659; one of the following: Secondary Education 697 or 698; electives chosen from the following for a total of 30 units: Elementary Education 450,556,558, 655, English 482, or Library Education 412.
Social Foundations: Educational Psychology 470, 480, and 680; Educational Psychology 500 or 696, or 419, 420 and 520; Educational Psychology 697 or 698; and the following according to specialization, i.e.,

History and Philosophy of Education: Educational Psychology 550, 575, 677; two courses from Educational Sociology or Educational Research; and no more than 10 elective units from the History or Philosophy Departments;
Educational Sociology: Educational Psychology 485, 582, 585; two courses from History and Philosophy or Educational Research; and no more than 10 elective units from the Sociology or Anthropology Departments;
Educational Research: Educational Psychology 419, 420, 520; two courses from History and Philosophy of Education or Educational Sociology; and no more than 10 elective units from the Quantitative Methods or Mathematics Departments.

## Master of Science Degree with a Major in Counseling (code 6-3165)

## Prerequisites

A bachelor's degree with 24 units of upper division courses in the behavioral sciences approved by the Counselor Education Committee for each of the following areas of study (suggested courses in education noted in parentheses) Developmental (Educational Psychology 301 or 302); Educational Psychology (Educational Psychology 305); Behavior Dynamics (Educational Psychology 311) Individual Differences (Educational Psychology 350); Statistics and Measurement (Educational Psychology 419, 420); Counseling and Guidance (Educational Psychology 430). Other upper division courses may be substituted from the areas of psychology, sociology or anthropology (according to the specialization) if they satisfy the area definition.

## Advancement to Candidacy

1. Students must satisfy the general University requirements for advancement
to candidacy as well as special requirements specific to the area of study.
2. Prerequisites and testing must have been completed, an approved program of studies must have been filed with the School of Education Office of Graduate Studies and Research, and the student must be currently enrolled.

## Requirements for the Master of Science

The student must complete a minimum of 36 units of upper division and graduate courses with a minimum of 15 units in the $500 / 600$ series taken at this University including both of the following: Educational Psychology 532 and 533; one of the following: Educational Psychology 519, 520, or 696 (Educational Psychology 519 and 520 are required for the School Psychology Credential); both of the following: Educational Psychology 541 and 545; Educational Psychology 697 (only on approval of the Pupil Personnel Services Committee with a demonstration of substantial published research) or 698; completion of at least one of the following areas of specialization:

1. Elementary/Secondary Counseling and Guidance: one 500 level course and one 600 level course from the following: Educational Psychology 536, 537, 631, 632;
2. Student Personnel (College Level): all of the following: Educational Psychology 538, 539;
3. Career Specialist: all of the following: Educational Psychology 530,531, and 537;
Suggested electives to complete 36 units (Other electives may be selected in consultation with an adviser): Educational Psychology 549, 555, 604 (Ryan School Psychology Credential), 605, 615, and 639 .

## Master of Science Degree with a Major in Special Education (code 6-3155)

## Prerequisites

A bachelor's degree with at least 24 upper division units in the behavioral sciences or education, such as Educational Psychology 301 or 302, 305, 311, 350, 419, 420, 430 or courses substituted from the areas of Psychology, Sociology, Social Welfare, Anthropology, Social Ecology or similar behavioral sciences (according to specialization) selected in consultation with an adviser.

## Advancement to Candidacy

1. Students must satisfy the general University requirements for advancement to candidacy as well as special requirements specific to the area of study.
2. Prerequisites and testing must have been completed, an approved program of studies must have been filed with the School of Education Office of Graduate Studies and Research, and the student must be currently enrolled.

## Requirements for the Master of Science

1. Completion of Educational Psychology 535, 546, 550, 566 and 650 (core requirements).
2. Completion of one of the following: Educational Psychology 500, 519, 520, 696.
3. Completion of nine units selected from the following according to the areas of study: Resource Specialist Option-Educational Psychology 451, 554A-B; Program Specialist, Learning Handicapped-Educational Psychology 451, 465, Educational Administration 541; Program Specialist, Severely HandicappedEducational Psychology 461, 463, Educational Administration 541; Program Specialist, Gifted-Educational Psychology 455, 456, Educational Administration 541; Community College Option-Educational Psychology 451, 461 , three units of electives chosen in consultation with an adviser.
4. Satisfactory performance on a written comprehensive examination or completion of a thesis (Educational Psychology 698). Educational Psychology 520 and 696 are strongly recommended for thesis option students.
5. Completion of electives to total 30 units as approved by adviser

## Educational Administration

## Department Chair: Dr. Neil V. Sullivan

Emeriti: J. Wesley Bratton, Henry R. Sehmann.
Professors: Jackman, Nelson, Sullivan, Williams.

## Assistant Professor: Graham.

Academic Advising Coordinators: Dr. Neil V. Sullivan, Dr. John Graham.
The Department of Educational Administration offers courses to meet the requirements of the Administrative Services Credential authorizing the holder to serve as a superintendent, associate superintendent, deputy superintendent, principal, assistant principal supervisor, consultant and/or coordinator at the elementary and secondary levels. It also offers courses to qualify for administrative positions at the community college and in adult education programs.

## Educational Administration Advisory Council

The advisory council for the approved program in educational administration is composed of school board members, interested citizens, teachers, students, ommunity leaders, supervisors and administrators from all levels in the community leaders, supervisors and ade the University. These persons confer with and assist geographic areas served by the department faculty in examining the educational needs of the community and in recommending changes in existing programs that will enable the University to meet these needs.

Dr. Chris Arce, Consultant
Ms. Carrye Baker, Student
Dr. Tarlton Binion, Director of Certificated Pesonnel, Compton Unified School District
Mr. Richard Flores, Director of Personnel, Santa Ana Unified School District
Ms. Amy Kauaghi, Student
Ms. Geneva Lopez, Student
Mr. Roger Mitchell, Student
Mr. Robert Mohr, Principal, University High, Irvine Unified School District
Mr. Peter Parra, Coordinator of Personnel, Montebello Unified School District
Mr. William Plaster, Superintendent of Schools, Fountain Valley Elementary School District
Mr. John Rabun, Director of Secondary Education, Inglewood Unified School District

Mr. Earl Shaw, Southern California Regional Occupational Center
Ms. Anna Silva, Student
Dr. James Tunney, Consultant
Ms. Herlinda Vasquez, Student
Mr. James Willard, Personnel Director, Lynwood Unified School District

## Graduate Division

## 541. Principles and Leadership in School Administratio Jackman <br> (3) F,S Graham,

Prerequisite: A valid regular teaching credential or 15 upper division or graduate units in education. Basic principles of school administration and federal, state county and local school administration relationships are studied. Stress is placed upon the concepts and techniques of leadership as they relate to educational administration.
544. Legal and Financial Aspects of Schools (3) F,S Faculty

Prerequisite: Ed. Admin. 541. Consideration of the law and public education, of school revenues, apportionments, budgetary procedures and cost accounting. Not open to students with credit in Ed. Admin. 543 and 545.
580. Introduction to Field Experience in Administration (3) F,S Faculty

Prerequisite: Admission to the Department of Educational Administration Written application should be made by October 1 for the spring semester and March 1 for the fall semester. The first of two on-the-job experiences involving the student in the solution of problems in administration and supervision at the elementary and secondary levels. Not open to students with credit in Ed. Admin 681.

## 590. Special Problems in Educational Administration (1-3) F,S Sullivan

Prerequisite: Enrollment limited to graduate students who hold a standard teaching credential and have consent of instructor. Advanced study in educational administration within an area of specialization done on experimental, research and/or seminar basis. The area will be designated by the department at the time the course is scheduled. A student may enroll for one-three units to a maximum of six units for certificate and degree purposes, subject to suitable change in course content. Non-degree and non-certificate students may enroll for additional units to suitable change in course content.
647. Seminar in School Personnel Administration and Leadership Behavior (3) F,S Williams
Prerequisite: Ed. Admin. 541. Advanced study and research into the areas relating to the role and function of educational management and leadership and the planning, organizing, staffing, directing and expediting of the personnel function

## 648. Seminar in Systems Approach and Educational Management Sullivan

Prerequisites: Ed. Admin. 541, 544. Advanced study in educational administration done on a seminar basis
649. Seminar in Urban Educational Administration (3) F,S Graham

Prerequisites: Ed. Admin. 541,544. Consideration of problems plaguing the urban school system.

## 651. Seminar in Administration and Supervision of Elementary Schools <br> (3) $\mathrm{F}, \mathrm{S}$ Jackman

Prerequisite: Ed. Admin. 541. Advanced study and research in school organization, administration, curriculum development, together with administration, evaluation and supervision of instruction. Not open to students with credit in Ed. Admin. 551 and 553.

## 661. Seminar in Administration and Supervision of Secondary Schools <br> (3) F,S William

Prerequisite: Ed. Admin. 541. Advanced study and research into the factors involved in the administration and supervision of a modern secondary school, along with an analysis of emerging designs in administrative theory and practice. Not open to students with credit in Ed. Admin. 561 and 563.
680. Advanced Field Experience in Administration (3) F,S Faculty

Prerequisites: Ed. Admin. 541, approval by the Department of Educational Administration, successful completion of Ed. Admin. 580. Application should be made by March 1 for the fall semester and October 1 for the spring semester. This is the second of two on-the-job experiences involving the student in the solution of problems in administration and supervision at the elementary and secondary levels Not open to students with credit in Ed. Admin. 682.
683. Field Work in Administration and Supervision of the Community College F,S Faculty
Prerequisite: Approval by the Department of Educational Administration. Written application should be made by October 1 for the spring semester and March 1 for the fall semester. On-the-job participation in the solution of problems in administration and supervision. Final course in the professional preparation sequence; individual conferences arranged. May be repeated for a maximum of six units.
697. Directed Research (1-3) F,S Faculty

Prerequisites: Consent of instructor, department chair and associate dean Individual research or intensive study under the guidance of a faculty member. A student may enroll for one-three units to a maximum of three units for a certificate and degree purposes, subject to suitable change in course content.
698. Thesis (1-6) F,S Faculty

Prerequisites: Advancement to candidacy, Ed. Psych. 696, approval by director department chair and associate dean. Planning, preparation and completion of a thesis under supervision of a faculty committee. Must be taken for a minimum of four units.

## Educational Psychology

## Department Chair: Dr. Ralph C. Graetz.

Emeriti: Evelyn L. Blackman, Aileen Poole Koehler, Charles H. Tilden
Professors: Blaylock, Britton, Crossan, B. Davis, Demos, Fogg, Forst, Glasser, Graetz, Hamel, Hunter, Kokaska, Lazar, Michael, Orpet, Owen, R. Peck, Revie, Shaver, Swan, Yee
Associate Professors: Cash, Denham, Gibbs, Haglund, Harris, Kampwirth, Noble, Schmidt.

## Assistant Professor: Maslow.

## Academic Advising Coordinator: Dr. Ralph C. Graetz

The Department of Educational Psychology and Social Foundations provides instruction in the history and philosophy of education, educational sociology and educational psychology including pupil personnel services and special education. Emphases in social foundations and educational psychology are provided within the master of arts degree in education. The department offers courses to meet the requirements of the California Credential in Pupil Personnel Services (school counseling, school psychology) and a master of science in counseling degree. It also offers courses to meet the requirements of the Special Education Specialist Credentials: Gifted, Learning Handicapped and Severely Handicapped, as well as a master of science degree in special education.

## Lower Division

191. Career and Personal Explorations (3) F,S Faculty

A course designed for, but not restricted to, entering and undeclared students. Includes training in life problem-solving and self-management skills; an intensive exploration of one's own values, interests and abilities; an intensive career information search; and optional modules. Instruction by self-paced materials, lecture, small group discussion, interviews and inputs from various campus departments. Not open to students with credit in Educational Psychology 190.

## 199. Orientation to Change in Education (3) F,S Faculty

Emphasis on process-change, communication and reality orientation in school and society. Experiments in learning, the reals and ideals of teaching as a profession, field trips and simulated teaching experiences. Not open to students with credit in Educational Foundations 199. (Lecture 2 hours, arranged field experiences 5 hours.)

## Upper Division

*301. Child Development and Learning (3) F, S Faculty
Physical, mental, emotional and social growth and development of the child with emphasis on the learning process
302. Adolescent Development and Learning (3) F,S Faculty Prerequisite: General psychology. Physical, social, emotional and mental development during adolescence; learning processes

## *305. Educational Psychology (3) F, S Faculty

Prerequisite: Ed. Psych. 301 or 302. Modifiability and educability of the human organism at different levels of maturity; psychology of learning applied to teaching.
*311. Mental Hygiene (3) F, S Faculty
Psychological factors important for the development of mental health; school; behavior disorders and educational interpersonal relationships in home and school; behavior disorders and educational practice.

## 350. Survey of Education of Exceptional Individuals (3) F,S Britton, Kokaska

Survey of the education of exceptional individuals offering the opportunity for the study of, and exposure to, all exceptional individuals, including the communication handicapped, physically handicapped, learning handicapped, severely handicapped and the gifted. Field work.
*360. Practicum in Exceptionality (3) F,S Britton, Kokaska, Lazar
Prerequisite: Admission to the Special Education Specialist Credential Program or consent of instructor. Initial field experiences three mornings a week or equivalent with all types of handicapped individuals in public and private community schools and facilities. Application for permission to enroll shall be made by October 1 for the spring semester and March 1 for the fall semester. No open to students with credit in Educational Psychology 360A or 360B. CR/NC only
*391. Career and Personal Explorations (3) F,S Faculty
who have not selected a major. Includes training ints and upper division students who managernt skills; an intensive exploration of one's own values, interests and abilities; an intensive career information search; and optional modules. Instruction by self-paced materials, lecture, small group discussion, interviews and inputs from various campus departments. Not open to students with credit in Educational Psychology 190, 191 or 390.
399. Orientation to Change in Education (3) F,S Faculty
and society profession, field trips and simulated teate the reals and ideals of teaching as a with credit in Education simulated teaching experiences. Not open to students with credit in Educational Foundations 399. (Lecture 2 hours, arranged field experience 5 hours.)
*405. Behavior Modification in the Classroom (3) F,S Harris, Kampwirth
Prerequisites: Ed. Psych. 305 or a course in basic learning theory, consent of instructor. Application of the principles of social learning and operant conditioning bservassroom. Includes traing in observation in a school setting, collection of oservational data, building and implementation of intervention programs

## 419. Educational Statistics (3) F,S Faculty

Prerequisite: Elementary algebra. Introduction to statistical methods with Education to educational research problems. Not open to students with credit in Educational Psychology 319 or Educational Research 319
*420. Tests, Measurements and Evaluations (3) F,S Faculty
Prerequisite: Ed. Psych. 419. Determination, meaning and use of fundamenta tatistical concepts applied to problems of measurement and evaluation construction, interpretation and use of standardized and teacher-made tests. Not open to students with credit in Educational Psychology 320 or Educational Research 320.
*430. Principles of Counseling and Guidance

## (3) F,S Faculty

Prerequisite: Ed. Psych. 305. Purposes, functions, legal aspects and administration of the pupil personnel program
*434. Interpersonal Skills in Human Resource Development (4) F,S Cash Designed to develop interpersonal skills identified as necessary to have effective Den relations and staff resources development it includes a presentation of theory and research applicable to processes in interpersonal functioning and human relations. The Carkhuff Human Technology Model provides both didactic and experiential learning approaches.
*451. Learning Disabilities in Exceptional Individuals (3) F,S Lazar
Prerequisite: Advancement to Learning Handicapped Area in the Specia Education Specialist Credential Program or consent of instructor. Assessment o learning disabilities in learning handicapped students as related to etiology and dirch findings in program implementation. Review of theoretical instructional systems used to design programs for the learning handicapped. Field work.
*455. Teaching Gifted Individuals (3) F Lazar
Prerequisite: Advancement to the Gifted Area in the Special Education Specialis Credential Program or consent of instructor. Assessment of learning characteristics of gifted individuals related to identification and diagnosis Identification of current issues and trends and the utilization of research finding in program implementation. Review of theoretical instructional systems used to design programs for the gifted. Field work. Not open to students with credit in Educational Psychology 355
*456. Implications for Education of the Gifted and Creative (3) S Laza
Prerequisite: Advancement to the gifted area in the Special Education Specialis Credential Program or consent of instructor. Methods of teaching the gifted and creative including the utilization of systematic observation, academic assessmen and prescriptive procedures. Identification of specific implication of giftednes and creativity in relation to learning and maturational growth sequences, including career preparation, in special instruction. Techniques for counseling gifted and creative students and their parents will be explored. Field work.
*461. Developmental Disabilities (3) F,S Britton, Kokaska
Prerequisite: Advancement to the Severely Handicapped Area in the Special Education Specialist Credential Program or consent of instructor. Assessment of learning and developmental disabilities in severely handicapped students as related to etiology and diagnosis. Identification of current issues and trends and the utilization of research findings in program implementation. Review of theoretical instructional systems used to design programs for the severely handicapped. Field work.
*463. Teaching Severely H andicapped Individuals (3) F,S Britton, Schmidt
Prerequisite: Advancement to the Severely Handicapped Area in the Specia Education Specialist Credential Program or consent of instructor. Methods of teaching the severely handicapped including the utilization of systematic observation, academic assessment and prescriptive procedures. Identification of specific implication of handicapped conditions in relation to learning and maturational growth sequences, including career preparation, in the special instructional program. Techniques for counseling severely handicapped students and their parents will be explored. Field work.
*464. Teaching Exceptional Individuals (3) F,S Lazar, Schmidt
Prerequisites: Admission to the Special Education Specialist Credential Program, Ed. Psych. 350, Ed. Psych. 360, or consent of instructor. Study and experience concerning the principles of learning, development and curriculum for exceptional students with emphasis upon formal and informal instruments for testing and assessment of student behavior. Preparation of instructional objectives, task analysis, techniques in planning class management and developing alternate learning strategies will be included. Field work.
*465. Teaching Learning Handicapped Individuals (3) F,S Schmidt
Prerequisite: Advancement to Learning Handicapped Area in the Special Education Specialist Credential Program or consent of instructor. Methods of teaching the learning handicapped including the utilization of systematic observation, academic assessment and prescriptive procedures. Identification of specific implication of handicapped conditions in relation to learning and maturational growth sequences, including career preparation, in the special instructional program. Techniques for counseling learning handicapped students and their parents will be explored.
*470. History and Philosophy of Education (3) F,S Faculty
Historical and philosophical foundations of education, from ancient times to the present. Not open to students with credit in Educational Foundations 470.
*480. School and Society (3) F, S Faculty
Relationships between the school and community; economic and social backgrounds of school populations; current social trends and issues as they effect education; democratic ideology and the school; education as a social function. Not open to students with credit in Educational Foundations 480.
*485. Education of Culturally Different Child (3) F Faculty
Prerequisite: Ed. Psych. 480. Problems of cultural and educational deprivation; implications for teaching. Not open to students with credit in Educational Foundations 485.

## 486A-D. Advanced Field Study with Exceptional Individuals (5,5) F, S Schmidt

Prerequisites: Advancement to a specific area in the Special Education Specialist Credential and demonstration of specified competencies. Application for this course should be made by October 1 for the spring semester and by March 1 for the fall semester. Students will be assigned to field sites five days a week for the equivalent of one semester under the supervision of a field-site specialist. Advanced field study including student teaching in a public or private school or facility serving handicapped or exceptional students. Application of specialist training competencies demonstrated in prior or concomitant specialist credential courses. In addition, opportunities will be provided for the student to demonstrate competencies in (1) the analysis and evaluation of all program elements; (2) the application of appropriate intervention to extend interaction among exceptional or handicapped pupils, their peers and adults; (3) planning and conducting parent meetings; (4) utilization of ethical practices in communication to others about exceptional or handicapped pupils; and (5) the initiation and pursuit of a program of self assessments and professional improvement. CR/NC only.
486A. Advanced Field Studies with Communication Handicapped
486B. Advanced Field Studies with Learning Handicapped $(5,5)$
486C. Advanced Field Studies with Severely Handicapped $(5,5)$
486D. Advanced Field Studies with the Gifted $(5,5)$
486F. Advanced Field Studies with the Severe Language Handicapped/Aphasia Classroom $(5,5)$
*490. Special Topics in Educational Psychology (1-6) F,S Faculty
Prerequisite: Consent of instructor. Topics of current interest in educational psychology selected for intensive study. May be repeated under different topics for a maximum of six units. Topics will be announced in the Schedule of Classes.

## *497. Independent Study (1-3) F, S Faculty

Prerequisite: Consent of instructor and department chair. Independent study Prertaken under the supervision of a faculty member. May be repeated for credit to a maximum of six units.

## Graduate Division

500. Educational Research (3) F,S Faculty

Meaning, types and applications of educational research, use of research resources and critiques of research studies. Should be taken early in a master's degree program.Open only to students taking comprehensive examinations. Not pen to students with credit in Educational Research 500.
519. Advanced Educational Statistics (3) F,S Faculty

Prerequisite: Ed. Psych. 419. Principles of statistical analysis, with emphasis on sampling procedures, hypothesis testing, experimental design and correlational techniques. Not open to students with credit in Educational Research 519.
520. Educational Measurement and Research (3) F,S Faculty

Prerequisites: Ed. Psych. 419, 420. Principles of design, methodology,measurement and inference in research design as applied to the planning, execution and evaluation of educational research studies. Strongly recommended prior to thesis work.
525. Individual Pupil Diagnosis (3) F,S Faculty

Prerequisites: Psychology 574. Administration and interpretation of diagnostic devices including tests used in the diagnosis of clinical and learning difficulties; preparation of complete case studies.
526. Educational Diagnosis (3) F,S Kampwirth

Prerequisite: Ed. Psych. 525. Theory and practice of individual diagnostic and clinical procedures for the differential diagnosis of educational problems; clinical procedures individual children. (Same practical application will take place in the schools.)
527. Clinical Practice in Child Diagnosis (3) F,S Faculty

Prerequisite: Ed. Psych 526 Diagnostic techniques with exceptional children, particularly children with lesser-incidence exceptionalities. Discussion and practice of school based consultation techniques.
530. Career Development and Decision Theory (3) F Swan

Prerequisite: Ed. Psych. 531 (must be taken concurrently) or consent of instructor. Emphasis on life planning concepts as related to the world of work, theories of career development and the career decision process.
531. Career Education Information Resources and Technology (3) F Faculty

Prerequisite: Ed. Psych. 530 (must be taken concurrently). Knowledge, use and management of information resources in career education.
532. Group Counseling (3) F,S Cash

Prerequisites: Ed. Psych. 533,631 or 632 or 539 and consent of instructor. Theory and application of small group processes in guidance and counseling, laboratory practice in selection of participants, leadership, interaction methods, problem solving and evaluation. (Lecture-discussion 3 hours.)
533. Counseling Theory (3) F,S Noble

Prerequisites: Ed. Psych. 311, 430. Major approaches and issues and techniques for counseling in the schools. Major counseling theories examined and the competencies of each developed for use in helping relationships

## 535. Counseling and Guidance for the Handicapped (3) F,S Faculty

Prerequisites: Ed. Psych 305, 350, 430 and consent of Office of Special Education. Educational and vocational needs of handicapped children; methods of counseling; rehabilitation and guidance programs. Not open to students with credit in Educational Psychology 435.
536. Guidance Practices in the Schools (3) F,S Swan

Prerequisites: Ed. Psych. 533 or consent of instructor. Emphasis on effective education at the elementary level, including career education concepts of selfawareness and career awareness. References to secondary practices are included.

## 537. Career Guidance Practices in the School (3) F,S Swan

Prerequisites: Ed. Psych. 632 or 539 or consent of instructor. Emphasis on career assessment and counseling at the secondary and post-secondary levels with reference to elementary level practices.
538. Student Personnel Work in Higher Education (3) F Faculty

Prerequisite: Consent of instructor. Student services in junior and senior colleges, technical institutes and universities; component services, legal and philosophical basis, organization and functions.
539. Counseling the College Student (3) F,S Demos

Prerequisite: Ed. Psych. 533,consent of instructor. Theory and practice of counseling and guidance of the college student.
541. General Case Practice and Field Work (3) F,S Noble, Swan

Prerequisites: Ed. Psych. 305, 311, 350, 419, 420, 430, 301 or 302 or all of aforementioned equivalents; 631 or 632 or 539 ; 533; consent of Pupil Personnel Services Committee. Application for field work should be made no later than March 1 for the following summer/fall semester and October 1 for the following spring semester. Practical experiences with school age persons in an appropriate setting.

## 545. Pupil Personnel Practicum (3) F,S Noble, Swan

Prerequisites: Ed. Psych. 541, 532, 536 or 537 or 538 and consent of Pupil Personnel Services Committee. Application should be made by March 1 for the fall semester and October 1 for the spring semester. Continued supervised Pupil Personnel Services experiences with school age children and/adults under licensed/credentialed persons; interviewing, counseling, evaluation or remediation.

546A-B. Practicum in Special Education (3,3) F,S Faculty
Prerequisites: Ed. Psych. 350 and consent of Special Education Committee. Supervised experience with exceptional children in schools, clinics, hospitals, workshops and residential settings; assessment, identification and remediation of learning disabilities. Application should be made by March 1 for the fall semester and October 1 for the spring semester

## 549. Management of Student Personnel Services (3) S Faculty

Prerequisite: Consent of instructor. Psychological techniques for improving managerial and organizational effectiveness of student personnel services in higher education.

## 550. Cultural Perspectives of Special Education (3) F Faculty

Prerequisites: Ed. Psych. 350, 480. Social, philosophical and historical foundations of special and compensatory education. Not open to students with credit in Educational Foundations 550

554A-B. Principles of Educational Remediation $(3,3)$ F,S Faculty
Prerequisites: Ed. Psych. 451 and consent of instructor. Special curriculum needs of exceptional children; strategies in meeting special problems; emphasis on implementing research in a classroom.
555. Education and Counseling in a Cross-Cultural Setting (3) F,S Faculty

Examination of discriminatory attitudes and practices and their historical antecedents. Problems of minority students in a school setting. Two additional hours per week for field observation.
560. Management of Emotionally Handicapped Child (3) $S$ Glasser

Prerequisites: Ed. Psych. 311, 604. Etiology of disturbed emotional behavior in Pereshold management of such children in school and home.
566. Career Planning for the Exceptional Individual (3) $S$ Britton, Kokaska

Prerequisite: Ed. Psych 350 or consent of instructor. Review of the career, leisure ime, adult, family and community needs and problems of the exceptiona individual. Emphasis will be upon the cooperative role of the school, public and private community agencies and organizations including parent groups and ssociations comprised of exceptional (handicapped, disabled or gifted) dividuals. Not open to students with credit in Educational Psychology 466
575. Philosophy of Education (3) S Faculty

Prerequisite: Ed Psych. 470. Examination and evaluation of major contemporary Prerequisite. Not open to students with credit in Educational Foundations 575.
582. Comparative Education (3) F Faculty

Compartive study problems and
 credit in Educational Foundations 582
585. Group Processes in Education (3) S Faculty

Recent findings regarding behavior of human beings in group situations; Recent find activities and services. Not open to students with credit in Educational Foundations 585.
590. Special Problems in Educational Psychology (1-3) F,S Faculty

Prerequisite: Consent of instructor. Advanced study of special topics and problems in educational psychology. A student may enroll for one-three units to a maximum of six units for certificate and degree purposes, subject to suitable change in course content. Non-degree and non-certificate students may enroll for additional units subject to suitable change in course content.
604. Seminar in Human Development (3) F,S Faculty

Prerequisite: Ed Psych. 301 or 302. Theories and issues in developmental Prerequal psychores
605. Seminar in School Learning (3) F,S Faculty

Prerequisites: Ed. Psych 305, 419. Research in the area of learning problems in the classroom; recent experimentation and theory in the field of educational psychology.
615. Seminar in Home-School-Community Relations (3) F Faculty

Prerequisite: Ed Psych. 430. Theory and research into the social influence of ome child behavior; techniques to foster close home rem
631. Seminar in Elementary School Counseling (3) F Faculty

Prerequisites: Ed. Psych. 305, 430. Theory, research and techniques of school counseling with emphasis on elementary school counseling; use and analysis of case studies.
632. Seminar in Secondary School Counseling (3) S Faculty

Prerequisites: Ed. Psych. 430,533. Research in and study of the techniques and tools used by the school counselor with emphasis at the secondary level; interviewing, group guidance and automated data processing.
639. Seminar in Organization of Pupil Personnel Services (3) F,S Faculty Prerequisite: Ed. Psych. 430. Practices and problems in organizing, administering, supervising and evaluating pupil personnel programs at various educational levels.

## 642A. Field Work-School Psychology (1-6)F,S Noble

Prerequisites: Ed. Psych 541, 545, consent of Pupil Personnel Services Committee. Application for field work should be made by October 1 for spring semester or by March 1 for the summer or fall semester. Two units of field work is generally recommended per semester. Not open to students with credit in Ed Psych. 542C. CR/NC only

## 42B. Field Work-Counseling (1-2) F,S Noble

Prerequisites: Ed. Psych. 541, 545, consent of Pupil Personnel Services Committee. Application for field work should be made by October 1 for spring semester or by March 1 for the summer or fall semester. Each area of specialization may be taken for one or two units per semester for a maximum of four units total. Not open to students with credit in Ed. Psych. 542A. CR/NC only.

## 650. Seminar in Special Education (3) S Faculty

Prerequisites: Ed. Psych. 350 and consent of instructor. Studies of current problems and issues in special education relating research to practice in the areas of mentally exceptional children.
677. Seminar in Curriculum Development (3) $S$ Faculty

Prerequisites: Ed. Psych. 470 or 575 and 480 or 680 . Psychological, sociological and philosophical foundations of principles of curriculum patterns and development at both elementary and secondary levels. Not open to students with credit in Educational Foundations 677.

## 680. Seminar in Current Problems and Issues in Education (3) F,S Faculty

Prerequisite: Ed. Psych. 500 or 696. Current developments in education; problems and issues in classroom teaching and school administration. Not open to students with credit in Educational Foundations 680.

## 696. Thesis Study: Methodology, Organizational and Research <br> Aspects (3)

Prequisite: Ed. Psych. 419. Analysis and definition of problems in education in
 research design and procedure, data analysis and inference, interpretation and generalization of research findings. Designed for students planning to do a thesis. No work on a thesis may be done in this course. Thesis work must be initiated and completed in 698 only.

## 697. Directed Research (1-3) F,S Faculty

Prerequisites: Consent of instructor, department chair and associate dean Individual research or intensive study under the guidance of a faculty member. A student may enroll for one-three units to a maximum of three units for a certificate and degree purposes, subject to suitable change in course content.

## 98. Thesis (1-6) F,S Faculty

Prerequisites: Advancement to candidacy, Ed. Psych. 519 or 520 or 696, approval by director, department chair and associate dean. Platite. Must be taken for completion of a thesis under supervision of a faculty commitiee. minimum of four units


## Elementary Education

## Department Chair: Dr. Albert H. Koppenhaver.

Emeriti: R Burdette Burk, Juliana T. Gensley, Marion R. Johnston, Oliver P Johnstone, Leo T. Phearman, Arlene A. Roster, Olive L. Thompson.
Professors: Bernstein-Tarrow, Cahn, Jamgochian, Jones, Koppenhaver, Lass Kayser, Myers, Nagle, Perry, Rodney, Rolfe, Tabor
Associate Professors: Ames, Beck, Gold, Krause, Newcastle, Olguin.

## Assistant Professor: Chan

Academic Advising Coordinator: Dr. Albert H. Koppenhaver
The Department of Elementary Education provides course work for: (a) (b) candidates pursuing the M.A. in
 ducation with a concentratio (d) candidat for Early Childhood Specialis Reading Specialist Credential, (d) credential candidates

## Upper Division

*310. The Elementary School in American Society (3) F Faculty
Role of the school in American society and its historical, philosophical and sociological development. Includes the role of the teacher, the learning process, problems, issues and curricula.
*361. Foundations in Mathematics: Emphasis in Geometry (2) F, S Perry
Prerequisite: Mathematics 110 or graduate standing. Geometric configurations, Prequical解 construction, use ith credit in EI. Ed. 461.
*362. Unifying Concepts in the Mathematics of Number (2) F,S Perry
Prerequisite: Mathematics 110 or graduate standing. Unification and integration frocedures. Includes the development of sets, number and number systems, mathematical conditions and mathematical relations. Not en
*420. Teaching Strategies for Young Children (3) F,S Bernstein-Tarrow,
Rodney
Strategies for providing learning environments conducive to creative expression, problem solving and developmental activities appropriate for children five to eight years of age in public school settings. Analysis of books, materials and equipment suitable for young children. Field work.
*421. History and Philosophy of Early Childhood Education (3) F,S
Bernstein-Tarrow, Gold, Rodney
Historical, philosophical and psychological foundations of early childhood education as related to current trends. Analysis of programs with reference to curriculum, roles of teacher and children and provision for multi-cultural background of learners. Field work.
422. Curriculum for Young Children (3) F,S Bernstein-Tarrow, Gold, Rodney Curriculum and teaching-learning processes for children from infancy to age five in a variety of early childhood settings. Establishment of optimal environments selection and creation of materials, observation and field work with young children Not open to students with credit in Elementary Education 322.
423. Supervision of Preschool Programs (3) S Bernstein-Tarrow, Rodney Supervision of early childhood programs and personnel in such settings as child development centers, nursery schools, Headstart and infant programs. Explore duties and qualifications of staff, financial procedures, maintenance, equipment individual records, health and nutrition.

## 424. Assessment of Competency in Early Childhood Education (3) F,S Bernstein-Tarrow, Rodney

Prerequisite: Admission into Early Childhood Specialist Credential Program
Specialized course required for candidates in the Early Childhood Specialist Credential Program. Individualized program for each candidate based on assessment of performance of knowledge and application of the competencies encompassed in the Early Childhood Specialist Credential Program. CR/NC only.
*430. Teaching in Cross-Cultural Settings (3) F,S Rodney
Planning learning environments and teaching strategies for children of varied socio-cultural backgrounds with emphasis on problem solving, self concept and language development. Evaluation of multicultural materials. Field work. (Lecturediscussion 3 hours.)
*440. Language Arts in the Elementary School (3) F,S Faculty
Prerequisite: Admission to elementary teacher education. Objectives, trends, teaching procedures and evaluation related to oral and written expression. Includes handwriting, spelling, listening, creative writing, linguistics, usage and vocabulary. Field work.
450. Reading in the Elementary School (3) F, S Faculty

Prerequisite: Admission to elementary teacher education. Objectives, principles, materials and teaching procedures of modern developmental reading programs. Includes word recognition, phonics and structural analysis, comprehension and interpretation, locational skills, personal reading, evaluation and the use of adopted texts. Field work.
451. Measurement and Evaluation in Reading (3) F,S Koppenhaver, Perry Prerequisite: EI. Ed. 450 or Sec. Ed. 459. Practical, instruction-directed analysis, interpretation of existing measures and instruments in reading; effects of cross, cultural differences on test performance; formal, informal, individual and group diagnostic procedures will be stressed. Methods of appraising reading needs of a total class are emphasized.
458. Newspaperin Education (1-3) SS Faculty

Use of the daily newspaper as an instructional tool in the classroom. Newspaper artices features and editorials as means of providing current content and bases for improvement of reading skills, interests, critical thinking and problem-solving Understanding mass media. Not open to students with credit in Education 490 (where topic was Newspaper in the Classroom).
460. Mathematics in the Elementary School (3) F,S Faculty

Prerequisite: Mathematics 110 or equivalent. Admission to elementary teacher pretinciples of modern school mathematics. Includes educhers and media that contribute to its meaning and understanding. Field work.
*470. Social Studies in the Elementary School (3) F, S Faculty
Prerequisite: Admission to elementary teacher education. Objectives, content scope, sequence, materials and teaching procedures in the social studies. Includes analysis of the trends, research and evaluative devices utilized in the social studies. Field work.
480. Observation and Participation in the Elementary School (2) F,S Faculty

Observation and participation in an elementary classroom for one full morning each week in a selected public school, with two assignments of seven weeks in two different grade levels and a weekly seminar with a university adviser. CR/NC only.
481. Student Teaching in the Elementary Grades (2-12) F,S Faculty

Prerequisites: El. Ed. 440, 450, 460, 470 and official admission by the Elementary Prerer Education Committee. All day for one semester or five mornings per week or two semesters in a public school elementary classroom, with assignments in wo grade levels and a weekly seminar with a college adviser. Application should e made by March 1 for the fall semester and October 1 for the spring semester CR/NC only.
490. Special Topics in Elementary Education (1-3) F,S Faculty

Topics of current interest in elementary education selected for intensive study. May be repeated under different topics but only six units may be app
advanced degrees. Topics will be announced in
497. Independer chair. Independent study Prerequisites: Consent of instructor and a faculty member. May be repeated for credit to a maximum of six units.

## Graduate Division

520. Individualization of Learning, Organization and Management (3) F,S

Bernstein-Tarrow, Rodney Prerequisites: Ed. Psych. 301, El. Ed. 420, teach needs of children. Varied instructor. Alternation management strategies including differentiated staffing, continuous progress and record keeping. Emphasis on early childhood. Field work.
522. Parent Education and Involvement in Educational Environments
(3) F,S Bernstein-Tarrow, Rodney
Analysis of trends, issues, programs and practices pertaining to parent education and involvement in educational settings. Emphasis on early childhood and multi-cultural environments. Skills such as communication, interviewing and organization of activities. Field work

## 523. Supervision of Early Childhood Programs (3) F Bernstein-Tarrow, Rodney

Supervision and coordination of early childhood education (E.C.E.) programs: staffing and in-service development; directing total program; preparing budgets and program proposals, working with parents and community resources. Field work.

## 540. Problems in Teaching the Language Arts in the Elementary School

(3) S Lass-Kayser
Prerequisites: El. Ed. 440, teaching experience. Advanced study of teaching procedures, evaluation, materials, research, and trends in the language arts Emphasis on problems in the classroom. Includes individual research.

## 50. Problems of Teaching Reading (3) F,S Faculty

Prerequisites: EI. Ed. 450, teaching credential or consent of instructor. Advanced study of teaching procedures, materials, trends, evaluation, with emphasis upon research. Designed for classroom teachers as well as reading specialists.

## 551. Diagnosis and Correction of Reading Disabilitie <br> (3) F,S Koppenhaver Tabor

Prerequisites: EI. Ed. 450 or Sec. Ed. 457 , credentialed teaching experience or consent of instructor. Immediate access to children essential. Diagnosis and remediation of reading disabilities. Intensive study of a disabled reader of elementary or secondary school age.

## 553. Personalized Reading Instruction (3) F,S Tabo

Prerequisites: El. Ed. 450, graduate standing. Principles, practices and procedures using personalized teaching materials and evaluative devices. Directed toward reluctant and disabled readers as well as able readers. Focuses on ethnic literature as a vehicle for personalizing instruction.
554. Competency in Teaching Reading (2) F Newcastle, Tabor

Prerequisites: EI. Ed. 450, a valid California teaching credential, one year of successful teaching experience. Required for those pursuing the State Reading Specialist Credential. An appraisal of each candidate's competencies in areas of theory, diagnosis, measurement, prescription, methods/materials, professional literature, motivation and professional involvement.
556. The Reading Process (3) F,S Newcastle, Tabor

Prerequisites: EI. Ed. 450 or Sec. Ed. 459, a valid California teaching credential. Designed for Reading Specialist Credential candidates and others interested in an in-depth study of the complex nature of the reading process. The course is focused on an examination and analysis of the interrelationships of intellectual development, cognition and language as they apply to the reading-learning process. Survey and analysis of pertinent research.
558. Linguistics for Reading Teachers (3) F,S Lass-Kayser, Olguin

Prerequisites: EI. Ed. 450, 550; Sec. Ed. 457 or 557; a valid California teaching credential, one year of teaching experience or its equivalent and graduate standing. Designed for candidates enrolled in the Reading Specialist Credential program and others interested in studying linguistics as related to reading instruction. Examination of pertinent research, small discussion groups, resource persons, lectures, field trips and audio-visual presentations will be utilized in the course. Includes the integration of theory and application of linguistics in the classroom with focus on phonology, morphology, syntax, semantics and suprasegmentals as they relate to reading instruction
560. Problems of Teaching Elementary Mathematics (3) F Perry

Prerequisites: EI. Ed. 460, teaching experience. Advanced study and research in elementary school mathematics. Emphasis on content, methods and materials Includes individual research.

## 70. Problems of Teaching the Social Studies in the Elementary School (3) F

 RolfePrerequisites: El. Ed. 470, teaching experience. Advanced study of teaching procedures, materials, research, trends, and problems in the social studies Includes individual research.
590. Special Problems in Elementary Education (1-3) F,S Faculty
590. Study of special topics and Prerequisite: Consent of instructor. Advanced enroll for one-three units to a problems in elementary education. A sump degree purposes, subject to suitable maximum of change in course content. Non-degree and non-certificate students may enroll for additional units subject to suitable change in course content.
621. Seminar in Early Childhood Education (3) S Bernstein-Tarrow, Rodney Prerequisites: Ed. Psych. 301 or equivalent, EI. Ed. 420, 520, teaching experience Advanced study of research in early childhood education, infancy Advant research pertaining to child development, curriculum and Knowledge children in the cognitive, affective and psychomotor domains. Field work.

## 653A,B. Seminar and Clinical Laboratory in Reading Disabilities $(3,3)$ SS

## Koppenhaver, Faculty

Prerequisites: El. Ed. 450 or Sec. Ed. 459 and EI. Ed. 551. Specialized course designed to service advanced students with study and laboratory experience in desis and remedial reading procedures. Part of the Reading Specialist dial ogram. includes stice for each testing and evaluation, daily instruction in case study and diagnosis.)

## 655. Seminar in Reading Curriculum and Supervision <br> (3) F,S Koppenhaver,

Newcastle
Prerequisites: EI. Ed. 551, Sec. Ed. 459, credentialed teaching experience, cceptance into the Reading Specialist Program. Advanced study and remasis concerning curriculum development and supervision of with credit in EI. Ed. 552 on program and staff development. Not open to students with credit in El. Ed.
660. Advanced Field Work in Reading (3) F,S Koppenhaver, Newcastle,

Tabor
Prerequisites: EI. Ed. 653A,B and approval by the Reading Committee of the Department of Elementary Education. Applications should be made by March he fall semester and October 1 for the solution of problems individual conferences and seminars directed toward the evolving from reading programs, instruction and supervision.

## 681. Advanced Field Experiences in Early Childhood <br> Tarrow, Reif Experiences in Early Childiood (4) F,S Bernstein-

Prerequisite: Approval by Early Childhood Education faculty adviser. Written Prerequish 1 for fal semester. Supervised field experience with children. Experiences will be offered at pre-kindergarten, kindergarten and primary levels and in multi-cultural settings as needed. Meets requirement for Early Childhood Specialist Instructional Credential A maximum of four units only allowable toward master's degree program. May be repeated for a maxim um of 12 units
695. Seminarin Elementary Education (3) F,S Faculty

Prerequisites: Advancement to candidacy, permission of graduate adviser Advanced study of elementary education including library research, research paper and oral comprehensive examinations, required of all master's degree candidates electing to write the comprehensive examination
697. Directed Research (1-3) F,S Faculty

Prerequisites: Consent of instructor, department chair and associate dean Individual research or intensive study under the guidance of a faculty member. A student may enroll for one-three units to a maximum of three units for a certificate and degree purposes, subject to suitable change in course content.

## 698. Thesis (1-6) F,S Faculty

Prerequisites: Advancement to candidacy, Ed. Psych. 696, approval by director department chair and associate dean. Planning, preparation and completion of a thesis under supervision of a faculty committee. Must be taken for a minimum of four units.

## Instructional Media

Department Chair: Dr. Richard J. Johnson.
Emeritus: James E. Cockrum
Professors: Brent, Gramlich, Johnson, Timmons, Vaughan
Associate Professors: McLaughlin, Ward.
Academic Advising Coordinators: Dr. Richard J. Johnson, Dr. James S. Vaughan.
The Department of Instructional Media offers courses meeting the requirements The Departion with an emphasis in instructional media, the Library for the M.A. Services Credential for the Sta

## instructional Media Advisory Council

The Advisory Council is composed of professional people whose position indicates an involvement with media as a means of instruction in public schools, business and industry. The purpose of this group is to examine and recommend hanges in the existing program and assist the department in future planning
Abbas Bolourch, Instructional Media Department Association
Nancy Carter, Personnel Development Assistant, General Telephone Co
Jill Henricks, Coordinator of Instructional Media, Ocean View School District
Richard J. Johnson, Chairman, Instructional Media Dept., California State University, Long Beach
John Nelson, Dean, School of Education, California State University, Long Beach
C.L. Nunnelly, Manager, Engineering Training, McDonnell Douglas Aircraft Co.
Aldo S. Romiti, Adm inistrative Assistant, Chief of Staff, Veterans Administration Hospital
Jonda Rourke, Training Coordinator, Buffums' Department Store
Rosemary Taylor, Audio Visual Librarian, Redondo Beach Public Library

## Certificate Program in Instructional Media

The Certificate Program in Instructional Media is interdisciplinary and is open to tudents in any field where communication and/or library media skills are students. The program is open to undergraduate or graduate students.
Admission to the program is through application to the Department of Instructional Media.

Requirements for the Certificate in Instructional Media

1. A bachelor's degree with an approved major. (Certificate may be completed prior to the completion of the B.A. requirements or while in the process of working toward an advanced degree.)
2. 21 to 24 units selected from the three disciplines listed below and completion of one of the four programs listed, chosen in consultation with an adviser and determined by class level and student objectives.
Instructional Media 300, 301, 410, 411, 440, 490, 497,500, 501, 510, 511, 512, 513, 520, 540, 590, 630, 697.
Library Education 411, 412, 420, 490, 510, 540, 550, 581
Speech Comm unication $332,333,352,358,434,445,448,449,451$
(1) Industrial Employee Development Personnel and Public School Administrators
(2) Instructional Materials Resource Center Personnel: Audio Visual or Library
(3) General Media Specialist
(4) Library Specialist

## Upper Division

*300. Instructional Media (3) F, S Faculty
Resource materials and technological advancements related to instructional theory and practice. Laboratory experience includes preparation of instructional media and equipment operation. (Lecture 2 hours, laboratory 2 hours.)
*301. Curricular Integration of Instructional Media (2) F Gramlich
Prerequisite: I.M. 300 or consent of instructor. Experimental approaches to the use of media involving multi-screen presentation, programmed learning, telemation, cooperative teaching and student response systems.
*410. Preparation of Graphic Media (2) F,S Brent
Prerequisite: I.M. 300 or consent of instructor. Advanced problems in visualization including the preparation of transparency materials, charts and graphs, and use of mechanical lettering devices, layout and design
*411. Programmed Instruction (2) F,S Timmons
Prerequisite: I.M. 300 or consent of instructor. Primitive, modern and experimental formats. Integration of programmed learning with modern system approaches to instruction.
*440. Computers and Information Systems (3) F McLaughlin
Introduction to electronic computers and data processing systems as applied to various fields in education. Includes individual projects and field trips to local computer centers. (Lecture 2 hours, laboratory 2 hours.)
*490. Special Topics in Instructional Media (1-3) F,S Faculty
Prerequisite: Consent of instructor. Topics of current interest in instructional media selected for intensive study. May be repeated under different topics for a maximum of six units. Topics will be announced in the Schedule of Classes.
*497. Independent Study (1-3) F, S Faculty
Prerequisite: Consent of instructor and department chairperson. Independent study undertaken under the supervision of a faculty member. May be repeated for credit to a maximum of sixunits.

## Graduate Division

500. Instructional Systems (3) S Gramlich

Prerequisites: IM 300 and 411 (may be taken concurrently) or consent of instructor. Analysis and design of instructional systems related to the conceptua framework of a system.

## 201. Theoretical Models Applied to Media (3) S Ward

Prerequisites: Ed Psych. 305, IM 300. Theoretical models of communication information, learning and perception applied to the design and utilization of instructional media
10. Preparation of Photographic Media (2) F Brent

Prerequisite: IM 300 or consent of instructor. Design and production of hotographic story board formats, slides and filmstrips. (Lecture 1 hour, laboratory 2hours.)
511. Preparation of Audio Media (2) S Vaughan

Prerequisite: IM 300 or consent of instructor. Planning and production of Prerequisite: 1 M 300 or consent ( Lecture 1 hour, laboratory 2 hours.)
512. Instructional Film Production (3) F,S Vaughan
site: Consent of instructor Topical selection, objectives, scripts, ming editing, and preproduction testing in relation to new concepts of perception and learning. (Lecture 2 hours, laboratory 2 hours.)
513. Multi-Media Message Design (3) $S$ McLaughlin

Prerequisites: IM 300, 410,510,511, 512 and consent of instructor. Advanced Prerequisites: IM 300, 410 , 5 study and laboratory

## 520. Administration of Learning Resource Centers (2) S Ward

Prerequisite: IM 300 or consent of instructor. Functions and operation, ualifications and duties of staff, selection and evaluation of materials and equipment, unit cost. Integrated field work.

## 540. Interactive Computer Systems (3) S McLaughlin

Introduction to teleprocessing and time-shared computing systems as applied in education and information science. Emphasis on non-computational instructional and administrative usage. (Lecture 2 hours, activity 2 hours.)
590. Special Problems in Instructional Media (1-3) F,S Faculty

Prerequisite: Consent of instructor. Advanced study of special topics and problems in instructional media. A student may enroll for one-three units to a maximum of six units for certificate and degree purposes, subject to suitable change in course content. Non-degree and non-certificate students may enroll for additional units subject to suitable change in course content.
630. Seminar in Educational Technology (2) F,S Vaughan

Prerequisite: IM 300 or consent of instructor. Analysis of experimental techniques, theory and research in learning, motivation and audience.
697. Directed Research (1-3) F,S Faculty

Prerequisites: Consent of instructor, department chair and associate dean Individual research or intensive study under the guidance of a faculty member. A student may enroll for one-three units to a maximum of three units for a certificate and degree purposes, subject to suitable change in course content.

## 698. Thesis (1-6) F,S Faculty

Prerequisites: Advancement to candidacy, Ed. Psych. 696, approval by director department chair and associate dean. Planning, preparation and completion of a thesis under supervision of a faculty committee. Must be taken for a minimum of four units.

## Library Education

## Credential Adviser: Dr. Barbara Ward

## Lower Division

100. Introduction to Library Use (1) F, S Brent, Ward

Introduction to the use of libraries, library tools, materials and services. Particular emphasis on the college library.

## Upper Division

*411. Children's Books for School Libraries (3) F Ward
Phildren's books, past and present Prerequisite: Junior standing. books for elementary school libraries, based on Critical analysis and selection of books forriculum demands. Use of books with interests and needs of children activities of school librarians.
children and reading guidan
*412. Adolescent Books for School Libraries (3) S Ward
Prerequisite: Lib. Ed. 411. Survey of adolescent books appropriate books and non library, including classics, popular novel, junior novel, paperback boe of selection fiction. Analysis of the criteria upon which selection is basedi use fiction. Analiques of reading guidance for the secondary school librarian. Extensive tools, techniques reading and analysis

## 420. Basic Reference (3) F Ward

Phil Basic Reference and study of criteria for evaluation of refence Philosophy of reference service and study and bibliographic cooperation and control.
*490. Special Topics in School Librarianship (1-3) F,S Faculty
Prequisite: Consent of instructor or library education coordinator. Topics of Prerequisite: Consent of instructor or alected for intensive development. May be curren for a maximum of six units.
497. Independent Study (1-3) F, S Faculty

Prerequisite: Consent Independent study undertaken under the supervision of a faculty member. May be repeated for credit to a maximum of six units

## Graduate Division

510. Selection of Materials (3) F Ward

Prerequisites: Library Ed. 411, 412, 420; Instructional Media 300, 410 or their equivalent. Criteria, tools, procedures and policies for evaluating and selecting book and non-book materials appropriate to use in various types of libraries. No open to students with credit in Library Education 410.
540. Classification and Cataloging of Printed Material (3) S Ward

Prerequisites: Library Ed. 411, 412, 420; Instructional Media 300, 410 or their equivalent. Philosophy and use of card or book catalogs. Principles in classification and cataloging and practice in applying these principles in school libraries Acquisition and processing materials as they relate to classification and cataloging. Not open to students with credit in Library Education 400, 441.

## 550. School Library Media Center Administration (3) F Ward

Prerequisites: Library Ed. 411, 412, 420; Instructional Media 300, 410, permission of program adviser. Philosophy, principles and problems of planning, organizing and administering a school library media center and its program in individua schools. Field trips to and observation of library media centers in the public schools.
581. Field Work in the School Library Media Center (4) F,S Ward

Prerequisite: Completion of the courses required for the library media credential program or permission of the program adviser. Applications for spring semester must be in the office of the Library Education Adviser by October 1 and for fall semester and summer by March 1. Students will receive practice in administering a library program and services under the supervision of a credential librarian. Not open to students with credit in Library Education 481

## Secondary Education

Department Chair: Dr. Harold V. Graham.
Emeriti: Roy C. Anderson, William E. Fisher, Frank F. Gorow, Kephas A. Kinsman, Daniel C. McNaughton, Wallace H. Moore

Professors: Graham, Jersin, Popham.
Associate Professors: Hidalgo, Marrs, Morris, Sugimoto
Assistant Professor: Nieto.

## Academic Advising Coordinator: Dr. Harold V Graham

The Department of Secondary Education provides courses for students working ward single-subject credentials under the Ryan Act, programs for community ollege teachers, adult education, advanced courses in curriculum, instruct arts in ovaluation for experienced teachers, a program leading to the master arts in evaluation for experien in secondary education or with specialization in education with an emalilal Cross-Cultural Specialist Credential and, in cooperation with reading, the Bilingual/Cross-Cultaral Elent, the Reading Specialist Credential Program the Elementary Educalos ithe Bilingual/Cross-Cultural emphasis for secondary school credential and the B

Lower Division
157. Individualized Reading Program (3) F,S Faculty
157. A reading reading assistance through an individualized approach. May be repeated once for credit

## Upper Division

*310. Secondary Schools and Students (3) F,S Faculty
Prequisite. Education Single Subject 300. Secondary school pupil Preat of culture, sociological factors affecting schools, curriculum, development, effects of culture, sociog of secondary education. Cross-cultural controversies experience is included.
201. Principles of Adult Education (3) F Faculty

Scope and functions of adult education, characteristics of the adult learner, Scosophical and historical perspectives, future trends. Meets the requirement for the Designated Subjects Credential in Adult Education.

## 02. Methods and Materials of Adult Education (3) S Faculty

Objectives, curriculum, methods and materials used in teaching adult education Meets the requirement for the Designated Subjects Credential in Adult Education.
*421. Learning and Instruction (3) F, S Faculty
Prerequisite: Education Single Subject 300 . This is a competency-based course in systematic instruction which combines theories and conditions of learning with teaching strategies and evaluation of student progress. Cross-cultural field experiences are required.
*435. Cross-Cultural Education in United States Society (3) F,S Nieto Prerequisite: Education Single Subject 300. Concurrent language training recommended. Survey of language variations, socio-economic differences and educational equality in a pluralistic society. Introduction to bilingual and intercultural curriculum alternatives in public schools. Treatment of educational philosophies and inter-racial attitudes of prospective teachers. Analysis of minority adolescent characteristics. Bilinguality not required. (Lecture-discussion 3 hours.)
*436. Instruction and Evaluation in a Cross-Cultural Setting (3) F,S Hidalgo Prerequisite: Education Single Subject 300 . Concurrent enrollment in Secondary Education 435 recommended but not required. Application of learning theories to learning styles of minority adolescents. Planning and evaluation methods for bilingual/cross cultural instruction. Orientation to interaction and management practices for effective inter-racial relationships. Bilinguality not required. (Lecturediscussion 3 hours.)
*457. Developmental Reading in the Secondary School (3) F, S Faculty
Prerequisite: Education Single Subject 300. Principles, materials and evaluation in a developmental reading program in junior and senior high schools. Special attention to the application of word and basic study skills in the content areas; practical classroom methods of diagnosis and remediation. Includes individualized instruction for students enrolled.
*458. Newspaper in Education (1-3) SS Faculty
Use of the daily newspaper as an instructional tool in the classroom. Newspaper articles, features and editorials as a means of providing current content and bases for improvement of reading skills, interests, critical thinking and problem-solving. Understanding mass media.

## *459. Methods of Teaching Reading in the Secondary Schools <br> (3) $\mathrm{F}, \mathrm{S}$

 GrahamMethods of teaching reading in junior high school, senior high school and community college, including planned observation and participation in public school classrooms. Part of the Reading Specialist Credential. May not be substituted for Secondary Education 457 in the single subject credential program. Must be completed before student teaching in reading.
*490. Special Topics in Secondary Education (1-3) F,S Faculty
Prerequisite: Consent of instructor. Topics of current interest in secondary education selected for intensive study. May be repeated under different topics for a maximum of six units. Topics will be announced in the Schedule of Classes.
*497. Independent Study (1-3) F,S Faculty
Prerequisites: Consent of instructor and department chair. Independent study undertaken under the supervision of a faculty member. May be repeated for credit to a maximum of six units

## Graduate Division

520. Advanced Studies in Secondary School Instruction (3) $F$ Jersin

Prerequisites: Sec. Ed. 421, or equivalent, teaching experience. Intensive study of current problems in secondary school teaching, emphasizing applications of research. Includes analysis of new emphasis, media and techniques.
540. Advanced Studies in Secondary School Curriculum (3) S Popham

Prerequisites: Sec. Ed. 310, 421 or equivalent, teaching experience. Individua Prese literature, research, and courses of study in various curricula. Includes examination of experimental programs, trends and forces in secondary education and work in curriculum laboratory.
554. Competency in Teaching Reading (2) F Graham

Prerequisites: EI. Ed. 450, Sec. Ed. 457, a valid California teaching credential, one year of successful teaching experience. Required for those pursuing the State Reading Specialist Credential. An intensive appraisal of each candidate competencies in areas of theory, diagnosis, measurement, prescription methods/materials professional literature, motivation and professiona involvement.
555. Reading Diagnosis and Remediation (3) $S$ Graham

Prerequisites: Sec. Ed. 459, consent of instructor. Experience in using modern techniques to diagnose and treat reading disabilities at the secondary level and higher. Both group and individual, formal and informal tests are studied. Opportunity is given to diagnose and treat a reading disability case under supervision.
557. Problems in Secondary Reading Instruction (3) $F$ Graham

Prerequisites: Sec. Ed. 459 or equivalent, teaching experience. Advanced study f tequing produres in secondary, college and adult reading programs. Individual investigation of specific classroom problems. Emphasis upon research, trends and current issues
560. Evaluation of Curriculum and Instruction (3) F Marrs

Prerequisites: Sec. Ed. 421 or equivalent, teaching experience. Methods of ind instruction which will include the assessment and improvement of teacher achievement.
$581 \mathrm{~A}, \mathrm{~B}, \mathrm{C}$. Directed Field Experiences in Bilingual Cross-Cultural Education
$(3,3,3)$ F,S Faculty
Prerequisite: Admission to the Bilingual/Cross-Cultural Specialist Credential Program. Supervised field experience with minority youth in the public school and community setting. Application should be made by March 1 for the fall semester and October 1 for the spring semester.

583A-B. Student Teaching in the Community College (3,3) F,S Conroy
Open only to Community College Credential Candidates accepted by the Secondary Teacher Education Committee. Student will teach one three-hour class in her/his major field in a community college and have an additional assignment of hree hours per week, for scheduled observation, consultation with students, or small group teaching or laboratory. 583B may be taken for experience in minor field. Application should be made by March 1 for the fall semester and October 1 for the spring semester.
590. Special Problems in Secondary Education (1-3) F,S Faculty

Prerequisite: Consent of instructor. Advanced study of special topics and maters in enroll for one-three units to a prom maximum of sond course in content.
657. Clinical Practices in Secondary Reading (3) F,S Graham

Prerequisites: Sec. Ed. 555, consent of instructor. Practice in working with individual cases or small groups of retarded readers in classroom and laboratory settings. Clinical study of reading problems including perceptual, neurological, psychological and educational factors. Critical appraisal and practice with current recommended methods.

## 659. Seminar in Secondary Reading (3) $S$ Graham

Prerequisites: Sec. Ed. 557, 657, teaching experience in secondary reading and consent of instructor. Locating and using professional literature in secondary reading. Development of theoretical models and processes of reading. Integration of theory and research. Development and execution of research designs in secondary reading. Part of the Secondary Reading Specialist Credential program Laboratory and field trips when appropriate.
660. Advanced Field Work in Reading (3) F,S Graham

Prerequisites: Sec. Ed. 657, 659, approval by the Reading Committee Applications should be filed in the office of the Department of Secondary Education by March 1 for the fall semester and October 1 for the spring semester In-the-field participation, individual conferences and seminars directed toward the solution of problems evolving from reading programs, instruction and supervision.

## 695. Seminar in Secondary Education (3) F,S Jersin

Prerequisites: Advancement to candidacy, consent of graduate adviser. Advanced studies in secondary education including library research, research papers and oral examinations required of all master's degree candidates preparing to write the comprehensive examination for the M.A. degree in education, emphasis in secondary education, specialization in single-subject.

314 697. Directed Research (1-3) F
Prerequisites: Consent of instructor, department chair and associate dean individual research or intensive study under the guidance of a faculty member. A student may enroll for one-three units to a maximum of three units for a certificate and degree purposes, subject to suitable change in course content.

## 698. Thesis (1-6) F,S Faculty

Prerequisites: Advan, and associate dean Planning, preparation and completion of a thesis under supervision of a faculty committee. Must be taken for a minimum of four units

## EducationSingle Subject

## University Coordinator: Mrs. Jean Conroy

The Single Subject Credential under the provisions of the Ryan Act will allow the holder to teach only a specific subject area, grade 12 and below. "Single Subject instruction means the practice of assignment of teachers and students to specified subject matter courses, as is commonly practiced in California high schools and most California junior high schools."

Presently 13 specific areas of specialization are offered at this University General advisement may be obtained through the office the University Coordinator Single Subject Teacher Education, or the office of the Chairman of the Departmen of Secondary Education. Students seeking credential information for a specific major or concerning a credential in a second single subject area should contact the adviser listed below
Art, Dr. James Crafts; English, (Literature, Language and Composition, Creative Writing, American Studies, Dance, Comparative Literature, Journalism, Radio-TV, Speech) Dr. James Day or Dr. Jerry Sullivan; Foreign Language, French-Mr. Herbert Winter, German-Dr. Harvey Kendall, Spanish-Dr. Alfonso Archuleta; History, Dr. Irving Ahlquist: Home Economics, Mrs. Mabel Moore or Mrs. Bonnie Rader; Industrial Education Dr. James Ryan; Life Science, Dr. William Ritz; Mathematics, Mry Ruth Afflack; Music, Dr. Robert Anderson; Physical Mr. Robert Frice) Dr. Tom Morgan or Dr. LaVonne Stock; Physical Education, (Dance, Ritz; Political Science (Government) Dr. Irving Ahlquist; Social Science, Dr. William Ritz, Po Economics, Geography, History, Political Science, Science, (Anthropology, Economics, G Psychology, Sociology) Dr. Irving Ahlquist.
The first required education course is EDSS 300-Preliminary Directed Field
The first required educats this course as a prerequisite to the remaining Experience. Candidates mention sequence. Students must select the EDSS 300 section appropriate to the education sequence. Students to the Single Subject Teacher Education Program credential major. Applications satisfactory completion of EDSS 300. Students should will be processed following satisfactory consult a credential adviser for departmental and university requirements admission.

EDSS 300 acquaints candidates with pupils, affords firsthand experience in the work that teachers do, serves as the vehicle for the evaluation and screening process which determines acceptance into the credential program, and assists the student to determine whether teaching is the desired career.

Students will select one of the following professional education programs. EDSS

300 and admission to the Single Subject Teacher Education Program are prerequisites to either of these programs.
Sequential Course Program: EDSS 300, EdSe 310, EdSe 421, EDSS 450, EdSe 457, and EDSS 470A \& B, or EDSS 471A \& B.
Bilingual/Cross Cultural Program: EDSS 300, EdSe 435, EdSe 436, EDSS 450, EdSe
457, EDSS 470A \& B, or EDSS 471A \& B.
Additional Courses Required Prior To Final Directed Field Experience (Student Teaching)
These two courses may be taken concurrently with EDSS 300:

1. Health Science 411,
2. English Writing Requirement (English 300, 310 or 317) Note: If the Advanced Writing Test is passed, it will take the place of the English requirement
Requirements for the Preliminary Credential include completion of the following: a bachelor's degree, the U.S. Constitution requirement, the Health Science requirement, the English writing requirement, a single subject program, one of the professional education sequences, and student teaching.

300A-W. Preliminary Directed Field Experiences (2) F,S Faculty
Prerequisite: Advanced sophomore or junior standing. Directed field experience as a teacher aide. Evaluation of students for admission to the Single Subject Teacher Education Program required as the first course in the professional education sequence for the single subject credential and should be taken in the junior year. (Lecture 1 hour, laboratory/field 3 hours.) CR/NC only

## 300A. Preliminary Directed Field Experience (Art) (2) F Faculty

300C. Preliminary Directed Field Experience (Life and Physical Sciences) (2) F Faculty

300F. Preliminary Directed Field Experience (Foreign Languages-French, German, Spanish) (2) F Faculty

300G. Preliminary Directed Field Experience (English: Literature, Language and Composition, Creative Writing, Comparative Literature, Journalism, Speech, American Studies, Radio-Television and Dance) (2) F,S Brekke, Day

300H. Preliminary Directed Field Experience (Home Economics) (2) S Moore
3001. Preliminary Directed Field Experience (Industrial Education) (2) F,S Farr, Patcha

300M. Preliminary Directed Field Experience (Mathematics) (2) F Conroy
300 N. Preliminary Directed Field Experience (Music) (2) F, S Anderson
300P. Preliminary Directed Field Experience (Physical Education-Track I, Dance, Health Science) (2) F,S Sandefur, Wuesthoff

300S. Preliminary Directed Field Experience (Social Sciences, including Anthropology, Economics, Geography, History, Political Science, Psychology, Sociology) (2) F,S Faculty

300W.Preliminary Directed Field Experience (Physical Education-Track II, Dance Health Science) (2) F,S Baker, Franklin

450A. Curriculum and Methods of Art Education (3) S Faculty
Prerequisite: Admission to the Single Subject Credential Program. Objectives, Prem An historical and current practices in art teaching with emphasis on the relationship of art to the total school program. Must be completed prior to student teaching.
*450C. Curriculum and Methods in Teaching Natural Science (3) S Ritz
Prerequisite: Admission to the Single Subject Credential Program. Objectives, curriculum materials and procedures used in teaching science. Must be completed efore student teaching. (Lecture 2 hours, laboratory 3 hours.)

450F. Methods of Teaching Foreign Languages (3) S Faculty
Prerequisite: Admission to the Single Subject Credential Program. Procedures or teaching French, German, Latin or Spanish. Includes supervision of cocurricular foreign language activities. Should be taken the semester prior to student teaching.
*450G. Teaching English (3) F,S Borowiec, Brekke, Day, Sullivan
Prerequisite: Admission to the Single Subject Credential Program. Methods of eaching language, literature and composition in junior high school, senior high school and community college. Includes instruction in techniques of teaching. Must be completed before student teaching.
*450H. Methods and Curriculum in Home Economics Education (3) F Moore
Prerequisite: Admission to the Single Subject Credential Program. Objectives curriculum, methods and materials used in teaching home economics in secondary schools. Must be taken the sem ester prior to student teaching
*450I. Curriculum and Methods in Industrial Education (3) F,S Farr
Prerequisite: Admission to the Single Subject Credential Program. Objectives riculum mphasis on current practices and the relationship of industrial education to the total school program. Must be taken the semester prior to student teaching
*450M. Curriculum and Methods in Teaching Mathematics (3) S Dorn
Prerequisite: Admission to the Single Subject Credential Program. Objectives,curriculum, methods and materials used in teaching mathematics. Must be taken prior to the final directed field experience.
*450N. Curriculum and Methods in Teaching Music (3) F,S Winslow
Prerequisites: Admission to the Single Subject Credential Program, major or minor in music. Philosophy, objectives, curriculum, materials, procedures and current practices in teaching music in secondary schools. Classroom music instrumental and vocal music methods are presented. Should be taken the semester prior to student teaching.
*450P. Curriculum and Methods in Teaching Physical Education (3) F,S Bartlett, Franklin, Morgan
Prerequisite: Admission to the Single Subject Credential Program. Limited to tudents qualified to enroll in student teaching the following semester. Curriculum legal aspects, methods and materials used in teaching physical education Students are assigned to physical education activity courses as cadet teachers, in addition to classroom lectures. Students must meet minimum activity skill performance standards where appropriate. Not open to students with credit in EDSS 450W.
*450S. Curriculum and Methods of Teaching Social Science (3) F,S Faculty
Prerequisite: Admission to the Single Subject Credential Program. Objectives ethods and materials for teaching social science in junior and senior high school Must be taken prior to student teaching

## 470A-B. Final Directed Field Experience (5,5) F,S Conro

Prerequisite. Acceptance of the student by the University Single Subject Teacher Education Committee for student teaching for the Single Subject Credential and permission of the Single Subject Credential adviser. Only students who will have assignments to teach concurrently at two different schools or who will have assignments have two different university supervisors should register for 470A-B. Students will teach three regular classes daily for which they have as complete responsibility as district policy will allow. For an additional two periods daily the students will engage in faculty enterprises and consult with school and University supervisors. CR/NC only.

471A-B. Final Directed Field Experience (5,5) F,S Conroy
Prerequisites: Acceptance of the student by the University Single Subject Prerequisites: Acceptance of the student by the University Single Subject
Teacher Education Committee for student teaching for the Single Subject Credential and permission of the Single Subject Credential advisor. Only those students whose student teaching assignment does not follow the pattern requiring them to enroll in 470A-B should enroll in 471A-B. Students will teach three regular classes daily for which they have as complete responsibility as district policy will allow. For an additional two periods daily the student will engage in faculty enterprises and consult with school and university supervisors. CR/NC only.

## School of Engineering

## Dean: Dr. Richard C. Potte

Associate Dean: Mr. Willard H. Reed.
Administrative Assistant: Maxine McCurnin
Emeriti- Cecil V. Armour, Ernest G. Brind, John H. Dudley, Richard W. Leutwiler, Jr. Rodney C. Lewis, William D. Mcllvaine, Harold T. Miller, Herluf P. Nielsen, Rodert E Vivian Harold W Washburn

The School of Engineering offers four-year curricula leading to bachelor of science degrees in nine engineering disciplines which provide broad education and training for entry to the engineering profession and for continuing acaded in civil, owards an advanced degree. The master of science degree degree, the master electrical and mechanical engineering, and an of science degree in engineering, is offered also. The undergraduate program includes a minimum of 132 semester units and provides opportunity in the upper division to specialize in the areas of biomedical, chemical, civil, computer, electrical, industrial-management, materials, mechanical and ocean engineering. electrical, industrial-management, materials, materials, mechanical and ocean The options in civil, computer, electrical, engineering are accredited by the Engine are available in evening or Saturday Development. Many of the engineering courses are avail
lasses primarily for those employed in tocal enter engineering is advised to pursue a
The high school student planning to enta include strong program in pre-engineering subjects. Trienometry and one year of biology, physics, chemistry, advanced algebra, trigono mechanical drawing in addition to the general requirements for admission University. Deficiencies in some of the above areas may result in an extension of he time required to complete a program in engineering.
The curricula The curricula colleges such as the community colleges and engineering liberal arts colleges. Transfer students should note

## Engineering Advisory and Development Counci

The Engineering Advisory and Development Council for the School of Engineering consists of outstanding engineers and executives from industry and
 gone University and industry and to keep the on modern engineering practices. This will administration and faculty informed of mill also advise on insure that the curricula are kept abreast of the consists of the following

Mr. Willard Bascom, Director
Southern California Coastal Water Research Project
Mr. Raymond F. Berbower, Assistant Chief Harbor Engineer,
Port of Long Beach
Mr. Frank S. Bole, Partner,
Bole \& Wilson, Civil Structural Engineers
Mr. Hugh C. Carter, Chairman of the Board
Hugh Carter Engineering Corporation
Mr. Delmar R. Johnston, President
Pacific Valves, Inc.
Mr. Donald L. Kinnsch, Chief Plant Design Engineer Bechtel Power Corporation
Mr. Kenneth F. McQuade, Vice President and General Manager Space and Secure Telecommunications Systems Division Rockwell International Corporation
Mr. Robert D. Nichol,
Moffat and Nichol Engineers
Mr. H. George Osborne, Director
Orange County Environmental Management
Mr. J. M. Palmer, Jr., Branch Chief
Research and Development, Douglas Aircraft Co.
Dr. Russell Riese, Chief Higher Education Specialist
California Post Secondary Commission on Education
Mr. John Rodgers, President
Automatic Instrument Service
Mr. Martin S. Simon, Vice President Operations
Edgington Oil Company
Mr. Duane H. Simpson, Vice President, Engineering
Fluor Engineers \& Constructors
Mr. Edward M. Twining, President
Twining Laboratories of Southern California, Inc.
Dr. Edward Van Driest
Rand Corporation
Dr. Robert E. Vivian, Dean Emeritus
CSULB School of Engineering

## Engineering Facilities

The engineering buildings house the School of Engineering and permit all engineering laboratory and design facilities, school and departmental offices and faculty offices to be grouped in a central location. The five-story engineering building provides ample laboratory, classroom and office space for expanding programs. The complex includes laboratory facilities in each of the instructional areas described in the following paragraphs.

## Engineering Liaison Committee Statement

The School 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 the 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 further, assuming normal progress, said student can complete an engineering upon transfer, that the student has completed at least 50 percent of the graduation
unit requirement in that program. Completion of a specific program of the student's choice will be dependent upon the proper selection of elective courses.

| Subject Area | Semester <br> Units | Quarter <br> Units |
| :--- | ---: | ---: | ---: |
| Mathematics (beginning with analytical geometry and | 16 | 24 |
| calculus and completing a course in ordinary |  |  |
| differential equations) |  |  |
| 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 |

Electric circuits
11-15
17-23

## Concurrent and/or Summer Enrollment in Another College

Students who wish to take course work in a community college or another college to meet curricular requirements while enrolled as an undergraduate in the School of Engineering must petition the appropriate department for prior approval to enroll in specific courses. This policy is for either concurrent enrollment or summer enrollment. University policy must also be complied with. (See "Concurrent Enrollment" and "Transfer of Undergraduate Credit" in this Bulletin.) Courses not receiving prior approval will not be accepted for credit by the department.

## Dual Degree Program

Students wishing to combine a professional engineering education with one in business, education, fine arts, humanities or the sciences may enter the Dual Degree Program. The School of Engineering at CSULB has agreements wionts to do schools within the University and with other institutions which allow students this. After three years at the first institution, students transfer to CSULB as juniors to complete the two final years of engineering study. At the end of the first year at CSULB students who have completed all of the requirements for their first degree CSULB, students are awarded that degree by the appropriate school or institution. At receive their
fifth year students who have completed all engineering requirements receiver engineering degree.

## Master of Science Degree in Engineering (code 6-4301)

## Graduate Adviser: Willard H. Reed

Graduate Committee: Alexander, Gilpin, Lindquist.
The School of Engineering offers graduate study programs for the master of science in engineering. This program is accredited by the Engineers' Council for Professional Development. Typical tasks and responsibilities undertaken by srofessional students traing engineal and mechanical engineering. The specialties in engineer an interdisciplinary program selecting courses from the student may pursue an andion information concerning the various departments of engineering. Additional possibilities is obtainable programs, special facilities, laboratories and research possibilities is obtainable from the School of Engineering.

## Prerequisites

1. A bachelor's degree in an accredited curriculum in engineering, or:
2. A bachelor's degree in engineering, mathematics or a natural science or other appropriate discipline with the requirement that essential undergraduate prerequisites in engineering be satisfied.
11-79140
3. Graduate students must consult with the graduate adviser for information concerning procedures and requirements for appropriate approval of their courses of study prior to enrolling in their graduate programs

## Advancement to Candidacy

1. Removal of all undergraduate deficiencies as determined by the School Graduate Study Committee.
2. Students, at the discretion of the School Graduate Study Committee, may be required to take examinations in their chosen areas.

## Requirements for the Master of Science

1. Completion of a minimum of 30 units beyond the bachelor's degree in upper division and graduate courses approved by the student's School of Engineering Graduate Study Committee, including:
a. A minimum of 21 units in engineering or mathematics courses with 15 units of 500 and/or 600 level courses in engineering. Within the 15 units of 500 and/or 600 courses, a thesis student may not include directed research.
b. Nine units of electives selected from approved upper division or graduate courses from appropriate areas.
c. A thesis or project and/or comprehensive examination

## Graduate Courses

See graduate courses listed under civil, electrical and mechanical engineering

## Chemical Engineering

Department Chair: Dr. John M. Lenoir.

## Professors: Hile, Lenoir

Undergraduate Adviser: Dr. John M. Lenoir.
Chemical engineering is concerned with the conversion of chemical materials into products of increased economic utility and benefit to consumers.
into produchericulum gives the student a thorough background
The chemical engineering curriculum gives in chemistry, mather problems as well as potentia and analysis to be applied to current as technical problems that might arise in the future. The abjectives in industry to preparation for immediate employment as a chemical engineer in industry, to provide a basis for later graduate study and research or to offer a back
possible advanced study in business administration, marketing or law.

All chemical engineering students must have received a minimum grade of $\mathbf{C}$ in each of the prerequisites for any chemical engineering course. In addition to any other all-university requirements regarding grade point average for graduation, a ormine mine a minimum 2.0 average in all chemica engineering courses attempted.

## Chemical Engineering Professional Advisory Council

The Chemical Engineering Professional Advisory Council has been established in the belief that it would provide a positive influence in maintaining and further developing a program that reflects a consciousness of the need for technica excellence and a realistic view of industrial needs. Current members of the counci are:

Mr. Jack Brocoff, Ralph M. Parsons, Co
Dr. Richard G. Ischinger, Fluor Engineers and Constructors, Inc
Mr. George Keller, Franctionation Research, Inc.
Ms. Marie La Fond, Atlantic Richfield Co.
Mr. Carl H. Unruh, CF Braun \& Co.
Mr. John R. Williams, Atlantic Richfield Co.

## Bachelor of Science Degree in Chemical Engineering (code 3-4320)

Lower Division: Chemistry 111A-B, 251, 251L; C.E. 101, 205; E.E. 210, 210L; Mathematics 122, 123, 224; M.E. 172; Physics 151, 152; Ch.E. 200, 205
pper Division: Ch.E. 310, 320, 330, 410, 420, 430, 440, 450, 460, 470; C.E. 406; M.E 425; Chemistry 321A, 322, 371A, 372; Mathematics 370A; Economics 300; 3 units of approved engineering electives; 3 units of technical writing; approved electives to total 132 units.

## Lower Division

200. Chemical Engineering Fundamentals (3) F,S Hile

Prerequisites: Chemistry 111A, Mathematics 123, Physics 151. Dimensional analysis of units, steady and transient balances of mass, momentum and energy, the mathematical solution of chemical engineering problems. (Lecture-problems 3 hours.)
205. Computer Methods in Chemical Engineering (2) F,S Hile

Prerequisites: Chemistry 111A, Mathematics 122, Physics 151. Beginning Fortran programming applied to typical problems in chemical engineering and chemistry. Not open to students with credit in Chemical Engineering 305. (Lecture-problems 1 hour, laboratory 3 hours.)

## Upper Division

## 00. The Chemical industry (2) $F$ Hile

Prerequisite: Chemistry 111A. Survey of industrial chemical processing Phniques and the activities of engineers in this area, illustrated by field trips, speakers, professional society meetings, films, readings, etc. (Lecture-problems 1 hour, laboratory 3 hours.)
310. Chemical Engineering Thermodynamics I (3) F,S Lenoir

Prerequisites: Chemistry 111A, Mathematics 123. Thermodynamics of real gases and liquids, thermodynamic functions, relations between heat and work, application to chemical engineering processes. (Lecture-problems 3 hours.)
320. Fluids (3) F,S Lenoir

Prerequisites: Ch.E. 200, C.E. 205. Study of the deformation and flow of fluids, oth liquids and gases, with applications to chemical engineering. (Lectureproblems 3 hours.)

## 330. Separation Processes (4) F,S Hile, Lenoi

Prerequisites: Ch.E. 200, 205. Computation methods for predicting the separation of materials by distillation, absorption, extraction and other methods. (Lectureproblems 3 hours, laboratory 3 hours.)
410. Chemical Engineering Thermodynamics II (3) F,S Lenoir

Prerequisite: Ch.E. 310. Multiphase properties including advanced equations of state (Lecture-problems 3 hours.)

## 420. Heat and Mass Transport (3) F,S Hile, Lenoir

Prerequisite: Ch.E. 320. Heat exchange by conduction, convection and radiation. Diffusion in fluids and solids. Simultaneous heat and mass transport. (Lecture, problems 3 hours.)

## 425. Polymer Synthesis and Characterization (3) S Hile

Prerequisite: Chemistry 321A or consent of instructor. Physical and chemical poncepts in the production of polymers. Relation of the chemical structure to bulk properties of plastics. Laboratory synthesis of polymers and their mechanical, hermal 2 hours, laboratory 3 hours.)

## 430. Chemical Reactor Kinetics (3) F,S Hile, Lenoir

Prerequisite: Chemistry 111A. Homogeneous and heterogeneous reactions and application to reactor design, catalysts. (Lecture-problems 3 hours.)
440. Chemical Engineering Laboratory I (2) F Hile

Prerequisites: Ch.E 310, 320, 330. Laboratory study of fluid mechanics, Prequ proces and thermodynamics. Experimental design and analysis and preparation of engineering reports. (Laboratory 6 hours.)
450. Chemical Engineering Laboratory II (2) S Hile

Prerequisites: Ch.E. 420, 430, 440, 460 (may be taken concurrently). Laboratory Prady of heat and mass transport, chemical kinetics and control theory. (Laboratory 6 hours.)

## 460. Chemical Process Control (3) F,S Faculty

Prerequisites: Ch.E. 420, 430; E.E. 210, 210L. Control theory and practice ploping electrical analogs of processes, root-locus and Bode plots and stability criteria. (Lecture-problems 3 hours.)

470 Chemical Engineering Design (4) F,S Lenoir
Prerequisites: Ch.E. 310, 330, 420, 430. Design based upon economics and chemical engineering design and analysis. (Lecture-problems 3 hours, problemdesign session 3 hours.)
475. Environmental Pollution (3) $F$ Hile

Prerequisites: Chemistry 111A-B. Recommended: Chemistry 321A, 371A Application of chemistry to the problems of pollution. (Lecture-problems 3 hours.)
480. Theoretical Methods in Chemical Engineering (3) S Hile

Prerequisites: Ch.E.205,310, 420, 430. Simulation and optimization of chemical engineering processes by mathematical formulation and computer modeling (Lecture-problems 3 hours.
490. Special Problems (1) F,S Faculty

Prerequisite: Consent of instructor. Assigned topics in technical literature or laboratory projects and reports on same

## Civil Engineering

## Department Chair: Dr. M. Gamal Mostafa

Emeriti: Cecil V. Armour, John H. Dudley, William D. Mcllvaine, Harold T. Miller Professors: Al-Chalabi, Alexander, Chelapati, Eshett, Mostafa, Neidengard, Reed Yen, Ying, Zagustin

## Associate Professors: Bakker, Chu, Plecnik

## Visiting Associate Professor: Rao

## Undergraduate Adviser: Dr. K.T. AI-Chalabi.

Graduate Adviser: Dr. Robert L. Alexander
Graduate Committee: Bakker, Chelapati, Mostafa, Neidengard, Yen, Ying.
The Department of Civil Engineering offers an option designed to give the ints a broad educational background essential to modern civil engineering around a basic core of mathematics, natural and ngineering sciences common to accredited professional engineers' programs. It planned to give a selection of basic engineering-science education to enable the解俍 or prepare for graduate study systematic and integrated foundation in the principles, geotechnical engineering, design, transportation systems, environmental systems, are a particular area of interest is offered in the wide selection pivil engineering electives to permit students a sequence of courses related to he area of their choice
The four engineering buildings house laboratory facilities in fluid mechanics and hydraulics materials of construction, transportation, soils and foundations, tructures,

The Department of Civil Engineering offers graduate study programs leading to he degrees of master of science in civil engineering (M.S.C.E.) and civil engineer (C.E.). These programs provide opportunities for graduate students to develop as civil engineers capable of profitable research, design, and application through and science, permitting a concentration in the student's area of interest
Areas of specialization include: environmental engineering, hydraulics and Ars and foundations, structural engineering, astal engineering, soil andional information transportation engineering and urban engibilities concerning the programs, special facilities, laboratories and resear Bulletins. is contained in the Civil Engineering Department Bulletins

Some graduate laboratory and teaching assistantships are available to qualified raduate students. Applications should be sent to the department chair.

## Civil Engineering Professional Advisory Council

The Civil Engineering Professional Advisory Council provides a link between the department and the community served by the University. It provides for an exchange of ideas related to the engineering profession and education. The council assists the department as appropriate and recommends on matters pertinent to the graduate and undergraduate programs. Current members of the council are:

Dr. Mihran S. Agbabian, Agbabian Associates, El Segundo
Mr. Sigmund A. Burke, Fluor Engineers \& Constructors, Inc., Irvine
Ms. Adele B. Dunham, Jacobs Engineering Co., Pasadena
Mr. Roy G. Johnston, Brandow \& Johnston Associates, Los Angeles
Mr. John Maulding, Los Angeles County Department of Engineers
Dr. W. J. Nordell, Civil Engineering Laboratory, U.S. Navy, Port Hueneme
Mr. Alfonso Robles, Jr., Department of the Army, Corps of Engineers
Mr. William J. Soto, Lowry \& Associates, Irvine
Mr. James Williams, Environmental Management Agency, Orange County
President, CSULB Student Chapter American Society of Civil Engineers
President, Chi Epsilon, Civil Engineering Honor Society

## Bachelor of Science Degree in Civil Engineering (code 3-4325)

Lower Division: C.E. 101, 200, 205, 206, 225; M.E. 172; Mathematics 122, 123, 224; Chemistry 111A; Physics 151, 152, and one course from Chemistry 111B, Ch.E. 200 or Physics 153.
Upper Division: Mathematics 370A; C.E. 305, 306, 335, 345, 346, 359, 406, 426, 437, 458, 459, 464, 464L, 481; Geology 370; M.E. 330, 371, 373; E.E. 311; any two laboratories selected from C.E. 336, 356, 491, M.E. 331, 374; an upper or lower division course in economics; electives to total 132 units including no fewer than 12 units of upper division civil engineering courses not specified for the degree. Nine of the above 12 units of civil engineering must be selected from the design courses C.E. 427, 438, 445, 455, 456, 457, 466, 492.

## Certificate in Solid Waste Management

## Director: Mr. Willard H. Reed

The 24 -unit Certificate Program in Solid Waste Management is designed to provide the interested student or qualified practitioner with the very latest in education and training in the field management of solid waste as well as related resource and energy recovery.
The program will be conducted in cooperation with local engineering consulting irms and government agencies and will require an internship of three units.
The 24 -unit certificate program may be taken (1) by a baccalaureate candidate as part of the undergraduate program, (2) by a graduate as a matriculated student, (3) by a graduate as a nonmatriculated student through the concurrent enrollment process of continuing education.
Regardless of how the program is taken, a grade of $C$ or better must be obtained in all courses applying to the certificate. Courses taken on CR/NCR or audit basis will not apply to the certificate. Graduate students taking courses in this program are reminded that grades received will be included in calculations of the M.S requirement.

## Requirements for the Certificate:

1. Completion of a baccalaureate degree which may be awarded concurrently.
2. Satisfactory completion of 24 units which must include 18 units of requirements: Civil Engineering 408, 460, 461, 462, 463, 464; a minimum of three units selected from the following: Civil Engineering/Mechanical Engineering 405 (when offered in the Solid Waste Management field), 406,

468; a minimum of three units selected from the following: Civi Engineering/Mechanical Engineering 405 (when offered in the Solid Waste Management field), 407,465,469; students are also encouraged to take 464L.

## Master of Science Degree in Civil Engineering (code 6-4325)

## Prerequisites

1. A bachelor's degree in an accredited curriculum in civil engineering, or:
2. A bachelor's degree in engineering, a natural science or other appropriate discipline with the requirement that essential undergraduate prerequisites in civil engineering be satisfied
3. Graduate students must consult with the graduate adviser for informatio concerning procedures and requirements for appropriate approval of their courses of study prior to enrolling in their graduate programs.

## Advancement to Candidacy

1. Removal of all undergraduate deficiencies as determined by the Department Graduate Study Committee.
2. Students may, at the discretion of the Department Graduate Study Committee, be required to take examinations in their chosen areas.

## Requirements for the Master of Science

Completion of a minimum of 30 units beyond the bachelor's degree in upper division and graduate courses as follows:
a. A minimum of 21 units in engineering and mathematics courses with 18 units of 500 and/or 600 level courses in civil engineering. Within these 18 units a student may include six units of C.E. 698, Thesis, or three units of C.E. 697, Directed Studies. No student may include more than three units of C.E. 602 within these 18 units.
b. Six units of electives selected from approved upper division or graduate courses from appropriate areas.
C. Fulfill the requirements in option 1,2 or 3

Option 1 - Write and present orally a thesis to be approved by the thesis committee.
Option 2-Write and present orally an approved paper on a directed study and pass a comprehensive examination on related course work.
Option 3-Pass a comprehensive examination on course work in her/his graduate program.

Civil Engineer Degree (code 7-4324)
The program leading to the civil engineer degree offers the qualified student professionally oriented courses with greater concentration in civil engineering than is required by the master of science in civil engineering. This program encourages appropriate advanced studies in other disciplines of the University.

## Prerequisites

1. A master of science degree in civil engineering from an accredited institution with a minimum GPA of 3.5 ; or
2. A bachelor of science degree in civil engineering from an accredited institution with a minimum GPA of 3.0 ; or
3. A bachelor of science degree in engineering, mathematics, physical sciences 3. A bacher andiation accredited institution with a minimum GPA of 3.0 with the requirement that essential undergraduate minimum GPA in civil engineering will be satisfied prior to commencing the prerequisites in civil engineering
student's civil engineering degree program.
student's civil engineering degree program.
4. The graduate student must consult with the graduate advion concerning Engineering Departmen ap apropriate approvals of departmental procedures and requirements and for appropriate approvals of
the course of study prior to enrolling in courses in the student's graduate program.
Exceptional cases not meeting the above minimum GPA may be considered by the Departm ent Graduate Studies Committee.

## Advancement to Candidacy

1. A Department Graduate Study Committee, consisting of the graduate student's adviser, and at least two other faculty members, will be responsible for the formulation and supervision of each individual graduate student's program.
2. The committee shall determine candidacy admission requirements as to removal of undergraduate and/or graduate prerequisite deficiencies.
3. Prior to determining advancement requirements the committee may, at its discretion, require the student to take an examination in the chosen area

## Requirements for the Civil Engineer Degree

1. Completion of a minimum of 60 units beyond the bachelor's degree in upper division and graduate courses, approved by the student's Departmen Graduate Study Committee including:
a. A minimum of 36 units of 500 and 600 level civil engineering courses including a thesis of nine units to be written and presented orally.
b. Twenty-four units of 400,500 and 600 level approved electives.
2. No more than 30 units completed before advancement to candidacy may be used in completing the requirements for the C.E. degree.

## Lower Division

101. Introduction to Engineering and Engineering Design (1) F,S Faculty Elementary application of engineering methods to case histories. (Lecturediscussion 1 hour.)
102. Materials of Engineering Construction (2) F,S Alexander

Prerequisites: Chemistry 111A. Physics 151. Use, properties and limitations of materials of engineering construction. (Lecture-problems 1 hour, laboratory 3 hours, field trips.)
205. Analytical Mechanics I (Statics) (3) F,S Faculty

Prerequisite: Physics 151; prerequisite or co-requisite: Mathematics 123. Application of the mechanics of equilibrium to force systems using analytical and graphical solutions of problems involving structures and machines. (Lectureproblems 3 hours.)
206. Computer Programming and Civil Engineering Applications 1 (2) F,S Ying
Prerequisites: Mathematics 122 Physics 151. Introduction to Fortran rogramming and application of computers to elementary civil engineering problems. (Lecture-problems 1 hour, laboratory 3 hours.)

## 225. Surveying and Mapping (3) F, S Faculty

Prerequisite: M.E. 172. Theory and practice of plane surveying including the use Prerequis and keeping field notes of distances, angles elevations, traversing and plane tabling. Plotting of surveying data as related to elevations, travers and topography. Study and interpretation of maps relating to civil cartography. (Lecture-problems 2 hours, field work 3 hours.)

## Upper Division

305. Technical Communications (3) F,S Neidengard

Prerequisite: English composition. Various oral, written, symbolic and numerica methods of recording, processing and transmitting technical information. (Lecture problems 3 hours.)
306. Computer Programming and Civil Engineering Applications II
(2) F,S Chelapati, Ying

Prerequisite: C.E. 206. Application of numerical methods and computer programming to the solution of civil engineering problems. (Lecture-problems 1 hour, laboratory 3 hours.)

## 335. Fluid Mechanics (3) F,S Chu, Eshett, Mostaf

Prerequisites. Mathematics 224, C.E. 205 or consent of instructor. Properties of fluids fluid statics, fluid dynamics, dynamic similitude, flow of compressible and incompressible fluids in closed conduits, uniform flow in prismatic open channels. (Lecture-problems 3 hours.)
336. Fluid Mechanics Laboratory (1) F,S Faculty

Prerequisite or co-requisite: C.E. 335. Experiments in and study of the phenomena of fluid flow. (Laboratory 3 hours.)
345. Soils and Foundations (3) F,S Al-Chalabi, Yen

Prerequisites: M.E. 373, Geology 370. Soil mechanics applied to engineering tructures. Soil exploration, identification, classification, drainage, stability and bearing capacity. (Lecture-problems 3 hours.)
346. Soils and Foundations Laboratory (1) F,S Al-Chalabi, Yen

Prerequisites: C.E. 200, 305, prerequisite or co-requisite: C.E. 345. Laboratory investigation and experiments in the phenomena of soil mechanics. (Laboratory 3 hours.)
556. Concrete and Masonry Laboratory (1) F Alexander

Prerequisite: M.E. 373. Experimentation and study of Portland cement concrete, mortar, masonry units and grout. (Laboratory 3 hours.)

## 59. Structural Analysis I (3) F, S Chelapati, Ying, Zagusti

Prerequisite: ME 373. Analysis of determinate and indeterminate structures Prerequ trusses, beams and frames, conjugate beam, virtual work, energy解
401. Engineering Analysis I (3) F Eshett

Prerequisite: Mathematics 370A Application of analytical methods to gineering problems. Differential equations and series solutions, Bessel functions and Legendre polynomials, boundary value and eigenvalue problems, Fourier series, partial differential equations, vector analysis. Same course as M.E 401. (Lecture-problems 3 hours.)

## 402. Engineering Analysis II (3) S Eshett

Prerequisite: Mathematics 370A. Analysis of engineering mechanics by matrix heory and complex variables; introduction to numerical techniques. Same course as M.E. 402. (Lecture-problems 3 hours.)
403. Applications of Statistical Methods (3) S Eshett Prerequisite: Mathematics 370A. Civil engineering applicatio deterministic models and decision theory. (Lecture-problems 3 hours.)
*404. Laboratory Techniques (1) F, S Faculty
P. Labsing in civil engineering and consent of instructor Prerequisites: Senior stand of organizing and directing of the civil engineering Study in the techniques of organizing and credit of 3 units. (Conference 1 hour, laboratory. May be
laboratory 3 hours.)
*405. Special Topicsin Civil Engineering (3) F,S Faculty
Prerequisite: Senior standing in civil engineering or consent of instructor Selected topics from recent advances in civil engineering. Course content will vary Sected (Maximum credit 6 units. Lecture-problems 3 hours.)
*406. Engineering Economy and Administration (3) F,S Faculty
Prerequisite: Senior standing or consent of instructor. Engineering management principles and economic analysis with emphasis on time value of money. (Lectureprinclemes 3 hours.)

## 407. Urban Engineering (3) F Neidengard

Prerequisite or co-requisite: C.E. 464 or consent of instructor. Administration coordination and planning of city engineering departments. (Lecture-problems 3 hours.)
408. Special Problems (1-3) F,S Faculty

Prerequisite: Senior standing in civil enigineering. Assigned topics in technical literature or laboratory projects and reports on same.
*409. Computer Methods in Civil Engineering (3) S Ying
Prerequisite: C.E. 206 or consent of instructor. Numerical analysis and compute methods applied to various branches of civil engineering, including special problem oriented languages. Not open to students with credit in C.E. 306. (Lecture problems 3 hours.)

## *420. Higher Surveying (3) F Faculty

Prerequisite: C.E. 225. Advanced techniques in surveying. (Lecture-problems 2 hours, field work 3 hours.)
*426. Transportation Engineering (3) F,S Alexander, Neidengard
Prerequisites: C.E. 200, 305 or consent of instructor. Theory, design and operation of various modes of transportation. (Lecture-problems 3 hours.)
*427. Highway Design (3) S Alexander
Prerequisite: C.E. 345. Design problems in highway engineering. Design project. (Lecture-problems 3 hours.)
*428. Engineering Photogrammetry (3) S Faculty
Prerequisite: Senior standing or consent of instructor. Aerial photogrammetry, principle and interpretation as related to cartography, triangulation, highway design, soil surveys, city planning and route location. (Lecture-problems 2 hours, laboratory 3hours.)

## *429. Traffic Engineering (3) F Faculty

Prerequisite: C.E. 426 or consent of instructor. Traffic engineering as related to studies, planning, operation and administration. (Lecture-problems 3 hours.)
*435. Hydrology (3) F Eshet
Prerequisite: C.E. 335. Fundamental surface and ground water hydrology, concepts and quantitative methods. Selected topics and procedures of the hydrological cycle. (Lecture-problems 3 hours.)
*436. Water Resources Engineering (3) S Bakker, Chu
Prerequisites: C.E. 406, 464 or consent of instructor. Economics, planning, development and management of water resources. (Lecture-problems 3 hours.)
*437. Open Channel Hydraulics (3) F,S Mostafa
Prerequisites: C.E. 335, Mathematics 370A. Theory and analysis of steady uniform and non-uniform flow in open conduits. Energy and momentum principles, critical flow computations and applications, design of channels, computations of gradually varied, spatially varied and rapidly varied flows. (Lecture-problems 3 hours.)
*438. Hydraulic Engineering Design I (3) S Chu, Mostafa Prerequisite: C.E. 335. Application of hydrauk pructures and devices. (Lecture Per courses, water systems and their related structures and devices. (Lecture problems 3 hours.)
*439. Marine Civil Engineering (3) F Chu Prerequisite. Senior standing with a background in natural science or andication of engineering principles to problems of the coastal and estuarine environments. (Lecture-problems 2 hours, sea laboratory 3 hours.)
*445. Soil Mechanics in Engineering Practice (3) F Yen
Prerequisites: C.E. 345, 346 or consent of instructor. Methods of design and construction of various soil engineering projects utilizing theory of soil mechanics. (Lecture-problems 3 hours.)
*455. Structural Steel Design (3) F,S Chelapati, Plecnik
Prerequisite C.E 359. Detailed design of structural steel components with typical codes and specifications. (Lecture-problems 3 hours.)
*456. TimberDesign (3) F,S Faculty
Prerequisite: C.E. 359. Design of stressed skin panels, supporting members, frames and their connections. Applications to timber structures and concrete form work. (Lecture-problems 3 hours.)

## 457 Reinforced Masonry Design (3) F,S Amrhein

Prerequisite: C.E 359. Theory, design and application of reinforced masonry brick and block) in compliance with the Uniform Building Code. Earthquake rovisions Construction and specifications. Design of high rise buildings, industrial buildings, retaining walls. (Lecture-problems 3 hours.)
58. Structural Analysis II (2) F,S Faculty

Prerequisite: C.E. 359. Solution of indeterminate structures using moment istribution and slope deflection methods. Introduction to matrix methods Computer solutions. (Lecture-problems 2 hours.)
459. Reinforced Concrete Design I (3) F,S Chelapati, Rao, Ying

Prerequisite: C.E. 359. Theory and design of structural elements of reinforced concrete, analysis by working stress and ultimate strength design theories. (Lecture-problems 3 hours.)
*460. Environmental Impact (3) F,S Faculty
Historical perspective of environmental legislation, laws and acts. Physical quality. Socio-economic factors in environmental quality ase studies and EIS's. (Lecture-problems 3 Evaluati
*461. Solid Waste Engineering Principles (3) S Faculty
Prerequisite: Upper division standing in engineering or consent of instructor Overview of management practices, technology, regulations, characteristics of waste, disposal options, resource recovery systems, hazardous wastes and waste reduction as related to municipal solid waste. Laboratory demonstrations, field trips, group projects. (Lecture-problems 3 hours.)
*462. Recycle Engineering and Systems Management (3) F Faculty
Prequisite: Upper division standing in engineering or consent of instructor Engineering aspects of recycling including design and environmental impact of solid waste recycling systems. Introduction to the theory, economics, legalities and politics of managing and engineering resource recovery systems. (Lectureproblems 3 hours.)
*463. Land Environment Engineering (3) F Bakker
Prerequisite or co-requisite: C.E. 464 or consent of instructor. Engineering aspects of optimal land utilization including modification of current land use practices, reclamation and reassignment. (Lecture-problems 3 hours.)
*464. Environmental Engineering (3) F,S Bakker
Prerequisite: Senior standing in engineering of consent of instructor. Study, simulations and design of the environmental elements of a community. Master simulations and design of tanning and Environmental Impact Analysis. (Lecture-problems 3 hours.)
*464L. Environmental Engineering Laboratory I (1) F,S Bakker
Prerequisite or co-requisite: C.E. 464. Standard methods of water and waste analysis. Field trips. (Laboratory 3 hours.)

## *465. Water Environment Engineering (3) S Faculty

Prerequisite or co-requisite: C.E. 464 or consent of instructor. Engineering aspects of optimal water utilization and water quality modification and maintenance. (Lecture-problems 3 hours.)
466. Environmental Systems Design (3) S Faculty

Prerequisite: C.E. 437, prerequisite or co-requisite: C.E. 464 or consent of instructor. Parameters and design of (1) water distribution systems, (2) waste water collection systems, (3) storm water collection and transportation systems. (Lectureproblems 3 hours.)
*468. Marine Pollution Control (3) F, S Faculty
Prerequisite: C.E. 464 or consent of instructor. Marine and domestic pollution of coastal and estuarine waters. (Lecture-problems 3 hours.)
*469. Air Environment Engineering (3) S Faculty
Prerequisite or co-requisite: C.E. 464 or consent of instructor. Engineering aspects of optimal atmosphere utilization including natural and technological modification, quality concepts. (Lecture-problems 3 hours.)
*470. Engineering Contracts and Specifications (3) F Faculty
Prerequisites: C.E. 200, 301. Principles of contracts and specifications, codes drawings and estimates. Applications of business law to engineering. Not open to students with credit in Civil Engineering 400. (Lecture-problems 3 hours.)
*471. Cost Estimating and Bidding (3) S Faculty
*47. Cost Estimating and Prerequisites: C.E. 426, 459. Construction cost estimare-problems 3 hours, field trips.)
*472. Engineering Project Techniques (3) F Faculty
Prerequisites: C.E. 406, 426. Principles of large engineering projects and the techniques of construction. (Lecture-problems 3 hours, field trips.)

## *473. Project Management (3) S Faculty

Prerequisites: C.E.200, 206, 305. Theory and application of logic and curren the planning, scheduling and managing of engineering projects. No open to students with credit in Civil Engineering 403. (Lecture-problems 3 hours.)
481. Professional Practice in Civil Engineering (1) F,S Chelapati, Neidengard Prerequisite: Senior standing. Topics related to practice of civil engineering profession. Professional society meetings and readings. (Lecture-problems 1 hour.)

## *482. City Planning (3) S Neidengard

Prerequisite: Senior standing in civil engineering or consent of instructor. History and analysis of events influencing the physical growth of cities. Evolution of city planning. (Lecture-problems 3 hours.)
*491. Structures Laboratory (1) F Plecnik Prerequisites or co-requisites:
concepts. (Laboratory 3 hours.)
*492. Reinforced Concrete Design II (3) F Faculty
Prerequisites: C. . 458, 459. Complete integrated design of structural systems in concrete. Code provisions. (Lecture-problems 3 hours.)
494. Finite Element Methods I (3) S Plecnik Introduction to finite element Prerequisite: C.E. 458 or consent of and alysis and design. Applications using methods for structural and 3 compute
495. Ocean Structures (3) $S$ Lee
495. Ocean Structures (3) S Lee of instructor. Introduction to Prerequisites: C.E. 335 and M.E. 373 or consent of instructor and ocean wave hydrodynamic forces due to wave excesponse prediction by response amplitude spectrum concepts; ocean structure respo 495 . (Lecture-problems 3 hours.) operator techniques. Same course as E.E. 495. (Lecture-problems 3 hours.)

## Graduate Division

502. Finite Element Methods II (3) F Plecnik

Prerequisite: C.E. 494 or consent of instructor. Theory of finite element methods Discretization of continuum, elelment stiffness matrices and direct stiffness firmulation. Application to frame, plane stress and strain, plate and shell problems using SAP. (Lecture-problems 3 hours.)
504. Advanced Topics in Civil Engineering (3) F,S Faculty the most recent Prerequisite: Consent of instructor. Selected topics from developments in civil engineering. Course content will vary from May be repeated the specific topic will be recorded of C.E. 405 and/or C.E. 504 may be counted once for credit. No more the master's degree. (Lecture-problems 3 hours.)
506. Engineering Economy for Complex Systems (3) F Rao

Prerequisite: C.E. 406 or consent of instructor. Principles and techniques useful engineers in formulating rational requests for the allocation of capital and other resources to complex programs. Model formulation, systems aly Applications to public engineering systems. Risk, uncertain
intangibles will be emphasized. (Lecture-problems
521. Seaport Planning and Design (3) F Neidengard Prerequisite: C.E. 426 or consent of instructor. and facilities as access syite selection and comprenive (Lectureproblems 3 hours.)
522. Transportation Planning (3) F Faculty

Prerequisite: C.E. 426 or consent of instructor. Planning of fixed facilities for Prious modes of transportation in urban areas. Engineering administration and integration of transportation systems. (Lecture-problems 3 hours.)
525. Airport Planning and Design (3) S Neidengard
er consent of instructor. Planning and design of airports and facilities as access systems and terminals, site selection and geometries of airfields. (Lecture-problems 3 hours.)
526. Pavement Engineering (3) $\mathbf{S}$ Alexander
526. Pavement Engins. Corequisite: C.E. (Lecture-problems 3 hours.)
530. Mathematical Models in Hydraulic Engineering (3) $F$ Chu

Prerequisite: C E 437 or consent of instructor. Numerical techniques for solving prablic problems in water supply, waste water disposal and storm drainage systems. Prediction of important parameters by mathematical modeling on encountered in artificial channels, rivers, estuaries and marine environments. (Lecture-problems 3 hours.)
531. Groundwater and Seepage (3) S Eshet

Prerequisites: C.E. 335, 345 or consent of instructor. Theory and application of groundwater flow and seepage through earth structures. (Lecture-problems 3 hours.)
 Prerequire (Lecture-problems 3 hours.)
534. Hydraulic Models (3) S Mostafa

Prerequisite: C.E. 336, 437 or consent of instructor. Hydraulic measurement and principles of hydraulic similitude as applied to stream, esturine and coastal environments. Laboratory project. (Lecture-problems 3 hours.)

## 538. Hydraulic Engineering Design II (3) F Mostafa

Prerequisites: C.E. 437, 438 or consent of instructor. Design of water supply networks, hydraulic transitions, controls and structures. Hydraulic power networsion River engineering. Water resources systems. (Lecture-problems 3 hours.)
539. Coastal Engineering (3) S Chu

Prerequisite: C.E. 439 or consent of instructor. Wave mechanics, tides, surge ave refraction diffraction and reflection, application to design of coastal and offshore structures and to the study of beach erosion problems. (Lecture-problems 3 hours.)
545. Rock Mechanics in Engineering Practice (3) $S$ Yen

Prerequisites: C.E. 345, 346. Principles of rock mechanics with emphasis on engineering practices for problems of slopes, foundations and tunnels. Same course as Geology 545. (Lecture-problems 3 hours.)
46. Theory and Design of Foundation Structures (3) F Al-Chalabi

Prerequisite: C.E. 345. Foundation, explorations, stress and deformation elationships and design of various footings, piles, piers and caissons. Analysis o lateral loads and design of retaining structures, machinery foundations and oundation dewatering. (Lecture-problems 3hours.)
547. Soil Dynamics (3) $S$ Yen

Prerequisites: C.E. 345, 401 or consent of instructor. Theories and field behaviors of dynamically loaded foundation systems and soil responses with emphasis on engineering application. (Lecture-problems 3 hours.)
548. Applied Soil Mechanics (3) $S$ Yen

Prerequisite: C.E. 345 or consent of instructor. Stress-strain time relationship of soils. Theory and methods of analysis with special emphasis on the applications and limitations in soil engineering. (Lecture-problems 3 hours.)
549. Advanced Soil Mechanics Techniques (3) F Yen

Prerequisite: C.E. 548 or consent of instructor. Current theories on soil preqics experiments and advanced testing techniques. (Lecture-problems hours, laboratory 3 hours.)
550. Behavior and Design of Concrete Structures (3) F Rao

Prerequisite: C.E 459. Behavior of plain, reinforced and partially prestressed concrete members and structures, theories of composite action, structural safety and applications to advanced design of concrete structures Lecture-problems 3 hours.)
551. Prestressed Concrete (3) S Faculty

Prerequisite: C.E. 459. Principles of prestressed concrete, materials used plications to structural design, review of existing specifications. (Lecture problems 3 hours.)
552. Theory of Plates and Shells (3) F Ying Requirement Review of theory Prerequisite: Completion of C.E. Graduate Math Requirement. Reverastic plates; of elasticity; formulation of general equation of bending of thin elastic plading methods of obtaining exact and approximate solutions; membrane and belution theories of shells with emphasis on cylindrical shells and shells of revolution. (Lecture-problems 3 hours.)
553. Behavior and Design of Steel Structures (3) S Chelapati, Plecnik

Prerequisite: C.E. 455. Study of torsion, unsymmetrical bending, stability. Plastic design, code provisions and commentary. Design of complete structural systems in steel. (Lecture-problems 3hours.)
555. Seismic Design (3) $S$ Chelapati Characteristics of earthquakes Prerequisite: C.E. 558 or consent of instructor. Charalysis, practical examples of and seismicity response spons of structures to earthquake motions. Review of elastic and (Lecture-problems 3 hours.)

## 556. Advanced Structural Analysis I (3) F Chelapati

Prerequisite: C.E. 458 or consent of instructor. Numerical methods for號 indere structures, beams on elastic foundations, stability, beam columns, nonlinearity and vibrations. Introduction to wind engineering: basic解 design wind ferces, review of current code practices and design procedures.
557. Advanced Structural Analysis II (3) S Ying

Prerequisite: C.E. 458 or consent of instructor. Virtual forces and displacements, train energy and complementary energy. Force and displacem ent matrix methods,
 wall systems. (Lecture-problems 3 hours.)
558. Dynamics of Structures (3) F Zagustin

Prerequisite: C.E. 455 or consent of instructor. Response of structures and tructural components having one or many degrees of freedom. Damping and inelastic action; earthquake and nuclear blasts, dynamic resistance of structural ements and structures, elastic and inelastic response of structures to earthquake force and blasts. (Lecture-problems 3 hours.)
559. Elastic-Plastic Instabilities (3) $S$ Zagustin

Prerequisite: C.E. 557. Instability of structural elements of static and dynamic end shells. (Lecture problems 3 hours.)
560. Environmental Engineering Laboratory II (3) F Bakker

Prerequisites or corequisites: C.E. 464 and 465 or consent of instructor. Sensing mpling and laboratory analysis of the physical, chemical, biological and radiological properties of waters, waste waters and air. (Lecture-problems 2 hours aboratory 3 hours.)
562. Environmental Engineering Design I (3) F Faculty

Prerequisite: C.E. 465 or consent of instructor. Rational design of water systems (Lecture-problems 3 hours.)
563. Environmental Engineering Design II (3) S Bakker

Prerequisite: C.E. 465 or consent of instructor. Rational design of waste water systems. (Lecture-problems 3 hours.)
564. Public Health Engineering (3) F Faculty

Prerequisite: C.E. 464 or consent of instructor. Engineering aspects of problems methods and administration of individual, industrial, institutional, municipal, state, national and international sanitation, health and safety. (Lecture-problems 3 hours.)
565. Environmental Waste Engineering (3) S Bakker

Prerequisites: C.E. 465 and 560 or consent of instructor. Nature, treatment and disposal of industrial wastes and solid domestic wastes. (Lecture-problems 3 hours.)
602. Seminar in Civil Engineering (3) F,S Faculty research in special fields Prerequisite: Consent of instructor. Presentation of geotechnical and water resources engineering (May be repeated once for credit .
696. Research Methods (1) F,S Alexander

Bibliographical and library techniques and resources. Preparation and presentation of theses and directed studies technical papers.
697. Directed Studies (1-3) F,S Faculty

Prerequisite: Admission to candidacy for an M.S. degree. Corequisite: C.E. 696 or Prerequisite: Admission the problems in civil engineering requiring intensive analysis
698. Thesis (2-6) F,S Faculty

Prerequisite: Prequisite. Admission faculty adviser. Planning, engineering. Corequisite: C.E. 96 or engineering.

## 699. Thesis (3-9) F,S Faculty

Prerequisite: Admission to candidacy for degree of Civil Engineer. Corequisite Prerequisite: Admission tor faculty adviser. Planning, preparation and completion of a thesis in the field of civil engineering practice.

## Electrical Engineering

## Department Chair: Dr. Timothy J. Jordanides

Emeriti: Rodney C. Lewis, Harold W. Washburn
Professors: Hostetter, Houde, Jordanides, Kendall, Lane, Lindquist, Paal, Schwartz Stefani, Winchell

## Associate Professors: Carissimo, Cain, Evans, Valdez.

## Assistant Professor: Ferguson

## Adjunct Professor of Ocean Engineering: Willard Bascom.

Adjunct Clinical Professor: Irvin Unger.
Undergraduate Adviser: Dr. Raymond T. Stefani.
Graduate Adviser: Dr. Claude S. Lindquist
Graduate Committee: Lane, Lindquist, Schwartz, Valdez.

## Bachelor of Science Degree in Electrical Engineering

## Biomedical and Clinical Engineering Option

The Electrical Engineering Department offers an option in biomedical engineering that has a curriculum similar to the electrical engineering option but engineering that a cont acaire substantive competence in biomedical enging and biolog . hysics, oringe clinically oriented iomedical engineer to serve in community medicine. It includes a core of standard lectrical engineering courses as well as courses and laboratories in biomedical engineering, anatomy, physiology and biology. Elective units are available in the enior year to explore individual areas of interest.
解
Laboratory and laboratory facilities for anatomy and physiology are available in engineering and laboratory computer center plus laboratory computer systems are biology. The campus computer censems and to collect, process and display available to simul
in all-university requirements regarding grade point In addition to any other ali-uniedical engineering student must achieve a averages for graduation, a biomed engineering and biology courses attempted. Any student receiving a D or an F in E.E. 210 must repeat the course in consecutive semesters until a grade of $C$ or better is earned.

## Bachelor of Science Degree in Engineering

## Ocean Engineering Option

ption program is designed to provide students with two basic skill categories; ne, competence in one of the three basic engineering disciplines (civil, electrical m, $f$ ech have upon engineering endeavors. The of mathematics, physics and curriculum is built around a strong by more advanced courses in electronics, engineering science. This analytical mechanics, fluid mechanics, thermodynacs, choice of elective units cean environment and underwater systems. A ditional discipline, plus further permits a degree of specialiization in a
exploration into ocean-related academic areas.
Laboratory facilities consist of a 40 -foot reseaip available to the ocean engineering of Engineering, a land acoustic systems and ocean students, plus an
measurement instrum California Ocean Studies
This University is a member of the Southern Californ

## Bachelor of Science Degree in Engineering

## Computer Science and Engineering Option

The Electrical Engineering Department offers an option in computer science and engineering which allows the student to acquire substantive competence in computer sciences and related fields, similar in content to that acquired in a typica computer science department. The program builds upon a mathematics, physics and engineering science. It includes electrical engineering courses as well as courses in digital systems and circuitry programming languages and computer applications. Opportunity to explore prorticular area of interest is provided by elective units in the senior year.
particular adition to any other all-university requirements regarding grade point
in addion engineering student receiving a D 340 averages for graduation, a come the course in consecutive semesters until a grade of or an $F$ in E.E. 210 must repeat the course in consecutive semesters until a grade $C$ or better is earned

## Bachelor of Science Degree in Electrical Engineering

The degree in electrical engineering is designed to prepare graduates for responsible engineering positions in design, development, research, applications and operation in the fields of circuit theory, communications, control systems, elromer physical electronics and power. The elromagne and curriculum is built around a strong basic courses in electrical engineering. A mering science. The

A wide choice of senior electives allows a compreheral fiel above fields or a less comprehensive coverage of several fields. Some computer software or computer hardware is also possible. For a greater coverage of those latter fields, the computer science and engineering degree is suggested

Laboratory facilities are available in the engineering building and include basic well more advanced electronic laboratory instruction, control systems aboratory, electric machinery laboratory and digital computer systems.

In addition to any other all-university requirements regarding grade point min mine a minimum verages for graduation, an electricaing attempted. Any student receiving a . average in all electrical engineering cours until a grade C or better is earned

## Bachelor of Science Degree in Engineering

Computer Science and Engineering Option (code 3-4327)
ower Division: M.E. 101 or C.E. 101; M.E. 172; Chemistry 111A; Physics 151, 152; at least three units of a natural science course; Mathematics 122, 123, 224; E.E 101 140, 210, 241.

Upper Division: Economics 300; Mathematics 346, 370A, 425; E.E. 310, 340, 341, 345, $370,370 \mathrm{~L}, 440,441,442,444,445,448,480,494$; approved electives to total 132 units.

Bachelor of Science Degree in Electrical Engineering (code 3-4330)
Lower Division: M.E. 101 or C.E. 101; M.E. 172, 273; Mathematics 122, 123, 224; Chemistry 111A; Physics 151, 152, 153; E.E. 101, 140, 210, 210 L, 241.
Jpper Division: Economics 300; Mathematics 370A; C.E. 406; M.E. 330, 331, 371; E.E. $310,320,330,330 \mathrm{~L}, 341,350,350 \mathrm{~L}, 370,370 \mathrm{~L}, 410$ or $482,433,433 \mathrm{~L}, 462,480$ or Mathematics 370B; approved electives to total 132 units.

## Bachelor of Science Degree in Electrical Engineering

Biomedical and Clinical Engineering Option (code 3-4336)
Lower Division: M.E. 101 or C.E. 101; M.E. 172, 273; Mathematics 122, 123, 224; Chemistry 111A; Physics 151, 152, 153; E.E. 101, 140, 210, 210L, 241; Biology 208, 209.

Jpper Division: Economics 300; Mathematics 370A; C.E. 406; M.E. 330, 331, 371; E.E. $310,320,330,330 \mathrm{~L}, 341,350,350 \mathrm{~L}, 370,370 \mathrm{~L}, 406,406 \mathrm{~L}, 407,410$ or 482,433 , $433 \mathrm{~L}, 462,480$ or Mathematics 370B; approved electives to total 132 units.

## Bachelor of Science Degree in Engineering

Ocean Engineering Option (code 3-4358)
Lower Division: M.E. 101 or C.E. 101; M.E. 172, 273; Mathematics 122, 123, 224 Chemistry 111A; Physics 151, 152, and approved science elective; EE 101,140 210, 210L, 265. Upper Division: Mathematic 300 330 L, $365,366,425,463,469,495, \mathrm{M}$
approved electives to total 132 units.

## Certificate Program in Energy Conversion and Power Systems Engineering

The 27 -unit Certificate Program in Energy Conversion and Power Systems Engineering is an undergraduate program designed to prepare electrical and mechanical engineering students to become proficient in the analysis and design of power genger, such as direct conversion, coal burning, hydraulic mind and various other types of power plants.
For certificate requirements see the Mechanical Engineering Departm ent section of this Bulletin.

## Master of Science Degree in Electrical Engineering (code 6-4330)

This program affords an opportunity for graduate electrical engineers to improve their competency in analysis and design to better meet the needs of local industry This is accomplished with an integrated curriculum, including upper division mathematics and physics, advanced upper division engineering courses and graduate courses in electrical engineering analysis and design. A student may study automatic control theory, communication theory, electronics, computer engineering, electromagnetic theory, network theory, ocean engineering and biomedical engineering.

Some graduate laboratory and teaching assistantships are available to qualified graduate students. Applications should be sent to the department office.

## Prerequisites

1. A bachelor's degree in an accredited curriculum in electrical engineering, or:
2. A bachelor's degree in engineering, a natural science or other appropriate discipline with the requirement that essential undergraduate prerequisites in electrical engineering be satisfied.
3. Graduate students must consult with the graduate adviser for information concerning procedures and requirements for appropriate approval of their course of study prior to enrolling in their graduate programs.

## Advancement to Candidacy

1. Removal of all undergraduate deficiencies as determined by the Departmen Graduate Study Committee.
2. Students, at the discretion of the Department Graduate Study Committee, may be required to take examinations in their chosen area.

## Requirements for the Master of Science

1. Completion of a minimum of 30 units beyond the bachelor's degree in uppe division and graduate courses approved by the student's Departmen Graduate Study Committee. Students are allowed to elect one of the two options listed below.

## Option 1

EE 401 or 3 units of approved mathematics
EE 505
EE 500/600 (9 units)
EE 400/500/600 (9 units)
EE 69? (3units)
EE 698 (3units)
EE 698 (3units)

## Option 2

EE 401 or 3 units of approved mathematics
EE 505
EE 500 ( 15 units)
EE 500 (15 units) Comprehensive Exam

## Lower Division

Hostetter, Faculty
Mathematics 122 Basic topics in combinational itching circuits and digital computers at a level suitable for beginning scientifically minded students. (Lecture-problems 3 hours.)
140. Computer Methods I (2) F,S Paal, Faculty

The FORTRAN language for digital computers, programming and applications to problems. (Lecture-problems 2 hours.)
210. Electric Circuits I (3) F,S Winchell, Faculty

Prerequisites: Physics 152, Mathematics 224. Linear circuit analysis techniques Prereq Kirchhoff's laws, Network Theorems, Mesh and nodal analysis 3 phase systems. (Lecture-problems 3 hours.)
210L. Electric Circuits I Laboratory (1) F,S Jordanides
Prerequisite: E.E. 210. Laboratory study of electric and electronic circuits and instrumentation. Introduction to transformers and rotating machinery. (Laboratory 3hours.)
241. Computer Methods II (2) F,S Paal, Faculty
241. Complation of digital computers the solution Prerequisite: E.E. 140. Applicalical problems. Introduction to BASIC and to on enginearg (Lecture-problems 2 hours.)
265. Engineering in an Ocean Environment (3) F, S Kendall, Faculty

Study of problems involved in engineering ventures in, on and under the ocean. Environmental considerations and engineering contributions to development and use of ocean resources. (Lecture-discussion 3hours.)

## Upper Division

310. Electric Circuits II (3) F,S Winchell, Facult

Prerequisites: E.E. 210, Mathematics 370A. Continuation of circuit analysis including Fourier series, Fourier and Laplace transform techniques. (Lectureproblems 3 hours.)
311. Electric Circuits and Electronics (3) F,S Winchell, Faculty

Prerequisites: Mathematics 224. Physics 152. Analysis of electric and electronic circuits with emphasis on applications. Not open to electrical engineering majors. (Lecture-problems 2 hours, laboratory 3 hours.)
320. Solid State Electronic Devices (3) F,S Houde, Faculty

Prerequisites: Mathematics 370A, Physics 152. Introduction to solid state electronic devices: diodes, transistors, lasers, microelectronics. (Lectureproblems 3 hours.)
330. Engineering Electronics I (3) F,S Savant, Faculty

Prerequisite: E.E. 210. Analysis and design of diodes and transistor circuits. (Lecture-problems 3 hours.)

330L. Engineering Electronics I Laboratory (1) F,S Savant, Faculty
Prerequisites: E.E.210L, 330. Transistor circuits and systems design laboratory (Laboratory 3 hours.)
440. Programming Languages and Systems I (3) F,S Carissimo, Faculty

Prerequisite: E.E. 140. Basic digital computer structure. Introduction to machine and assembly language programming. Data structures, searching and sorting algorithms. (Lecture-problems 3 hours.)
341. Computer Methods III (2) F,S Paal, Faculty

Prerequisites: E.E. 241, Mathematics 370A. Continuation of applications of prep the solution of engineering and scientific numerical problems Lecture-problems 2 hours.)
345. Computers' Role in Today's Society (3) F,S Carissimo, Faculty

Study of the impact of computer technology on contemporary society introduction to the technology: hardware and software. Perceptions of computers Applications surveyed in various areas. Artificial intelligence and future implications. (Lecture-discussion 3 hours.)
347. Computers in Decision-Making (3) S Carissimo, Faculty

Structure and consequences of computer models of complex systems, with Strucular applications to decision-making processes. Computer simulation experience and examples requiring no previous computer background. (Lecture problems 3 hours.)
350. Energy Conversion (3) F,S Valdez, Faculty

Prerequisite: E.E. 310. Analysis of electromechanical energy conversion devices (Lecture-problems 3 hours.)
350L. Energy Conversion Laboratory (1) F,S Valdez, Faculty
Co-requisite: E.E. 350. Laboratory study of electromechanical devices. transformers and rotating machinery. (Laboratory 3 hours.)
365. Ocean EngineeringI (3) $F$ Kendall, Faculty

Prerequisite: E.E. 265 or consent of instructor. Principal aspects of the technology of ocean engineering. Theory and problems relating to physical ocean features, sea motion, oceanographic instrumentation, underwater tools and manipulators, marine corrosion, boring and fouling, materials for marine use. (Lecture-problems 3 hours.)
366. Ocean Engineering II (3) S Kendall, Faculty

Prerequisite: E E 265 or consent of instructor Prearing Theory and problems relating to ship characteristics, advanced ocean engineer interface vehicles, buoy systems, ship handling and seamanship. Analysis of vehicles, buoys and underwater engineering. (Lecture-problems 3 hours.)
370. Control Systems I (3) F,S Stefani, Faculty

Prerequisite: E.E. 310. Principles of analysis block diagrams and signal flow graphs, stability criteria, application to classical control systems design. (Lecture problems 3 hours.)

370L. Control Systems I Laboratory (1) F,S Savant, Faculty
Prerequisite or co-requisite: E.E. 370. Laboratory study of classical contro systems. (Laboratory 3 hours.)
385. Statistical Communications (3) F Hostette

Prerequisite: E.E. 310. Introduction to the principles of functional communication systems design and performance analysis. Modulation techniques, channel characteristics and noise. (Lecture-problems 3 hours.)
*401. Electrical Engineering Problems (3) F,S Hostetter, Faculty Prerequisite: Mathematics 370A. Co-requisite: E.E. 310. Analytic techniques elevant to electrical engineering. (Lecture-problems 3 hours.)
405. Special Topics in Electrical Engineering (3) F,S Faculty

Prerequisite: Senior standing in electrical engineering or consent of instructor. Selected topics from recent advances in electrical engineering. Course content will 344 vary from year to year and may be repeated once for credit with the consent of the department. Specific topic will be recorded on the student's transcript. (Lectureproblems 3 hours.)

## 406. Biomedical Engineering (3) F Schwartz, Faculty

Prerequisite: Senior standing in engineering, natural science or nursing. Application and design of medical electronic instruments and automated systems. (Lecture-problems 3 hours.)
*406L. Biomedical Engineering Laboratory (1) F Schwartz, Faculty
Prerequisite: Senior standing in engineering or consent of instructor. Laboratory study of medical instrumentation, transducers and computer data processing (Laboratory 3 hours.)
*407. Computers in Medicine (3) S Schwartz, Faculty
Prerequisite: Senior standing in engineering, natural science or nursing Pinciples of analysis and design for computers and data collection equipment for real time, on line medical systems. (Lecture-problems 3 hours.)

## *408. Engineering Applications in Health Care Delivery <br> *408. Engineering App

Schwartz, Faculty Prerequisite: Senior standing in engineering or consplications of technological systems and the administrative management of health care delivery. (Lecture-problems 3 hours.)
410. Electric Circuits III (3) F,S Stefani, Faculty

Prerequisite: E.E. 310. Signal and spectrum analysis, one-port and two-port prother filter design. (Lecture problems 3 hours.)

## 420. Microelectronics (3) F Houde, Facult

Prerequisite: E.E. 320 or M.E. 322. Co-requisite E.E. 420L. Electrical properties Pd characteristics of materials which comprise engineering devices and systems. Microelectronics. Thin film hybrid microelectronics. Thick film hybrids. (Lectureproblems 3 hours.)

420L. Microelectronics Laboratory (1) F Houde, Faculty
Co-requisite: E.E. 420. Laboratory experience in the design and building of thin film hybrid microelectronic circuits. (Laboratory 3 hours.)
425. Underwater Instrumentation Systems (3) S Kendall, Faculty

Prerequisite: EE 433 or E.E. 370. Analysis of underwater instrumentation systems; with emphasis on sensing techniques, readout methods, calibration and dependability. (Lecture-problems 3 hours.)

425L. Underwater Instrumentation Laboratory (1) S Kendall, Faculty
Co-requisite: E.E. 425. Laboratory study and analysis of underwater instrumentation systems, with emphasis on sensing techniques, readout, calibration, placement and retrieval. Laboratory demonstration of instruments and handling equipment. (Laboratory 3 hours.)
*431. Engineering Digital Electronics (3) F,S Savant
Prerequisite: E.E. 310, 330. Digital logic design and analysis using integrated circuits. (Lecture-problems 3 hours.)
*431L. Engineering Digital Electronics Laboratory (1) F,S Schwartz, Faculty
Co-requisite: E.E. 431. Laboratory study of wave shaping, non-linear waveform generation and logic circuits. (Laboratory 3hours.)
*432. Linear Integrated Circuit Electronics (3) F Hostetter
Prerequisites: EF 330,330L, 370. Analysis and design of operational amplifiers and other linear integrated circuits and systems. (Lecture-problems 3 hours.)
*432L. Linear Integrated Circuit Electronics Laboratory (1) F Faculty
Co-requisite or prerequisite: E.E. 432. Laboratory study of semi-conductor devices and circuits. (Laboratory 3 hours.)
*433. Engineering Electronics II (3) F,S Savant, Faculty
Prerequisites: E.E. 330,330L, 370. Advanced analysis and design of transistor circuits and systems. (Lecture-problems 3 hours.)
*433L. Engineering Electronics II Laboratory (1) F, S Savant, Faculty
Co-requisite: E.E. 433. Advanced transistor circuits and systems design laboratory. (Laboratory 3 hours.)
*440. Logical Design of Digital Computers (3) F,S Lane, Faculty
Prerequisite: E.E. 101 or consent of instructor. Boolean algebra and minimization of logical expressions. Logic technologies. Sequential logic circuits. Introduction to computer organization. (Lecture-problems 3 hours.)
*441. Computer Applications in Electrical Engineering (3) S Paal, Faculty Prerequisite: E.E. 341. Advanced numerical methods applied to engineering problems not readily solvable by analytical methods. Ordinary differential equations, partial differential equations, eigenvalues, simulation. Introduction to APL. (Lecture-problems 3 hours.)
*442. Programming Languages and Systems II (3) F,S Carissimo, Faculty Prerequisite: E.E. 340. Advanced machine and assembly language programming. Operating systems analysis and design. (Lecture-problems 2 hours, laboratory 3 hours.)
*444. Compiler Construction (3) F, S Lane, Faculty
Prequisite: EE 340 or Mathematics 325. Syntax directed compiler study Prerequiter and overall design: parsing, semantic analysis Organization of code generation. (Lecture-problems 3 hours.)
*445. Digital Subsystems and Systems (3) F,S Schwartz, Faculty
Prerequisites: E.E. 340, 440. Hardware and software design of minicomputers, microprocessors and emulators. Interfacing of digital peripheral subsystems. Use of machine language, assembly language and utility routines. (Lecture-problems 3 hours.)
*446. Computer Architecture (3) F Lane, Faculty Prerequisite: E.E. 140. Introduction to comp logic operations. Memory and Machine language programming. Arithmetic and Lecture-problems 3 hours.)
*448. Microprocessors and Applications (3) F,S Evans, Faculty Prerequisite: E.E. 101 or microprocessors and microcompurich of microprocessor-based systems, including practical problems in industry.
*452 Industrial Power Practices (3) F Valdez, Faculty
*452. Prerequisites: E E. 350, 350L. Electrical design. Illumination. Motor installation, rotertion and wiring systems. Plans and specifications. (Lecture-problems 3 hours.)
*452L. Power Systems Laboratory (1) F Valdez, Faculty Advanced topics on electrical machinery. Mot. Parallel operation of generators. Starters and contactors
*453. Power Systems Analysis (3) S Valdez, Faculty Prerequisite: E.E. 350. Power systems in the seadere 3 hours.)
calculations, equipm ent charact
460. Guided Waves and Antennas (3) $F$ Evans, Prerequisite: E.E. 462. Propagation of plane (Lecture-problems 3 hours.
dissipative media; radiation and antenna design
*462. Electrical Engineering Fields (3) F, S Evans, Faculty Prerequisites: Physics 152, Mathere wave guides and antennas. (Lecture-problems 3 hours.)
463. Principles of Naval Architecture I (3) F Kendall, Faculty Basic principles and design calculations in naval architecture; termion, load line form geometry, buoyancy, stability, trim, stability ind and tonnage rules and introduction to design of hill strucures.
3hours.) Principles of Naval Architecture II (3) S Kendall, Faculty
464. Principles of Naval Architecturels of the resistance and propulsion of ships, Prerequisite: E.E. 463. Fundamentals propellor design including theory of model testing. Theory androl behavior of ships in waves Fundamentals of ship ma
(Lecture-problems 3hours.)
*465. Underwater Sonics (3) F Kendall, Faculty
Prerequisite: Upper division standing or consent of instructor. Analysis of Prerequisite: Upper division stand wave generation, propagation and detection distributed parameter systems, wa and waves in liquids and solids. (LectureApplication to tran
*465L. Ocean Engineering Laboratory (1) F Kendall, Faculty
Prerequisite: Consent of instructor. Working experience at sea on vessel Tovan or Nautilus. Operation of various acoustic systems, ocean instruments, radar and navigation devices. Same experiments ashore in wave tank and corrosion test chamber. (Laboratory 3 hours.)
*467. Current Developments in Ocean Engineering (3) S Kendall
Prerequisite: Upper division standing. Study of ocean engineering developments and ocean environmental problems as they occur. Analysis of real and hypothetical ocean systems design projects. Current events in the field will be used to illustrate and amplify realistic design experience for the student. (Lecture-problems 3 hours.)
468. Basic Ship Design (3) $F$ Kendall, Faculty

Prerequisite: E.E. 464 or consent of instructor. An interdisciplinary approach to the preliminary ship design process. Treats both naval and commercial ship types and is applicable to other vessels such as drillships, tugs, research ships, etc. Topics include overview of ship types, definition of design objectives, methods of optimization, estimation of propulsion and auxiliary power requirements, estimation of weight, stability analysis, sea-keeping, power plant selection and design intermodal cargo systems and estimation of capital and operating costs (Lecture-problems 3 hours.)
*471. Control Systems II (3) F,S Stefani, Faculty Prerequisites: E.E. 370, 370L. Advanced classical control methods: compensators, root locus, describing functions. Introductory modern controls. state space descriptions, stability, canonical forms, controllability, observability, controller configurations. (Lecture-problems 3 hours.)
*471L. Control Systems II Laboratory (1) F,S Stefani, Faculty
Prerequisites: E.E. 370, 370L. Analog and digital studies related to advanced classical methods and introductory modern controls. (Laboratory 3 hours.)
480. Engineering Probability and Statistics (3) F,S Schwartz, Faculty

Prerequisite: E.E. 310. Introduction to probability, statistics, random variables and their application. (Lecture-problems 3 hours.)
482. Communication Systems (3) F,S Hostetter, Faculty

Prerequisite: E.E. 310. Frequency domain analysis of noiseless signals; Fourier eries, Fourier transforms, energy spectral density, power spectral density. Effect of linear system on noiseless signals. Filter design. Modulation and demodulation of noiseless signals. Noise effects. (Lecture-problems 3 hours.)
*490. Special Problems (1-3) F,S Faculty
Prerequisite: Consent of instructor. Assigned topics in technical literature or aboratory projects and reports on same. May be repeated for a total of six units
*494. Proseminar in Computer Science (3) S Faculty
Intensive study of selected conceptual and theoretical problems in computer science.
495. Ocean Structures (3) $S$ Lee

Prerequisites: M.E. 373 and C.E. 335 or consent of instructor. Introduction to hydrodynamic forces due to wave excitation; random process and ocean wave spectrum concepts; ocean structure response prediction by response amplitude perator techniques. Same course as C.E. 495. (Lecture-problems 3 hours.)

## Graduate Division

505. Analytical Methods in Engineering (3) F,S Evans, Faculty

Prerequisite: E. E. 401. Recapitulation of the wide variety of mathematical model used in electrical engineering. Emphasis is on the application of these models to physical problems. (Lecture-problems 3 hours.)
510. Passive Network Synthesis (3) $F$ Lindquist,Facuity Prerequisite: E.E. 410 . The principles of synthesis (ransfer characteristics. (Lecture-problems 3 hours.)
511. Active Network Synthesis I (3) $S$ Lindquist, Faculty

Prerequisite: E.E. 410. Frequency and time domain analysis: delay, dominant Prerequ pole-zero responsitivity, limitations, active lowpass filter design, active filter components including op amps. (Lecture-problems 3 hours.)
512. Active Network Synthesis II (3) $F$ Lindquist, Faculty

Prerequisite: E.E. 511. Flow graphs and Blackman's impedance relation. Optimum filter response, frequency transformations, design of active high-pass, band-pass, band-stop and all-pass filters, tuneable filters, frequency discrim inators and oscillators. (Lecture-problems 3 hours.)
520. MOS Integrated Circuits (3) S Houde, Faculty Prerequisite: E.E. 420. Techniques to implement systure-problems 3 hours.) Semiconductor (MOS) Large Scale Integra
540. Digital Computer System Analysis (3) F Lane, Faculty

Prerequisite:E.E. 440 . Computer system analy in units, memory organizaturs,
541. Computer Arithmetic Unit Design (3) F Paal, Faculty

Prerequisite: EE 440 Various computer arithmetic algorithms and their implementation. Complexity-speed trade-offs. Floating point methods. Error checking. (Lecture-problems 3 hours.)

## 348 545. Advanced Engineering Applications of Digital Computers

(3) S Schwartz, Faculty

Prerequisites: E.E. 440 and 445 or 448 . Study of on-line, real time computer Prerequisites: E.E. analytical methods. (Lecture-problems 3 hours.)

## 560. Applied Electromagnetic Theory (3) S Ferguson, Faculty

Prequisite: E E 460. Theory of radiation, impedance characteristics and Prerequisite. (Lecture-problems 3 hours.)
565. Underwater Acoustics (3) $F$ Kendall

Prerequisite: E.E. 465. Ray theory, reflection and refraction, acoustic properties of the sea, transducers. (Lecture-problems 3 hours.)

## 566. Underwater Detection Systems (3) S Kendall, Faculty

Prerequisites: E.E. 465,480 or 482 . Application of optimization methods to the collection and processing of underwater information. (Lecture-problems 3 hours.)
570. Advanced Control Systems I (3) F Stefani, Faculty

Prerequisite: E.E. 471. State space analysis. Controllability, observability, stability and optimization. Theory and analysis of sampled data systems. (Lectureproblems 3 hours.)
571. Advanced Control Systems II (3) S Stefani, Faculty

Prerequisite: E.E. 570 Continuation of Electrical Engineering 570. (Lectureproblems 3 hours.)
572. Systems Analysis and Optimization (3) $S$ Jordanides, Faculty

Prerequisite: E.E. 471. Analysis of large-scale systems using graphic tools of systems engineering. Modeling and optimization of complex physical and socioeconomic systems. Case studies applied to current engineering problems. Review of relevant papers in scientific journals. (Lecture-problems 3 hours.)

## 80. Random Processes in Engineering (3) $F$ Evans

Prerequisite: E.E. 480. Random processes, correlation functions, spectral densities, stationarity, ergodicity, second-order properties, special processes and their applications. (Lecture-problems 3 hours.)

## 82. Digital Signal Processing (3) $S$ Evans

Prerequisites: E.E. 410, 482. General digital processing techniques, digital filter design and fast Fourier transform analysis. (Lecture-problems 3 hours.)

## 590. Special Topics in Electrical Engineering (3) S Faculty

Prerequisite: Graduate standing in electrical engineering and consent of instructor. Selected topics from recent advances in electrical engineering. Course ontent will vary from year to year. Topics will be announced in the Schedule of Classes. May be repeated for a maximum of six units. (Lecture-problems 3 hours.)
610. Seminar in Network Theory (3) S Lindquist, Faculty

Prerequisite: E.E. 510 or 511 or 512 . Intensive study of current professional literature and recent techniques related to network theory.

## 640. Seminar in Digital Computer Systems (3) $S$ Lane

 Prerequisites: E.E. 540, 541. Study of selected topics in computer system echnology in which recent significant advances have been made.670. Seminar in Control Systems (3) F Stefani

Prerequisite: E.E. 570 or 571 or 572 . Study of selected topics in the areas of synthesis and design of optimum control systems.

## 697. Directed Research (1-3) F,S Faculty

Prerequisite: Graduate standing. Theoretical and experimental problems in electrical engineering requiring intensive analysis.

## 698. Thesis (2-4) F,S Faculty

Planning, preparation and completion of a thesis in electrical engineering.

## Mechanical Engineering

Department Chair: Dr. Hillar Unt
Emeriti: Ernest G. Brind, Richard W. Leutwiler, Jr., Herluf P. Nielsen.
Professors: Cebeci, deSoto, Dyer, Edelman, Gilpin, Kyle, Miller, Potter, Roman, Sungu, Torby, Tsao, Unt.
Associate Professors: Kellam, Kundis, Mijares, Raymond, VanderMeyden
Adjunct Professors: Dr. Angelo A. Caputo, Dr. Richard R. Gold
Industrial-Management Engineering Coordinator: Dr. James L. Dyer.
Materials Engineering Coordinator: Dr. C. Barclay Gilpin.
Certificate in Industrial Plastics Processing and Design Director:
Dr. Edward Miller.
Certificate in Energy Conversion and Power Systems Engineering Director:
Dr. James L. Dyer.
Undergraduate Adviser: Mr. Ernest R. Mijares.
Graduate Adviser: Dr. C. Barclay Gilpin.
Graduate Committee: Edelman, Gilpin, Roman, Sungu, Tsao.

## Bachelor of Science Degree in Engineering

## Materials Engineering Option

Modern engineering applications in all fields require new materials with perties well beyond those obtainable with the alloys available several years ago New materials are needed for such diverse applications as the supersonic air ransports, undersea deep submergence vessels, magnetic tapes and semiconducting devices. Scientific knowledge in this area has expanded recently at a rate comparable to that experienced by the field of electronics, and the materials option is offered to meet the demand for materials oriented engineers.

Course work is directed toward the understanding of the properties of materials
Cours and emphasis is placed on the behavior of in terms materials in engineering apstal for studies in this field and includefaction examination of solids, thermal and structure, microscopic and X-ray difraction of properties at low and high mechanical treatment and the determination of properties at low and high temperatures.

## Bachelor of Science Degree in Engineering

Industrial-Management Engineering Option
This is an interdisciplinary degree in which both the Schools of Business Administration and Engineering provide courses which will enable the student to
have a technical engineering background plus a good foundation in business and management practices. The option consists of the core engineering courses through the junior year with an addition of business courses in accounting business law management inventory practices and operations research. The ective structure within this option is such that the student may specialize in either engineering, business or a combination of both.

## Bachelor of Science Degree in Mechanical Engineering

The realm of mechanical engineering is so extensive that training must be broad nd basic, providing grounding in fundamentals which an engineer requires in order to gain competence in any specialized field. In view of this, the curriculum in mechanical engineering includes ample foundation courses in mathematics physics, chemistry, and graphics. These are followed by courses in energy conversion, thermodynamics, fluid mechanics, mechanics and strength of materials, metallurgy, and design. Opportunity to explore further a particular area of interest is provided by elective units in the senior year.

The laboratories of the department are provided with modern equipment for undergraduate instruction in the following areas: instruments and measurements fuels and lubricants, materials and metallurgy, thermodynamics and heat power vibration and design, acoustics.

Industry sponsored scholarships are available to upper division mechanical engineering students. Participating industries that contribute scholarships are the Alcoa Foundation, Atlantic Richfield Foundation, Getty Oil Company, Union Oi Company of California Foundation, Shell Companies Foundation and THUMS Further information is available in the department office.

## Master of Science Degree in Mechanical Engineering

Built on a broad and basic undergraduate instruction, the graduate level courses and the graduate degree master of science in mechanical engineering develop competence in the fields of aeronautics and astronautics, engineering mechanics
and design, thermodynamics and fluid flow. Modern laboratories in thermodynamics, heat power, metallurgy, and mechanical properties of materials are maintained for undergraduate and graduate instruction, and graduate research Design rooms, excellent laboratories within the other two engineerin departments, analog and digital computer facilities, and good machine shops supplement the mechanical engineering facilities.
Additional details may be found in the Schedule of Classes. For further information and complete degree requirements contact the Chair, Mechanical Engineering Department

Some graduate laboratory and teaching assistantships are available to qualified graduate students. Applications should be sent to the department office

## Bachelor of Science Degree in Engineering

## Materials Engineering Option (code 3-4352)

Lower Division: M.E. 101, 172, 205, 222, 272; C.E. 205; E.E. 210, 210L; Mathematics 122, 123, 224; Chemistry 111A; Physics 151, 152, and a natural science course with a laboratory or M.E. 221
Upper Division: M.E. 322, 323, 330, 371, 373, 374, 375, 421, 423, 425, 427, 436, 459; E.E. 420; C.E. 406; Chemistry 371A; Economics 300; Mathematics 370A; approved electives to total 132 units

## Bachelor of Science Degree in Engineering

## Industrial Management Option (code 3-4342)

Lower Division: M.E. 101, 172, 205, 222; C.E. 205; E.E. 210, 210L; Mathematics 122, 123, 224; Accounting 201; Finance 222; Chemistry 111A; Physics 151, 152, and a natural science course with a laboratory or M.E. 221
Upper Division: M.E. 330, 331, 371, 373, 390, 459, 490; C.E. 406; E.E. 310, 370, 370L; Mathematics 370A; Economics 300; Finance 324; Management 300, 402; Quantitative Systems 445, 460; and approved electives to total 132 units.

## Bachelor of Science Degree in Mechanical Engineering (code 3-4350)

Lower Division: M.E. 101, 172, 205, 222, 272; C.E. 205; E.E. 210, 210L; Mathematics 122, 123, 224; Chemistry 111A: Physics 151, 152, and a natural science course with a laboratory or M.E. 221.
Upper Division: M.E. 305, 322, 323, 330, 331, 336, 337, 371, 373, 374, 375, 431, 459, 471, 472; C.E. 335, 336, 406; E.E. 310, 370, 370L; Mathematics 370A; Economics 300; approved electives to total 132 units one of which must be a mechanical engineering lecture-laboratory or design-laboratory course.

## Certificate in Industrial Plastics Processing and Design

## Director: Dr. Edward Miller

Professors: Dyer, Edelman, Gilpin, Miller, Unt
The Certificate Program in Industrial Plastics Processing and Design is an Iterdisciplinary program sponsored by the Industrial Education, Mechanical Engineering and Chemical Engineering Departments. For additional information and requirements refer to the Industrial Education Department

## Certificate Program in Energy Conversion and Power Systems Engineering

Director: Dr. James L. Dyer.
Professors: deSoto, Dyer, Jordanides, Sungu, Unt

## Associate Professors: Mijares, Valdez.

The 27 -unit Certificate Program in Energy Conversion and Power Systems andergraduate program designed to prepare electrical and mind design echanical engineering studenis burning, hydraulic power generating systems, solar wind and various other types of power plants.

## Requirements for the Certificate:

1. Consultation with program advisers in Electrical or Mechanical Engineering Departments
2. Completion of the following core courses: Civil Engin
3. Completion of 12 units from the following Engineering 453; Mechanical Engineering 405, 410, 411, 412, 432, 438.
. Completion of a bachelor's degree. The certificate may be awarded concurrently with the degree.

## Master of Science Degree in Mechanical Engineering (code 6-4350)

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1. A bachelor's degree in an accredited curriculum engineering, or:
2. A bachelor's degree in engineering, a natural science or other appropriate discipline with the requirement that essential undergraduate prerequisites in mechanical engineering be satisfied.
3. Graduate students must consult with the for appropriate approval of their concerning procedures and requirements

## Advancement to Candidacy

1. Removal of all undergraduate deficiencies as determined by the Departmen Graduate Study Committee.
2. Students may, at the discretion of the Department Graduate Study Committee, be required to take examinations in their chosen areas.

2-79140

## Requirements for the Master of Science

1. Completion of a minimum of 30 units beyond the bachelor's degree in upper division and graduate courses approved by the student's Department Graduate Study Committee including:
a. A minimum of 21 units in engineering or mathematics courses with 15 units of 500 and/or 600 level courses in mechanical engineering.
b. Nine units of electives selected from approved upper division or graduate courses from appropriate areas
c. A thesis or project or comprehensive examination. Students taking the comprehensive examination must complete a minimum of three units of M.E. 697 prior to the examination.

## Lower Division

101. Introduction to Engineering and Engineering Design (1) F,S Gilpin, Miller
Elementary application of engineering methods to case histories. Same course as Civil Engineering 101. (Lecture-discussion 1 hour.)
102. Engineering Design Graphics I (3) F,S Kundis

Principles of graphical expression through sketching, instrumental drawing Primes dimensions, working drawings Descriptive prometry, methods of points, lines, planes, warped surfaces, intersections and development. Elementary creative design. (Lecture-laboratory 6 hours.)
205. Computer Methods in Mechanical Engineering (2) F,S Faculty

Prerequisites: Mathematics 122, Physics 151. Digital computer programming with applications to mechanical engineering problems. (Lecture-problems 1 hour, laboratory 3 hours.)

## 221. Electrochemical Processes in Mechanical Engineering (4) F,S Gilpin,

 MillePrerequisites: Chemistry 111A, Mathematics 122. Heat treating and carburizing atmospheres, corrosion prevention, electroplating and separation, non-mechanical milling and related processes. Combustion, products, pollutants. (Lecture problems 3 hours, laboratory 3 hours.)
222. Manufacturing Processes (2) F,S Faculty

Prerequisite or co-requisite: M.E. 172. Machines and equipment and processes Prerequisite or co-requisite: Modern manufacturing and fabrication operations, with field trips to industrial plants. (Lecture-problems 2 hours.)

## 272. Engineering Design Graphics II (2) F,S Kundis

Prerequisite: M.E. 172. Graphical expression with emphasis on sketching machine drawing detail and assembly drawing, gears, cams, fastenings, piping welding. Stress on original design. (Lecture-laboratory 4 hours.)
273. Solid Mechanics for Electrical Engineers (2) F,S Faculty

Prerequisites: Mathematics 122 and Physics 151 or consent of instructor. Statics of particles and rigid bodies, elementary stress analysis. (Lecture-problems 2 hours.)

Upper Division
305. Numerical Methods in Mechanical Engineering (3) F,S Torby, Unt Prerequisite: ME 205 Application of numerical methods to the solution of Roots of algebraic and transcendental mechanical engineering algebraic equations. Numerical equations. Solution of simultar ordinary differential integration and differentiation. Numerical intal problems. Partial differential equations: initial-value problems, bo equations. (Lecture-problems 3 hours.)
322. Engineering Metallurgy I (2) F,S Gilpin, Miller, Raymond

Prerequisite: Chemistry 111A. Structure and properties of crystalline materials, crystal lattices, phase equilibria and transformations, nucleation and grain growth. Effects of heat treatment and mechanical working. (Lecture-problems 2 hours.)
323. Engineering Metallurgy I Laboratory (1) F,S Gilpin, Miller, Raymond

Prerequisite or co-requisite: M.E. 322. Metallographic study of the effects of Prmal treatments on the structures and mechanical properties of metals and alloys. (Laboratory 3 hours.)
330. Engineering Thermodynamics I (3) F, S Faculty

Prerequisites: Mathematics 224, Papors sources second laws of thermodynamics, properk introduction to heat transfer and of energy and its conversion to work.
331. Engineering Thermodynamics I Laboratory (1) F,S Faculty

Co-requisite: ME 330. Measurements of thermodynamic properties, fluid flow Co-requisite. M.E. 3 orimetry. (Laboratory 3 hours.)
336. Power Plant Design (3) F,S Faculty

Prerequisites: M.E. 330, 331. Design of power production systems, including Prm pow turbines and auxiliary power units. Survey of alternate and biomass Lecture-design problems 3 hours.)
337. Engineering Thermodynamics II Laboratory (1) F,S Faculty

Co-requisite: M.E. 336. Measurements of energy and power. Testing and evaluation of the performance of thermodynamic equipment. (Laboratory 3 hours.)
371. Analytical Mechanics II (Dynamics) (3) F,S Faculty

Prerequisites: M.E. 172, 205 or equivalent, C.E. 205 or M.E. 273. Newton's Laws, Prerequisites. and the principles of work-energy and motion problems. (Lecture-problems 3 hours.)
373. Mechanics of Deformable Bodies (3) F,S Faculty

Prerequisite: C.E. 205. Application of the principles of mechanics to design of structural and machine members and connections; stress analysis of beams and columns. Properties and strength of engineering materials. (Lecture-problems 3 hours.)
374. Mechanical Properties of Materials (1) F,S Tsao

Co-requisite: M.E. 373. Laboratory course relationship of structure to these properties of engineering mater
375. Kinematics and Dynamics of Mechanisms (4) F,S Edelman
375. Kinemates M 222,272,322,371. Fundamentals of linkages, cams, gears and Prerequisites. analysis of machines. Static and inertia gear trains. Velocity and acceleration analysis. (Lecture-problems 3 hours, design loading of machine
390. Design and Reliability I (3) S Dyer

Prerequisites: M.E. 222, Mathematics 224. Introduction to statistics and their application to design reliability, critical element identification and characterization. Incorporation of critical elements into design. (Lecture-problems 3 hours.)
*401. Engineering Analysis I (3) F,S Roman, Torby
Prerequisite: Mathematics 370A. Vector analysis, series solutions of differential equations (special functions), boundary value problems and characteristics function representation, partial differential equations, methods of formulating and solving problems in engineering. Same course as Civil Engineering 401. (Lectureproblems 3 hours.)
*402. Engineering Analysis II (3) F, S Roman, Torby
Prerequisite: Mathematics 370A. Analysis of mechanical engineering problems by matrix theory and complex variables; introduction to numerical techniques. Same course as Civil Engineering 402. (Lecture-problems 3 hours.)
*403. Introduction to Computer Simulation of Mechanical

## Systems (3) S Torby

Prerequisites: M.E. 305, E.E. 370, 370L or consent of instructor. Introduction to simulation and modeling methods of mechanical systems. Simulation languages Model construction. Computer exercises and examples. (Lecture-problems 3 hours.)
*405. Special Topics in Mechanical Engineering (3) F,S Unt, Faculty Prerequisite: Senior standing in mechanical engineering or consent of instructor Selected topics from recent advances in mechanical engineering. Course content will vary from year to year and may be repeated once for credit with the consent of
*410. Solar Engineering (3) $F$ Sungu
Prerequisite: M.E. 330. Origin, nature and availability of solar energy. Review of the fundamentals of radiation heat transfer. Solar energy thermal processes Radiation characteristics of opaque materials. Flat-plat collectors. Focusing collectors. Energy storage-solar energy applications. Design of: (1) solar water heating systems, (2) solar heating and cooling systems, (3) solar power generation systems. (Lecture-problems 3 hours.)
*411. Energy Selection and Conversion (3) S Dyer
Prerequisite: M.E. 330. Conversion of thermal to electrical energy, available energy, selection of energy sources, examination of alternative energy sources and resources. (Lecture-problems 3 hours.)
*412. Nuclear Power Engineering (3) S Dyer
Prerequisite: M.E. 330. Power production by nuclear methods, core engineering heat transfer, reactor control and safety, fusion systems. (Lecture-problems 3 hours.)

## 421. Engineering Metallurgy If (3) F Gilpin

Prerequisite: M.E. 322. Properties and uses of structural steels, heat treatable steels, titanium alloys, nickel and cobalt base alloys; refractory metals, ultra high strength steels, stainless steels and metal matrix composite materials. Introduction to designing for fracture resistance. (Lecture-problems 2 hours, laboratory 3 hours.)

## 423. Crystallography of Materials (3) F Raymond

Prerequisites: Mathematics 224, Chemistry 111A. Perfect and imperfect crystalline states in metals; point, line and aggregate defects, including dislocation defects; preferred orientation, pole figures, ordering. Problems relating to metals plastics and ceramics. (Lecture-problems 3 hours.)
*424. Engineering Principles and Properties of Plastics (3) $S$ Miller
Prerequisite: M.E. 373. Nature of polymers, physical and mechanical properties of plastics. Polymerisation reactions and production. Properties of co-polymers, polymer solutions. Viscoelastic properties of polymerics. (Lecture-problems 3 hours.)
425. Chemical and Electrochemical Manufacturing Processing (3) F Miller Prerequisites: M.E. 322, 330. Theory of electrochemical processing. Electroplating and electroless plating solutions, processes and equipment Anodizing and other surface treatments. Carburizing, nitriding atmospheres and aquipment. Diffusion in solids. The effect of surface treatments on mechanica properties (Lecture-problems 3 hours.)
426. Corrosion Engineering (3) S Gilpin

Prerequisite: ME rosion, corrosion eraironmental stress crackling, corrosion control and prevention. (Lectureproblems 3 hours.)
427. Metals and Plastics Manufacturing Processes (3) S Raymond

Prerequisite: M.E. 322. Elementary theory of metal forming and plastics rocessing. Includes metal forging and rolling, metal and plastics extrusion plastics injection molding, casting. Discussion of appropriate manufacturing methods. (Lecture-problems 3 hours.)
*431. Heat Transfer Systems Design (3) F,S deSoto
Prerequisites: M.E. 305, 330, C.E. 335, Mathematics 370A. Analysis of heat ransfer by conduction, convection and radiation. Investigation of steady state and transient heat transfer systems. Computer methods. Design of heat exchangers and other heat transmission devices. (Lecture-problems 2 hours, laboratory 3 hours.)
*432. Fluid Machinery (3) F Kyle
Prerequisites: M.E. 330, 371; C.E. 335. Design, analysis and selection of pumps ans, blowers, compressors, turbines, fluid actuators, control and metering devices. The solution of practical engineering problems especially in the area of urbomachinery. Suitable field trips will be taken to observe manufacture and operation of equipment. Laboratory demonstrations will be made of selected item discussed in the course. (Lecture-problems 3hours.)
*434. Ocean Waves and Currents (3) F Kyle
Prerequisites: Mathematics 370A; M.E. 330, 373; C.E. 335. Mechanics of surface wave motion, tides, currents, shore processes, effects of waves and currents on marine structures, theory of moorings. (Lecture-problems 3 hours.)
*436. Intermediate Thermodynamics (3) $S$ Dyer
Prerequisite: M.E. 330. Gas processes; relation of entropy to second law; gas ycles, vapor cycles; mixtures of gases and vapors. Introduction to statistical thermodynamics. (Lecture-problems 3 hours.)
*437. Intermediate Fluid Mechanics (3) S Kyle
Prerequisites: C.E. 335, Mathematics 370A. Dynamics of ideal and real fluids; frential flow, vortex flow; the Navier-Stokes equations; boundary layer theory, turbulence: compressible flows; applications of theory to practical systems involving fluid motion. (Lecture-problems 3 hours.)
*438. Air Conditioning and Refrigeration (3) F Sungu
Prerequisite: M.E. 330. Basic concepts in air conditioning psychrometry; calculation of heating and cooling loads in buildings; design of heating and air conditioning systems; principles of refrigeration and cryogenic engineering (Lecture-problems 3 hours.)
*439. Introductory Gas Dynamics (3) F Roman
Prerequisites: M.E. 336, C.E. 335. Basic concepts of gas dynamics. Steady and unsteady compressible flow, basic wave phenomena. (Lecture-problems 3 hours.)
*441. Aerodynamics of Vehicles and Structures (3) F Kellam
Prerequisite: C.E. 335. Theoretical and experimental aerodynamics applied to surface and flight vehicles such as automobiles and trains, conventional VTOL and STOL aircraft, parachutes and hang gliders; also applications to buildings, bridges and sailboats. Wind tunnel testing techniques. (Lecture-problems 2 hours laboratory 3 hours.)

## *443. Machine Structures (3) S Mijares

Prerequisites: M.E. 305, 373. Application of energy principles to the stress analysis of machine elements. Fundamentals of stiffness and flexibility matrix methods in mechanical structures. Computer applications. (Lecture-problems 3 hours.)
*444. Control of Mechanical Systems (3) F Mijares
Prerequisites: E.E. 370, M.E. 371. Derivation of equations of motion for mechanical systems. Design of mechanical elements, with emphasis on linear components, based on stability and transient analysis. (Lecture-problems 3 hours.)
450. Special Problems (1-3) F,S Unt, Faculty

Prerequisite: Senior standing. Assigned topics in technical literature or laboratory projects and reports on same.
459. Professional Practice Seminar (1) F,S Unt

Prerequisite: Senior standing in Industrial-Management, Materials or Mechanical Engineering. Professional practice of engineering, graduate studies, recent developments, ethics, legal requirements, impact of governmental regulations, professional societies. Oral and written presentation of engineering reports.
*461. Automotive Engineering (4) $S$ Edelman, Kellam
Prerequisites: M.E. 330, 371,373 or consent of instructor for non-engineering majors. Analysis and design of automotive equipment. Theoretical and practical aspects of combustion, fuels, power plants, drivetrains, vehicles, performance testing, safety, maintenance and economics. Correlation of design with performance. Laboratory testing will be conducted to verify theoretical developments. (Lecture-problems 3 hours, laboratory 3 hours.)
471. Analysis and Design of Machine Components (3) F,S Mijares

Prerequisites: M.E. 373, 374, 375. Application of the principles of mechanics and physical properties of materials to the proportioning of machine elements including consideration of function, production and economic factors. (Lecture problems 2 hours, design application 3 hours.)

## *472. Design of Mechanical Engineering Systems (3) F,S Edelman

Prerequisites: M.E. 322, 336, 373, 375; C.E. 335. Project approach to mechanical engineering systems design stressing creative and methodical techniques in problem definition, design conception and problem solution. (Lecture-problems 2 hours, design application 3 hours.)
*474. Engineering for Production (3) $F$ Edelman
Prerequisite: M.E. 375 or consent of instructor. Engineering and design techniques applied to product design to facilitate producibility. Engineering and design of machines, tools and instruments to facilitate manufacturing, assembly, testing and inspection of products. Introduction to value engineering. (Lectureproblems 3 hours.)
*475. Analytical Mechanics III. Advanced Dynamics (3) F Mijares, Torby Prerequisites: M.E. 371, Mathematics 370A. Detailed study of particle and rigid pimechanics. Three dimensional analysis, Lagrange's equations and variationa principles. Vibrating systems, planetary and satellite motions, variable mass roblems, Euler's equations and gyromechanics. The gyroscope and gyrocompass (Lecture-problems 3 hours.)
*476. Engineering Vibrations I (3) S Unt
Prerequisites: M.E. 371, Mathematics 370A. Introduction to fundamentals o mechanical vibrations, types of oscillatory motions. Free, forced and transien vibrations; damping, vibration isolation, vibration measuring instruments. Coupled oscillations of lumped systems; use of Lagrange's equations; Rayleigh and matrix teration method. (Lecture-problems 2 hours, laboratory 3 hours.)
*477. Advanced Mechanics of Deformable Bodies (3) F Tsao
Prerequisites: M.E. 373, 374. Stress concentration; photoelastic method of stress analysis. Failure theories. Fatigue. Flexure and shear of unsymmetrical sections shear center. Deformations beyond the elastic limit. Energy methods; Castigliano's heorem. (Lecture-problems 3 hours.)
*479. Engineering Acoustics (3) F Kellam, Unt
Prerequisites: Mathematics 370A, E.E. 310, M.E. 371. Theory and application of coustical principles to generation transmission, measurement and control o sound. (Lecture-problems 2 hours, laboratory 3 hours.)
*490. Design and Reliability II (3) F Dyer
Prerequisite: M.E. 390 or consent of instructor. Application of reliability concepts engineering design, component modes of failure and system reliability. Design analysis of failure modes and life time. Case study of design application. (Lecture problems 2 hours, design laboratory 3 hours.)

## Graduate Division

## 501. Advanced Engineering Analysis (3) $S$ Roman

Prerequisites: M.E. 401, 402 or equivalent. Solution of engineering problems by methods of asymptotic expansions, variational calculus and integral transforms. Selected topics of advanced analytical methods in engineering including partial differential equations, integral equations, distribution theory and nondeterministic mathematics. (Lecture-problems 3 hours.)
521. Advanced Materials Engineering (3) $F$ Miller

Prerequisite: M.E. 427 or consent of instructor. Imperfection in metals, Prerequisite: M.E. 427 or consent working preferred orientation and dislocation theories of strength of 3 hours.)
522. Fracture of Engineering Materials (3) $S$ Raymond

Prerequisite: M.E. 427 or 477 or consent of instructor. Mechanics of fracture, Pre toughness in brittle and ductile materials, macroscopic and microscopic aspects of crack propagation, stress corrosion cracking, hydrogen embrittlement, fatigue, creep, rupture and designing for fracture resistance. (Lecture-problems 3 hours.)

## 531. Heat and Mass Transfer (3) F Cebec

Prerequisites: ME 431, 437. Transport properties of fluids and solids Development of equations of mass, heat and momentum transfer. Transport processes in laminar and turbulent fluid flows. Free and forced convection. introduction to radiative heat transfer. (Lecture-problems 3 hours.)
532. Mechanics of Ideal Fluids (3) F Kyle

Prerequisite: M.E. 437 or consent of instructor. Fundamental equation of continuity. Characteristics of flow patterns. Kinematics of flow. Forces on fluid elements. Equations of motions. Equations of energy and momentum. Potential theory. Vector concepts. Two-dimensional motion. Source, sink, doublets, circulation. Complex variables in fluid flow problems. Moving cylinders. Theorem of Schwarz and Christoffel; Helmholtz motions. Cavitation. Drag. (Lecture-problems 3 hours.)

## 533. Mechanics of Real Fluids (3) $S$ Cebeci

Prerequisite: M.E. 437 or consent of instructor. Fluid motion with friction. Boundary layer concept. Derivation of the equations of motion of a compressible viscous fluid (Navier-Stokes equations). General properties of the Navier-Stokes equations. Boundary layer equations for two-dimensional flow. Exact solutions of the steady-state boundary layer equations. Turbulent flow. (Lecture-problems 3 hours.)
536. Analytical Thermodynamics (3) F Dyer

Prerequisite: M.E. 336. General treatment of the thermodynamic laws. Kinetic theory and equations of states. First law. Fundamentals of classical and statistical mechanics as applied to thermodynamics. Second law. Reversibility, irreversibility, entropy. Reactive mixtures. Chemical equilibrium. Statistical thermodynamics. Partition functions. (Lecture-problems 3 hours.)

## 537. Gas Dynamics (3) $S$ Roman

Prerequisites: M.E. 439, 532 or consent of instructor. Related thermodynamics. One-dimensional steady flow, wave and shock motion in unsteady one-dimensional and steady two-dimensional flows. Small perturbation theory for wings and bodies. The influence of viscosity. Survey of experimental techniques; analogies. (Lectureproblems 3 hours.)
541. Advanced Aerodynamics of Vehicles and Structures
(3) S Kellam

Prerequisite: M.E. 441. Detailed analysis of applications introduced in Mechanical Engineering 441. Selected topics such as computational aerodynamics, compressible and supersonic flow and aerodynamics noise. (Lecture 3 hours.)

## 543. Advanced Aircraft and Missile Structures (3) S Faculty

Prerequisite: M.E. 446 or 477 or consent of instructor. Theory and methods of strength analysis and design of modern airplane, missile and spacecraft components. A review of elasticity relations and practical two-dimensional plasticity. Properties and failure modes, including fatigue and elevated temperature effects. Simple shells and stiffened skin structures. (Lecture-problems 3 hours.)
544. Biomedical Applications in Mechanical Engineering (3) S Faculty

Prerequisite: Graduate standing in engineering. Techniques, applications and research findings, with emphasis on human capabilities and limitations in the design and use of man-machine systems. (Lecture-problems 3 hours.)

## 51. Random and Nonlinear Vibrations (3) S Unt

Prerequisite: M.E. 476. Characterization and transmission of random vibration failure due to random vibration. Classification of nonlinear problems; exact graphical and approximate solutions, singular points, stability. (Lecture-problems 3 hours.)

## 572. Stress Analysis in Design (3) $S$ Tsao

Prerequisite: M.E. 477. Application of the basic equations of elasticity to experimental methods of stress analysis with applications to modern design problems. Measurement of stresses and deformations that are of significance in the engineering design of load resisting members. Two-dimensional photoelastic applications. Static and dynamic applications of photostress. (Lecture-problems 3 hours.)

## 53. Theory of Elasticity (3) F Tsao

Prerequisite: ME 477 Fundamental equations of the mechanics of elastic odies. Plane problem. Bending, torsion and extension of Prismatic Bodies. Threedimensional problem. Propagation of waves in elastic media. Approximate methods. Introduction to theory of plasticity. (Lecture-problems 3 hours.)
574. Advanced Design in Mechanical Engineering (3) $S$ Edelman

Prerequisite: M.E. 472. Definition, design conception, functional optimization and solution of advanced mechanical engineering problems. (Lecture-discussion 3 hours.)
576. Engineering Vibrations II (3) F Unt
. Linear systems and self Nathon, Lagrange, Stodola and Rayleigh-Ritz and complex lumped systems. Practical approximate methods of analysis. (Lecture-problems 3 hours.)

## 577. Creep and Fatigue (3) F Faculty

Prerequisites: M.E. 322,373, or consent of instructor. Phenomena of creep and Pref buckling caused by creep; effects of space environment on fatigue; cumulative fatigue damage at normal and elevated temperatures. (Lecture-problems 3 hours.)

## 691. Directed Studies (1-3) F,S Unt, Faculty

Study of information in engineering and scientific literature on a current topic under the direction of a faculty member. Preparation of a written report based on this reading.
695. Seminar in Mechanical Engineering (3) F,S Facuity in special fields: (a) Prerequisite: Consent of instructor. Presentation of research (c) fluid mechanics engineering mechanics (b) heat tran be taken in different areas for a maximum of (d) aeronautics and astronautics May be taken in different areas for maximu six units of credit.
697. Directed Research (1-3) F,S Unt, Faculty
engineering. Theoretical and Prerequisite: Graduate standing engineering requiring extensive analysis
698. Thesis (2-6) F,S Unt, Faculty
98. Thesis (2-6) F,S Unt, Faculty
Planning, preparation, and completion of a thesis in mechanical engineering.

## English

Department Chair: Dr. Eileen E. Lothamer.
Assistant Chair: Mr. Gene L. Dinielli
Emeriti: Charles A. Allen, Ralph K. Allen, Clarence P. Baker, George R. Cerveny, Wilfred P. James, Elizabeth E. Nielsen, Delmer J. Rodabaugh, Aillee Wilford Rose, Stanley C. Rose, George D. Stephens, Harry S. Wilder.
Professors: Ames, Aspiz, Avni, Axelrad, Betar, Bonazza, Brooks, Brophy, Crane, Gilde, Hermann, Hipkiss Knafel, Lawson, R. Lee, Lubbe, Lyon Masback, May, Mittleman, Orgill, Peterson, Polk, Purcell, Sawyer, Schwab, Skarsten, Stetler, Sullivan, J. Williams, L. Williams, O. Williams, S. Wilson, Wylder.

Associate Professors: Bell, A. Black, Borowiec, Brekke, Dinielli, Fried, Hertz, Nelson, Peck, Plourde, Pomeroy, Rosenfelt, Ross, Samuelson, Spiese, Weinstock.
Assistant Professors: Garrott, McCullough.
Undergraduate Advisers: Consult department office for referral to academic advisers.
Graduate Adviser: Dr. Kenneth J. Ames.
Graduate Studies Committee: Ames, Axelrad, Betar, Kasprzyk, Rosenfelt, Wilson
The English curriculum is designed to serve all students in the University by offering them training in written expression and experience in literature and literary criticism.

The courses of study for the undergraduate English major are designed to enlarge the literary background of students and to prepare them for graduate study, teaching, other professions or business careers.

Work in a foreign language is required for one of the options and recommended for the others, preferably to begin (if not continued from high school) in the lower division and to continue in the upper division. Because at least one language is usually required to obtain an advanced degree, students aiming at such degrees should include language study in their undergraduate programs.
The Department of English offers graduate study leading to the master of arts The Department requirements stated in this degree. The candidate is urged Bulletin as well as the specific departmental (copies of which are fully, in the Master of Arts Brochure issued by the department (copies wh available upon request). The candidate is respons

1. Seeing an adviser and planning a tentative program. Filing transcripts of all college work with the English Department.
2. Completing the prerequisites to program approval, including a qualifying examination in the major.
3. Filing a diploma card at the proper time.
4. Making arrangements to take the foreign language examination or filing evidence of completion of course work in a foreign language.
5. Making arrangements to take the final comprehensive examination in English.
A limited number of teaching assistantships are available to students working on the master's degree. The beginning instructor normally teaches one class under the supervision of a faculty member.

There are limited funds available for qualified persons who wish to act as departmental readers, assisting faculty members with papers, library orders, bibliographies, etc.

Application for these positions is made to the Chair of the English Department.

## Major in English for the Bachelor of Arts Degree

In planning a program of courses for the major in English, the student is advised to keep in mind the opportunities and limitations of the different options explained below. More detailed information about each option is available in the English Department office, but each student is also expected to consult a department faculty member regularly for advisement.

The major in English, for all options, consists of 41 units. This total may not include English 100 (which, however, satisfies general education requirements), but, upon petition to the English Department, may include courses taken in other departments. Because some courses are required in several options, a student desiring to change options can do so without any great loss of unit credit toward the 41 -unit total.
A student may accelerate completion of the major in English by taking advantage of the department's credit by examination policy. Certain courses may be waived or substituted for under certain circumstances. Consult an English Department adviser for the option concerned.

## Literature Option (code 2-6830)

The literature option is designed for students who desire a thorough grounding in English and American literature, particularly those planning on graduate study in English. Students aiming at advanced degrees should take as many of the recommended electives as possible. Because a reading knowledge of at least one foreign language is usually required to obtain an advanced degree, such students should also include language study in their undergraduate programs.

This option consists of 41 units, 29 of which must be upper division, including the following:
Lower Division: English 184, 250A,B.
Upper Division: Three courses in English literature: 363 and either two courses from the 450 series or one course from the 450 series and one course from 462,463 , 465, 467A, B, 468; three courses in American literature: 370A, B and one course from $474,475,476,477 A, B, 478$; one author seminar: 469 or 479 ; electives to make up a total of 41 units. Recommended: 331 (classical background); courses in English linguistics; additional courses in the 450, 460, 470 series; 405; 406; 407; 499; Com parative Literature 330A ,B. English 481 or 482 may be elected, but not both, in satisfying this requirement.

## Language and Composition Option (code 2-6829)

The language and composition option is designed to emphasize linguistic studies in preparation for either graduate study in language or for teaching. Four college semesters, or the equivalent, of a language other than English are also required.

This option consists of 41 units, 29 of which must be upper division, including the following:

Lower Division: English 184, 250A,B.
Upper Division: Two courses in literature: 370A,B; five courses in language: 325, $420,421,428$ and one course from 423,426 ; one course in composition chosen from 300, 310; electives to make up a total of 41 units. Recommended: additional courses in literature and language, 405, 406, 407, 499. English 481 or 482 may be elected, but not both, in satisfying this requirement.

## Creative Writing Option (code 2-6831)

The creative writing option is designed for students who wish to write, as well as to study, fiction, poetry or plays.

This option consists of 41 units, 26 of which must be upper division, including the following:
Lower Division: English 184, 205 or 206, 250A,B.
Upper Division: I. Three classes in creative writing chosen from English 405, 406, 407, 415; Theatre Arts 380, 480; Radio-TV 304. The English classes in this group may be repeated. II. Three classes in recent literature, literary genres and/or literary criticism chosen from the following courses: English 385, 386, 459, $467 A, B, 474,475,476,477 A, B$. III. Electives to make up a total of 41 units chosen from the classes listed above and/or any upper division English courses.

## Special Option (code 2-6827)

The opportunity to pursue individually designed 41 -unit programs of study is provided for students who wish a major in English but who have specialinterests or career objectives so different from those for which the other options are designed that their personal educational needs would be better served by some other pattern of courses. Students desiring to take the special option should present a detailed program proposal as early in their college career as possible. Such programs will be recognized only if planned in consultation with an English Department faculty adviser, approved in writing by the adviser and approved by a vote of the Curriculum Committee, given signed approval by the department chair and carried out under the adviser's continuing supervision. Students must complete at least 15 upper division units applicable to their special option program after it has been officially approved. The only specific course requirements and limitations are as follows:

English 184, Composition and Literature (four units).
Electives in English and related fields to make up a total of 41 units. These electives may not include English 100 or 101.

## Major in English (Teaching Emphasis) for the

## Bachelor of Arts Degree (code 2-6803)

Secure Ryan Act information in English Department Credentials Office, HOB317 or 318, or English Department Office, HOB-420.
Requirements for all English Secondary Credential Options:
English 184; 12 units from the following: 250A, 250B, 370A, 370B; 310; four units from the following: 320, 325; three units from the following: English 482 or Comparative Literature 232; Speech Communication 355 (this course does not count for the 41 unit English requirement for the B.A.).
Requirements for Literature Teaching Option: 19 units
English 363; three units from the 450's series; three units from the 470's series; four units from 469 or 479 ; electives to complete.
Requirements for Language and Composition Teaching Option: 19 units in English
English 420, 421; three units from the following: 423, 426, 428; six units from the following: 300, 423,426; electives to complete. In addition this option requires 12 units or equivalent of a foreign language.

Requirements for Creative Writing Teaching Option: 19 units
Nine-12 units from the following: 405, 406, 407; nine-12 units from the following $385,386,459,467 \mathrm{~A}, 467 \mathrm{~B}, 474,475,476,477 \mathrm{~A}, 477 \mathrm{~B}$. The total number of units required in English is 41, at least 29 of which must be upper division.

## Minor in English (Literature) (code 0-6830)

The minor in English (Literature) requires a minimum of 21 units and must include: English 184; eight units from English 250A,B, 370A,B; and nine units of electives to complete at least 21 units from English 363,385,386,390, 398 and/or any courses from the 450,460 or 470 series.

## Minor in English (Language and Composition) (code 0-6829)

The minor in English (Language and Composition) requires a minimum of 20 units and must include: English 310, 325, 420, 421, 428 and 497. Also recommended are three units from English 423 or 426

## Minor in English (Creative Writing) (code 0-6831)

The minor in English (Creative Writing) requires a minimum of 21 units and includes the following: English 184; three units from English 205 or 206, three units from English 405 or 406; three units from English 385 or 386 ; and eight units of electives to complete at least 21 units from English 405, 406, 407, 459, 467A, B, 474, $475,476,477 A, B, 499$. (Note: English 405 and 406 may be repeated for credit to a maximum of six units by consent of instructor.)

## Minor in English (Teaching Emphasis) (code 0-6803

The minor in English (Teaching Emphasis) requires a minimum of 21 units and includes the following: eight units from English 250A,B, 370A,B; English 310; four units from English 320 or 325; English 482; three units of electives (English 317 is not accepted).

## Minor in English (Special Option) (code 0-6828)

The minor in English (Special Option) shall consist of no less than 21 units in a program developed, approved and supervised in the same manner as the Special Option major. One course, English 184, is required of all students, with the rest of the program constructed in consultation with a faculty adviser.

Students may take courses which center on technical writing, for example, or other writing goals; in some cases, they may focus on American or English literature, literature in a particular genre, a particular historical period, or a particular theme.

## Certificate in Honors English

This certificate program offers students the opportunity to follow their own reading schedules, fill in gaps in their knowledge and develop interests in a wide range of subjects offered by the English Department
In order to apply, students must have senior status and a grade point average of 3.0 or better overall and 3.2 or better in their English concentration.

In addition to completion of a recognized degree program in English, a candidate must pass two comprehensive and critical examinations. Passing the first, a qualifying examination which is mainly objective, entitles the student to take the second. Passing the second, an essay examination consisting of an analysis of one or more specific texts, completes the requirements.

Interested students should seek further information from the English Department.

## Certificate Program in Teaching English as a Second Language

The Certificate Program in Teaching English as a Second Language (TESL) is open to students from any field who desire training for teaching English to
speakers of other languages. The program is open to undergraduate or graduate students.

Admission to the program is through application to the English Department.
Requirements for the Certificate in Teaching English as a Second Language

1. A bachelor's degree with an approved major. (The certificate may be completed prior to the completion of the B.A. requirements or while in the process of completing graduate work.)
2. Twenty units selected from the areas listed below, chosen in consultation with an adviser, and determined by class level and student objectives:

One course in general English linguistics: English 325 (not required of student with previous linguistic training in the United States).
One course in English phonology: English 420 or 525.
One course in English morphology and syntax: English 421 or 620.
Two courses in applied English linguistics: English 428, 429, 498 or 528.
Electives to complete the 20 units: English 310, 423, 426, 497, 498 (linguistic topics only), 499 (linguistic topics only), 528, 620, 697 (linguistic topics only), or other courses from those listed above,
3. Internship. Ninety hours of teaching or tutoring English as a second language, including at least 45 hours on the CSULB campus. Application for the internship is a separate process from application for admission to the certificate program, though the two may be done at the same time Guidelines governing the remuneration or academic credit which may be received through the internship are available from the English Department.

## Master of Arts Degree with a Major in English (code 5-6830)

## Prerequisites

aureate degree from an accredited institution (bachelor of arts degree in English or any other bachelor's degree, on the condition of completion of 24 units of upper division courses in English substantially equivalent to those required of an English major at this University, these deficiencies to be determined by the adviser after consultation with the student and study of transcript records).
2. Successful completion of a standardized test (either URE or GRE Verbal Ability and Literature) and an undergraduate grade point average of 3.0 or better in English. If the student meets only one of these criteria, her/his admission will be decided on its individual merits by the Graduate Committee.

## Advancement to Candidacy

1. The candidate must satisfy the general requirements of the University and the department (URE, GRE or equivalent department examination)
2. The graduate program must be approved by a faculty adviser, the graduate adviser and the Dean of Graduate Studies.

## Requirements for the Master of Arts

1. A minimum of 30 units of approved upper division and graduate courses with 24 units in the major.
2. A minimum of 20 units in the 500 and/or 600 series in English at this University, 16 of which must be in the 600 series, including English 696, which is to be completed before or in conjunction with other 600 series courses. (A student will not be allowed to take English 696 unless admitted to the M.A. program.)
3. A minimum of two seminars in the 600 series in English literature before 1900.
4. The foreign language requirement may be fulfilled in one of the following ways:
(a) Completion of 12 college semester units of foreign language with a grade of $C$ or better. These 12 units may include one or two of the following courses with a grade of B or better: English 550, 551, 661
or
(b) Completion of college course work in a foreign language equivalent to sophomore proficiency (201B) with a grade of $C$ or better. or
(c) Proficiency in a foreign language demonstrated by passing either the ETS or a special examination in a language approved by the Graduate Studies Committee
5. Successful completion of a final comprehensive examination.

Note: Students planning to enter a Ph.D. program are advised to pass the ETS or to complete two years of work in a single language.

## Lower Division

Please check the section on "Application Procedures and Admissions Requirements" of this Bulletin for CSUC system-wide writing proficiency requirements.

## 001. Writing Skills (3) F,S Faculty

Required of all entering students with fewer than 60 units whose writing skills are deficient as revealed by examination. Does not count toward graduation but does count toward course load. A basic course in writing, concentrating on organization, paragraph development, effective sentences, appropriate word choices and conventional mechanics, including spelling. Credit/no credit only
100. Composition (3) F,S Faculty

Prerequisite: A recorded satisfactory score on a CSULB English Department approved screening test or English 001 or its equivalent. Writing non-fiction prose with emphasis on exposition. Readings may be assigned. Satisfies the baccalaureate degree requirement for one course in English composition.
101. Composition (3) F,S Faculty

Prerequisite: English 100. Writing expository prose, with emphasis on the research paper. For non-English majors.

## 180. Appreciation of Literature (3) F,S Faculty

Study of works representing the scope and variety of themes and types of imaginative literature. (Not applicable toward an English major. Not open to students with credit in English 184.)
181. Developmental Reading (2) F,S Crane

Rigorous practice, using all levels of mature reading materials, in the techniques of more efficient comprehension at faster rates. Study of expository devices and structures. Extensive vocabulary training. Three hours per week.

## 184. Composition and Literature (4) F,S Faculty

Prerequisite: English 100. Introduction to the major literary genres and to methods of critical expository writing, including methods of research and documentation. Required of all English majors. Open to non-majors with consent of instructor.

## 198. Topics in English (1-4) F, S Axelrad, May, Wylder

Prerequisite: English 100. Topics in language and literature, considered in a small class format. Specific topics will be announced in the Schedule of Classes. Designed for general education. May be repeated with different topics for a maximum of eight units
205. Introduction to Creative Writing: Fiction (3) S Fried, Hermann, Polk Prerequisite: English 100. Practice in the basic elements of fiction writing: character sketch, plot development, description, dialog.

## 206. Introduction to Creative Writing: Poetry

Prerequisite: English 100. Theory and techniques of poetry. Practice in creative work, with group discussions and individual conferences

250A,B. Survey of English Literature (4,4) F,S Faculty Prerequisite: English 100. Representative selections from English writers to and since the mid-eighteenth century
283. Science Fiction (3) S Faculty

The literature of science fiction, from Frankenstein and H.G. Wells to the present, em phasizing the relevance of science and technology to literary fantasy.

## Upper Division

## English 100 is a prerequisite for all upper division courses.

300. Advanced Composition (3) F,S Faculty

Prerequisite: English 100. Writing expository prose, with emphasis upon organization, style and diction. (Not acceptable for graduate credit toward the master's degree.) English 300 is required of all single subject credential candidates who do not choose to take or fail to make a satisfactory score on the Advanced Writing Test.
203. Communication for Accounting and Finance (3) F,S Faculty

Prerequisites: English 100 or equivalent; Speech Communication 130 or 132 or 46 or equivalent: upper division standing; open only to accounting and finance and finance professions.
310. Applied Composition (3) F,S Sullivan, WyIder

Prerequisite: English 101 or 184 or 317 or a baccalaureate degree. Intensive ractice in writing, correcting and evaluating compositions, with specific reference o contemporary classroom situations and problems. Required for all credential candidates in English.

## 317. Technical Writing (3) F,S Faculty

Prest industry, science, and government. Long and short forms including reports, proposals, manuals, and journal articles, with emphasis on the longer research paper or technical report.

## *320. English Grammar (4) F, S Faculty Advanced study of the principles of English grammar

*325. Models of English Grammar (4) F,S McCullough, Ross
In. Aishal models of American English, with reference to traditional grammar.
363. Shakespeare I (4) F, S Faculty

Principal plays of Shakespeare. Not open to students with credit in English 464 or 464A.
$370 A, B$. Survey of American Literature (4,4) F,S Faculty
70A,B. Survey of American Literature (4,4) F,S Facuity
Representative selections from American writers to and since about 1865.
384. Principles of Literary Study (3) F,S Fine, May, Pomeroy, Samuelson Fundamental issues of literary study such as literary history; literary forms themes and conventions; major critical approaches. Intense written practice in literary analysis.
*385. The Short Story (3) F Fried, Hermann, Lothamer, May, Polk, L. Williams The short story as a literary genre, with emphasis on analysis of individual stories.
*386. Poetry (3) S Ames, Lee, Lim, Mittleman, Polk Poetry as a literary genre, with emphasis on analysis of individual poems.
*390. Studies in Contemporary Literature (3) F, S Faculty
Reading and analysis of literary works, British and American, written since 1945. Topics, themes, limitations for each section will be announced in the Schedule of Classes. May be repeated once with a different topic.
*398. Modern Drama (3) S Betar, Lyon
Continental, English, and American drama from Ibsen to the present.
*405. Creative Writing: Short Story (3) F, S Fried, Hermann, Polk Prerequisite: English 205 or consent of instructor. Writing short stories, with a detailed study of published models and with emphasis on the creative process. (May be repeated for credit to a maximum of 6 units by consent of instructor.)

## *406. Creative Writing: Poetry (3) F,S Lee, Polk

Prerequisite: English 206 or consent of instructor. Writing poetry, with a detailed study of published models and with emphasis on the creative process. (May be repeated for credit to a maximum of 6 units by consent of instructor.)

## *407. Creative Writing: Novel (3) S Hermann

Prerequisite: Consent of instructor. Writing long fiction, with a detailed study of published models and with emphasis on the creative process. (May be repeated for credit to a maximum of 6 units by consent of instructor.)
*420. Structure of Modern English: Phonology (3) F, S Hertz, McCullough, Ross, Sawyer
Prerequisite: English 325 or consent of instructor. Study of the phonology of American English, using articulatory phonetic, phonemic and distinctive feature analyses. Not open to students with credit in English 321A.
*421. Structure of Modern English: Morphology and Synta
(3) F,S Hertz, McCullough, Ross, Sawyer
Prerequisite: English 325 or consent of instructor. Study of the morphology and syntax of American English, using structural and early and recent transformational models. Not open to students with credit in English 321B.

## 423. Semantics (3) F J. Williams

Study of meaning in language.
*426. History of the English Language (3) F,S Knafel, Ross
Development of the English language from its beginnings to the present day. Not open to students with credit in English 323.
*428. Applied Linguistics (3) F Sawyer
Prerequisites: English 420 and 421. Linguistic research applied to the study and teaching of the English language.

## 429. Language Strategies for Bilingual/TESL Classrooms (3) F,S

 McCulloughPrerequisite: English 325 (may be taken concurrently) or consent of instructor. Linguistic strategies for teaching the native speaker and the second language learner. To gain practical experience, students will work a minimum of 12 hours a semester in off-cam pus or on-campus bilingual and ESL classrooms.
*431. Classical Background of English Literature (3) F Faculty
Greek and Roman literature, in translation, in relation to English literature; the interrelations of classical literature with philosophy and art. Not open to students with credit in English 331.

## 451. Mediaeval Literature of the British Isles

Relections of Old and Middle English prose and poetry read for Representative in modern English versions; includes Beowulf, the romance, mediaeval drama, literature of contemporary conditions, Chaucer and the ballad.
452. Literature of the Renaissance (1500-1603) (3) F Brooks, Crane, Gilde, Orgill
Prose and poetry of Marlowe, Sidney, Ralegh, Spenser and other predecessors and contemporaries of Shakespeare, noting the influence of Humanism and the emergence of literary identity.
453. Literature of the Late Renaissance (1603-1660) (3) S Ames, Axelrad, Gilde, Purcell
Poetry and prose (chiefly non-dramatic) of Milton, Bacon, Jonson, Donne and the "Metaphysicals," and their contemporaries.

## *455. English Literature of the Enlightenment (1660-1798) (3) F,S Black,

Crawford, Purcell, Skarsten
Prose and poetry (chiefly non-dramatic) of Swift, Dryden, Pope, Johnson, Boswell and their contemporaries, with emphasis on major satires such as Gulliver's Travels and The Rape of the Lock. Not open to students with credit in English 454.
*456. English Literature of the Romantic Period (1798-1832) (3) S Avni,
Crawford, Lim, Rodabaugh, Skarsten
Poetry and prose (chiefly non-dramatic) of Blake, Wordsworth, Coleridge, Byron Shelley, Keats and their contemporaries, emphasizing the modern Romantic spirit theories of literary art and the concept of the self.
*458. English Poetry and Prose of the Victorian Age (1832-1900)
Darbee, Lothamer, May, Peterson, Plourde, Weins Carlyle, Mill and others
Poetry and prose of Tennyson, Browning, Arnold, Calious controversies. Not emphasizing literary, social and political issues and religious controversies. No open to students with credit in English 457.
*459. English Literature of the Twentieth Century (1900-Present)
(3) F Lecklin, Mittleman, Peck, Samuelson, Wilson
(3) $F$ Lawrence, Joyce, Woolf and others Prose and poetry systems.
*462. Chaucer (3) S Faculty
Works of Geoffrey Chaucer in Middle English.
*463. Shakespeare II (3) F,S Bonazza
Prerequisite: English 363. Advanced study of some of the plays of Shakespeare Not open to students with credit in English 464B.

## *465. Milton (3) F Purcel

Works of John Milton.
*467A,B. The English Novel $(3,3)$ F,S Lothamer, Lyon
History and development of long prose fiction in the British Isles to and since 1832
*468. English Drama (3) F Brooks, Crane, Orgill
Readings from the history of English drama, excluding Shakespeare, including Marlowe, Jonson and Restoration comedy. Not open to students with credit in English 468A or B
469. Critical Studies in Major English Writers (4) F,S Faculty

Prerequisites: At least senior standing, 12 units of upper division English. Intensive study of one to three major English authors. The authors to be studied will be announced in the Schedule of Classes. May be repeated for credit with different authors to a maximum of eight units, but no more than four units may be used to satisfy the requirements for the English major. Open to graduate students but shall not count in the 30 units for the M.A. in English
*474. Twentieth Century American Literature (3) S Faculty American literature from about 1914 to the present.
*475. The American Short Story (3) F Faculty History and development of the short story and its criticism in the United States.
*476. American Poetry (3) F Faculty
History and development of poetry and its criticism in the United States.
*477A,B. The American Novel $(3,3)$ F,S Faculty
History and development of the novel and its criticism in the United States to and since the 1920's. Not open to students with credit in English 477.
*478. American Drama (3) S Faculty
History and development of drama and its criticism in the United States.
479. Critical Studies in Major American Writers (4) F,S Faculty

Prerequisites: At least senior standing, 12 units of upper division English including English 370A,B. Intensive study of one to three major American authors. The authors to be studied will be announced in the Schedule of Classes. May be repeated for credit with different authors to a maximum of eight units, but no more than four units may be used to satisfy the requirements for the English major. Open to graduate students but shall not count in the 30 units for the M.A. in English
481. Children's Literature (3) F,S Lawson, Masback

Survey of literature suitable for children.
482. Literature for Adolescents (3) F,S Faculty

Prerequisite: One college course in literature. Survey of literature suitable for adolescents.
497. Directed Studies in Composition (4) F, S Faculty

Prerequisite: Graduate standing or one of the following courses: English 300, $310,405,406,407$. Theory and practice of teaching English composition. Recommended for single-subject credential candidates and those preparing for college level teaching. CR/NC only. (Three hours a week in freshmen composition class as laboratory; one hour per week in seminar.)
*498. Topics in English (1-4) F,S Faculty
Exploration of topics in language and literature, specific topics to be announced in the Schedule of Classes. May be repeated with different topics, but no more than six units may be applied to the 41 units required for the English major.
499. Directed Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Independent study undertaken under the supervision of a faculty member. May be repeated for credit to a maximum of 4 units. Not applicable toward the Master of Arts in English.

Also, see Comparative Literature Department for course offerings.

## Graduate Division

521. Historical Linguistics (4) S Sawyer

Prerequisites: English 420, 421. Advanced study of language change, language families, and language relationships using the methods of comparative linguistics.
525. Analytical Phonology (4) F Ross, Sawyer

Prerequisites: English 420, 421. Theory and practice of descriptive, acoustic, distinctive feature and transformational phonology.

## 528. Current Issues in English as a Second Language (3) F,S Facuity

Prerequisite: English 428 or consent of instructor. Advanced study in applied linguistics, focusing on topics of current interest in teaching English as a Second Language. May be repeated under a different topic to a maximum of six units.

## 535. Teaching Composition (3) F,S Sullivan

Prerequisite: Bachelor's degree or consent of instructor. Intensive examination and study of composition teaching practices, research and evaluation in public schools, including community colleges.
537. Current Issues in English Instruction (3) F,S Sullivan

Designed for in-service teachers. Intensive studies and research in special, timely topics (as announced in the Schedule of Classes) related to the teaching of English. May be repeated to a maximum of six units with different topics.

## 550. Old English Language and Literature (4) F Knafe

Representative selections from Anglo-Saxon literature in the original language.
551. Middle English Language and Literature (4) $F$ Bell, Knafel

Advanced study of the Middle English language and its chief dialects and representative selections from the literature.
583. Special Topics in Literature (3-4) F,S Faculty
intensive studies in special topics in literary theory, techniques, types, genres, modes, themes, movements and in the relations of literature with other arts and disciplines, as announced in the Schedule of Classes. May be repeated for credit, on different topics, to a maximum of eight units.
584. Contemporary Literary Theory (3) F,S May

Study of the principal theories of literature including Structuralism, Hermeneutics, theory of genre and theory of criticism.

## 598. Directed Studies in Creative Writing <br> (1-3) F,S Fried, Hermann, Lee

Locklin, Polk
Prerequisites: Baccalaureate degree, consent of instructor. Independent creative activity under the supervision of a faculty member. May be repeated for credit to a maximum of three units. Not applicable to the Master of Arts in English.
20. Seminar in Special Topics in Linguistics (4) S Sawyer

Prerequisites: English 420, 421 or consent of instructor. Intensive studies in precial topics in linguistics as announced in the Schedule of Classes. May be repeated for credit, on different topics, to a maximum of eight units.

## 623. Seminar in Dialect Study (4) F Sawyer

Prerequisites: English 420, 421 or consent of instructor. Intensive study and individual research in variations within a language, emphasizing dialect studies of modern English.
652. Seminar in the English Renaissance (4) $S$ Gilde, Orgil

Prerequisite: English 696 (may be taken concurrently). Intensive studies in the literature of the period, chiefly Elizabethan.
653. Seminar in the Age of Milton (4) F Ames, Gilde, Purcell

Prerequisite: English 696 (may be taken concurrently). Intensive studies in English literature of the Stuart and Commonwealth periods, including Milton.
655. Seminar in Restoration and Eighteenth Century Literature
(4) S Crawford, Purcell, Skarsten

Prerequisite: English 696 (may be taken concurrently). Intensive studies in English literature of the Restoration and eighteenth century. Not open to students with credit in English 654.
656. Seminar in Romantic Literature (4) F Crawford, Skarsten, L. Williams

Prerequisite: English 696 (may be taken concurrently). Intensive studies in English literature of the Romantic period.
657. Seminar in Victorian Literature (4) F Lothamer, May, Peterson

Prerequisite: English 696 (may be taken concurrently). Intensive studies in English literature of the Victorian period.

## 659. Seminar in Twentieth Century English Literature (4) $F$ Locklin

 Mittleman, WilsonPrerequisite: English 696 (may be taken concurrently). Intensive studies in English literature from about 1900 to the present.
672. Seminar in the Nineteenth Century American Renaissance
(4) F Faculty

Prerequisite: English 696 (may be taken concurrently). Intensive studies in American literature from about 1820 to about 1865.
673. Seminar in American Realism (4) F Faculty

Prerequisite: English 696 (may be taken concurrently). Intensive studies in the development of realism in American literature.
674. Seminar in Twentieth Century American Literature (4) S Faculty

Prerequisite: English 696 (may be taken concurrently). Intensive studies of 20th century American writers, with attention to social forces conditioning their points of view.
681. Seminar in Major Authors (4) F,S Faculty

Prerequisite: English 696 (may be taken concurrently). Intensive studies in the works of specific authors as announced in the Schedule of Classes. Not open to students with credit in English 469 or 479 covering the same author. May be repeated for credit, on different authors, to a maximum of 12 units.

## 696. Seminar in Literary Criticism and Research (4) F,S Faculty

Study of major critical approaches to literature and basic literary research methods. Introduction to the discipline of literary criticism, various critical methodologies, techniques of bibliography and research, important literary reference works. Writing of critical research papers. A student will not be allowed to take English 696 unless admitted to the M.A. program. (An English M.A candidate may not be enrolled in any other 600 course unless he has completed or is also enrolled in English 696.)

## 697. Directed Research (1-3) F,S Faculty

Prerequisites: English 696 and consent of instructor. Individual research or intensive study under the guidance of a faculty member.

## 698. Thesis (1-6) F,S Faculty

Prerequisites: English 696 (may be taken concurrently) and consent of instructor. Planning, preparation, and completion of a thesis under supervision of a faculty committee. Must be taken for a total of six units.


The Center for Environmental Studies has as its objectives (1) creation of an awareness of the kind and scope of environmental problems, (2) preparation to analyze environmental problems and issues and (3) training in research in, and solution of, environmental problems

The center offers the Environmental Studies Certificate Program which is comparable to an academic minor. It has three components: natural environment prerequisites (or corequisites), core requirements and elective courses distributed prerequisites (or corequisites), cord analysis and application.
in human behavior, resources for the certificate is directed toward both the
The pattern of completion for the certificate is directed toward bots the technically trained, research oriented student and the liberal arts, humanistically oriented student. Students in both areas must contact the Director, Center for Environmental Studies, for entry into the program. This contact should be made as early as possible in the student's academic career so that he or she may receive counseling in the most appropriate course work.
Requirements for the Certificate in Environmental Studies:

1. A bachelor's degree (may be completed concurrently).
2. Consultation with the director of the program.
3. Overall grade point average of 2.0 in all work attempted

33 units distributed as follows:

## Environmental Studies

A. Prerequisite or Corequisite Courses (nine units outside the major department selected from the three categories below; at least one laboratory course from categories a. or b. must be included, and a second is highly recommended).
a. Life Sciences: At least three units from Biology 200, 201, 212, 216, 313 324, 327, 350, 351, 352, 416, 450, 453, 464; Microbiology 100, 210, 441
b. Physical Sciences: At least three units from Chemistry 100, 111A, 111B 200, 300. Geology $100,102,104,105,160,163,331,463,464,465,490 \mathrm{~g}$ Physics 100A, 100B, 101A, 103, 104, 105, 106, 151, 152
c. Geography: $140,440,442,444$.
B. Core requirements (nine units; upon petition to the Director, three units of Environmental Studies 499 may be substituted for one of the following):
a. Environmental Studies 360 (or Philosophy 360)
b. Environmental Studies 490 (2 units) and 490L (1 unit), taken concurrently (only the sections entitled Environmental Field Studies may be used; the prerequisite for these courses is prior completion of six units of Section A. above, including the laboratory).
c. Environmental Studies 496.
C. Elective Requirements ( 15 units, distributed over the following three categories; nine of these units must be outside the major department, six units must be outside the school, and six units must be at upper division level).
a. Human Behavior: At least three units outside the major department from Economics 334; English 498 (only the section entitled "Exploited Eden" is applicable); History 405; Mechanical Engineering 200; Microbiology 321; Political Science 426, 442; Psychology 351 or Sociology 335; Sociology 350.
b. Man and Resources: At least three units outside the major department from Biology 100, 203; Chemical Engineering 475; Civil Engineering 390, 460, 463, 464, 465, 467, 468, 469; Economics 305; Electrical Engineering 265; Geography 160, 204, 304, 356, 455, 460, 467; Geology 190, 191, 305; Health Science 322; Mechanical Engineering 201; Physical Science 100; Recreation 318; Sociology 410.
c. Analysis and Application: Three units from Biology 260, 451; Computer Studies 210; Economics 380; Geography 487, 490; Geology 306; Health Science 485; Management 413; Mathematics 180; Psychology 310 Quantitative Systems 240; Urban Studies 402, 496. (Upon approval of the Director, one additional course from this category may be used to fulfil Section C, Elective Requirements in lieu of a course from a. or b. above).

## Upper Division

360. Ethics and Ecology (3) F, S Massey, Quest

Philosophical look at ecological problems. Survey of a number of ethical positions held by the great philosophers will be made and current ecological problems will be examined from the points of view of the ethical positions studied. Not open to students with credit in Philosophy 360.

## 490. Special Topics in Environmental Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Topics of current interest in enviromental studies selected for intensive development. May be repeated (with change of topic) for a maximum of six units of credit. Topics will be announced in the Schedule of Classes. Upon approval of the director of the Center for Environmental Studies, this classes. Upon approval of the director of acceptable for credit in lieu of equivalent units in Section C, Elective course is accep
Requirements.

490L. Special Topics Laboratory (1-2) F,S Faculty
Prerequisite: Consent of instructor. Laboratory in topics of current interest in environmental studies selected for intensive development. May be repeated for a maximum of four units of credit. Topics will be announced in the Schedule of Classes. Upon approval of the director of the Center for Environmental Studies, this course is acceptable for credit toward the Environmental Studies Certificate in lieu of equivalent units in appropriate subject areas.
496. Practical Involvement in Environmental Issues (3) F,S Faculty

Prerequisite: Consent of instructor. Intern experience in public agencies and private industry.

## 499. Directed Studies (1-3) F, S Faculty

Prerequisite: Consent of instructor. Independent study under the supervision of a faculty member. Upon approval of the director of the Center for Environmental Studies this course is acceptable for credit towards the Environmental Studies Certificate in lieu of equivalent units in Sections B and C (Core Requirements and Elective Requirements).

## Experiential Learning Center

## Director: Hal M. Schaffer.

## Cooperative Education (CO-OP): Ken Hutchins.

Educational Participation in Communities (EPIC): Ruby Leavell
The purpose of the Experiential Learning Center (ELC) is to offer students the opportunity to engage in supervised volunteer or paid field experience programs. The center in comprised of three programs, the Educational Participation in Communities (EPIC) volunteer field experience program, the Cooperative Education COPP) paid field experience program, and the Summer Internship Program. These understanding of the and practical application through on-the-job lationship between classion the field. The programs provide an organized plan exposure to professionals in the cassroom work and carefully selected field experience


## Lower Division

297. EPIC Field Experience (3) F, S Faculty

Prerequisite: Advisement through ELC Office. Volunteer field work is arranged in selected agencies in such areas as elementary and secondary schools, geriatrics, legal, medical, mentally and physically handicapped, pre-schools and probation. The course offers the student an opportunity to test occupational goals by applying academic theory to real situations. Students will be expected to present detailed 2 written reports on work, agency activity 6 hours.)

## Upper Division

485. Oral History Methods (1) F,S Faculty

Through a series of workshops and through field experience, skills in oral history will be developed which will enable students to use oral history either for their own personal use in family history or for class projects in their specific fields.

## 497. EPIC Field Experience (3) F,S Faculty

Prerequisites: Upper division standing, advisement through ELC Office Volunteer field work will be arranged in selected agencies in such areas as elementary and secondary schools, geriatrics, legal, medical, mentally and physically handicapped, pre-schools and probation. The course offers the studen an opportunity to test occupational goals by applying academic theory to rea situations. Students will be expected to present detailed written reports on work done. Evaluation on Credit/No Credit basis. (Class activity 2 hours, agency activity 6 hours.)

## 498. CO-OP Field Experience (3) F,S Faculty

Prerequisites: Upper division standing, consent of the Cooperative Education Office. Designed for students enrolled in a CO-OP Field Experience. Students will use their on-the-job experiences as a basis for analysis, goal setting and problem solving. The theories and concepts and skills will be taught by a combination of lecture and discussion in seminars. All participants will utilize a learning contract A written report is required. Credit/Not Credit basis.

## French-Italian

## Department Chair: Dr. F.M. Swensen.

Professors: Quillen, Swensen, Thomas.
Associate Professors: Kessler, Winter, Yperman
Credential Adviser: Mr. Herbert Winter.
Undergraduate Adviser: Dr.F.M. Swensen
Graduate Adviser: Dr. Eugene E. Kessler.

## French

The undergraduate program in French is designed to meet the needs of (1) prospective teachers; (2) students preparing for executive secretarial positions where knowledge of modern languages is essential; (3) students who plan to enter he consular service, and majors in international relations; (4) those who desire to enlarge their background of experience in the field of communication and share in the aesthetic and cultural contributions of the peoples of the world; and (5) those preparing for professional and graduate work

The French-Italian Department offers graduate study leading to the master of ts degree in French. The candidate is urged to observe the general requirements stated in this Bulletin, as well as the specific departmental requirements. In all pper division and graduate level courses, French is the language of instruction in all regular classes.

Major in French for the Bachelor of Arts Degree (code 2-6812)
Lower Division: One year of intermediate French, French 214. Students who have completed sufficient high school French may take upper division courses as com
Upper Division: A minimum of 30 units of upper division courses which must include French $312,313,314,335,336,411,440$ and three of the following courses: $414,470,471,472,474,477,479,490$. Candidates for the teaching credential must take French 414.
Departmental Requirement: One year of a second foreign language is required of all majors.

## Minor in French (code 0-6812)

A minimum of 20 units which must include: French $312,313,314$

## Master of Arts Degree with a Major in French (code 5-6812)

## Prerequisites

1. A bachelor of arts degree in French, or
2. A bachelor's degree with a minimum of 24 upper division units in French, comparable to those required of a major in French at this University. Deficiencies will be determined by the adviser after consultation with the student and study of transcript records.

## Advancement to Candidacy

1. Approval of the graduate program by the graduate adviser, the faculty adviser and/or departmental committee, and the Dean of Graduate Studies.
2. The candidate may file for advancement to candidacy after she/he has filed a transcript of credits or a change of objective form, and completed the prerequisites.

## Requirements for the Master of Arts

1. Completion of a minimum of 30 units of approved upper division and graduate courses with 24 units in French.
2. A minimum of 18 units in the 600 series in French
3. A reading knowledge of German, Italian, Latin, Russian, or Spanish. Another language may be substituted only under special circumstances. This requirement must be completed before taking the comprehensive examination
4. A comprehensive examination

## Lower Division

101A-B. Fundamentals of French (4,4) F,S Faculty
Fundamental skills of speaking, comprehending, reading and writing
101A. For those who are beginning the study of French or who have had one year of high school French
101B. Prerequisite: French 101A or two years of high school French. Continuation of French 101A.

103A. Beginning Reading for Non-Majors (3) F,S Faculty
Course designed for students in any field who are preparing to satisfy reading examination requirements in French. Concentration on vocabulary and sentence structure to enable a student to read independently specialized literature in his major field.

## 201A-B. Intermediate French (4,4) F, S Faculty

Continued work in speaking, pronunciation, comprehension and writing with some reading of modern writers in the second semester.
201A. Prerequisite: French 101A-B or three years of high school French or equivalent.
201B. Prerequisite: French 201A or four years of high school French or equivalent.

## 214. Beginning Conversation (3) F,S Faculty

Prerequisite: French 101B. Should be taken concurrently with French 201A or 201B. Designed to develop basic conversational skills and to prepare for more advanced work in French 314.

## Upper Division

## 312. Advanced French I (3) F, S Faculty

Prerequisite: French 201B or equivalent. Reading of French writings, review of grammatical principles, and a general consolidation of the three language skills: reading, comprehension and composition.
313. Advanced French II (3) F, S Faculty

Prerequisite: French 312 or equivalent. Sequel to French 312, with continuing emphasis on reading of French texts, regular composition work based on these readings, and the development of increased mastery of the written language.
314. Advanced Conversation (3) F,S Faculty Prerequisite: French 214 or consent of instructor. Continuation of French 214.
335. Survey of French Literature I (3) F Faculty

Prerequisite: Upper division standing in French. From the Middle Ages through the Eighteenth Century.

## 336. Survey of French Literature II (3) S Faculty

Prerequisite: Upper division standing in French. Nineteenth and Twentieth Centuries
*411. Advanced French Syntax and Composition (3) F Faculty
Prerequisites: French 312 and 313 or equivalent. Special emphasis on the writing of short compositions and developing an awareness of French style.

## *414. French Phonetics (3) S Thomas

Prerequisites: French 312 and 313 or consent of instructor. General concepts of linguistic science. Linguistics applied to the study and teaching of the French language. Articulatory phonetics as a means to form native French pronunciation habits with emphasis upon the difficulties encountered by speakers of American English.
*440. French Civilization (3) $S$ Quillen, Yperman
Prerequisite: French 313 (may be taken concurrently with French 335 or 336 or with consent of instructor). Significant aspects of French art, culture and social institutions.
*455. Modern French Drama (3) SS Winter
Prerequisites: French 335,336 or consent of instructor. Survey of contemporary French theatre

## *470. French Literature of the Middle Ages <br> (3) S, 1979 and alternate

## years Thomas

Prerequisites: French 335, 336 or consent of instructor. Study of representative drama, poetry and prose of the period. Texts in modern French.

## 471. French Literature of the Renaissance <br> (3) F, 1979 and alternate

 years Kessler, YpermanPrerequisites: French 335, 336 or consent of instructor. Study of representative drama, poetry and prose of the 16th Century

## *472. French Literature of the Seventeenth Century <br> (3) F, 1979 and alternate

 years QuillenPrerequisites: French 335, 336 or consent of instructor. Study of representative drama, poetry and prose of the century.

## *474. The Age of Enlightenment (3) S, 1980 and alternate

 years Kessler, SwensenPrerequisites: French 335, 336 or consent of instructor. Study of representative writers and thinkers of the century. Drama, poetry and prose.
*477. French Literature of the Nineteenth Century (3) F, 1980 and alternate years Swensen
Prerequisites: French 335, 336 or consent of instructor. Study of representative writers of the century. Drama, poetry and prose.

## *479. French Literature of the Twentieth Century (3) F, 1980 and alternat

 years Winter, YpermanPrerequisites. French 335,336 or consent of instructor. Study of representative writers of the century. Drama, poetry and prose.
*490. Special Topics in French (3) F,S Faculty
Prerequisite: French 335,336 or consent of instructor. Study of a particular topic in French literature, language or culture. Specific topics to be announced in the Schedule of Classes. May be repeated with different topics, but not more than six units may be applied to the requirements for the major in French
*499. Directed Studies (1-3) F,S Faculty
Prerequisites: Consent of instructor and department chair. Independent study undertaken under the supervision of a faculty member. May be repeated for three units provided the material is not the same. Additional credit beyond three units is available only under exceptional circumstances and with prior approval of the department, but under no circumstances may the total exceed six units.

## Graduate Division

## 604. Seminar in a Century of French Literature (3) F,S Faculty

Prerequisite: Corresponding 400 level century survey course or consent of instructor. Intensive studies in one of the following: (a) Medieval period, (b) 16th Century, (c) 17 th Century, (d) 18 th Century, (g) 19 th Century, (h) 20 th Century. Courses may be taken concurrently or repeated if century studied is different. Each seminar gives three units of credit for a total of 18 .
685. Seminar in French Literary Masters (3) F,S Faculty

The study of one outstanding French author each semester such as: Du Bellay Diderot, Hugo, Balzac, Proust, Gide. May be repeated once for credit, provided the author studied is not the same.

## 688. Seminar in French Literature or Culture (3) F,S Faculty

Prerequisite: Graduate standing in French. Intensive study of a specific aspect of French literature or culture. Subjects to be announced in the Schedule of Classes. May be repeated for credit on different subjects.

## 697. Directed Research (1-3) F,S Faculty

Prerequisite: Consent of department chair. Individual study under the guidance of a faculty member. May be taken for a maximum of three units
698. Thesis (2-6) F,S Faculty

Planning, preparation, and completion of thesis in French for the master's degree. Optional.

## Italian

## Lower Division

## 101A,B. Fundamentais of italian (4,4) F,S Faculty

Practice in grammar, reading, pronunciation, writing and conversation
101A. For those who are beginning the study of Italian or who have had one year of high school Italian

101B. Prerequisite: Italian 101A or two years of high school Italian. Continuation of Italian 101A

201A, B. Intermediate Italian (4,4) F, S Faculty
Readings of representative writers with oral and written practice
201A. Prerequisite: Italian 101A-B or three years of high school Italian or equivalent.
201B. Prerequisite: Italian 201A or four years of high school Italian or equivalent

## 214. Beginning Conversation (3) F,S Faculty

Prerequisite: Italian 101B. Should be taken concurrently with Italian 201A or 201B. Designed to develop basic conversational skills and to prepare for more advanced work in Italian 314.

## Upper Division

## 312. Advanced Italian I (3) F, S Faculty

Prerequisite: Italian 201B. Extensive reading of Italian writings, review of grammatical principles and a general consolidation of the three language skills: reading, comprehension and composition.

## 313. Advanced Italian II (3) F,S Faculty

Prerequisite: Italian 312 or equivalent. A sequel of Italian 312 with continuing Preasis on extensive reading of Italian texts, regular composition work based on these readings and the development of increased mastery of the written language.

## 490. Special Topics in Italian (3) F,S Faculty

Prerequisite: Upper division standing in Italian or consent of instructor. Study of a particular topic or aspect of Italian literature, language or culture. Specific topics to be announced in the Schedule of Classes. May be repeated with different topics to a maximum of 12 units.
499. Directed Studies (1-3) F, S Faculty

Prerequisite: Consent of instructor and department chair. Independent study undertaken under the supervision of a faculty member. May be repeated to a maximum of six units.

## Geography

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## Department Chair: Dr. Frederick H. Scantling

Professors: Anderson, Ericksen, Karabenick, Kimura, Steiner, Wilson.
Associate Professors: Debysingh, Outwater, Peters, Scantling, Splansky, Tyner Wheeler.
Credential Adviser: Dr. Jean D. Wheeler
Undergraduate Adviser: Dr. Frederick H. Scantling

## Graduate Adviser: Dr. Gary L. Peters.

Geography integrates information from many social and natural sciences by cusing upon human activities within the context of their physical and cultural nvironment. Because of the diversity of subject matter which it considers eography offers a broad, liberal education which is applicable to many careers These include elementary, secondary and college teaching: cartography; regiona urban and environmental planning; business; government and the foreign service.

The Geography Department offers the bachelor of arts and master of arts tegrees, as well as a minor. Certain geography courses are applicable to teaching ential programs; to the degrees in earth science and liberal studies and to ertificate programs in environmental, liberal, urban, Asian, Latin American, and Russian and East European studies

Students may obtain from the department materials describing the major, minor nd graduate programs and courses recommended for career preparation in geography.

The master of arts degree in geography is designed for those wishing to expand ir eographic competence beyond that expected of the bachelor's degree, for ase sering degree is required and as reparation for further study elsewhere. Candidates are responsible for observing
 gequan the Geography Department on request

## Major in Geography for the Bachelor of Arts Degree (code 2-8515)

ower Division: Geography 100, 140, 152, 160 or equivalents.
Uper Division: 24 units distributed as follows:
(1) Systematic courses: 9 to 18 units chosen from Geography 440, 442, 444, 452, $455,460,466,467,470,494 \dagger, 497 \dagger$, of which three units must be from 440,442 $455,460,466,467,470,494 \dagger, 497 \dagger$, of which three $40,452,455,460,466,467,470,494 \dagger, 497 \dagger$,
or 444 , and three units must be from 452 and
(2) Methods and Techniques courses: 3 to 12 units chosen from 380, 400, 482, $487,488,490,494 \dagger, 497 \dagger, 596$, and
(3) Regional courses: 3 to 9 units chosen from 304, 306, 308, 309, 313, 314, 316, $318,321,322,326,494 \dagger, 497 \dagger$.
Social Science Requirement: Six upper division units must be taken outside the department, and within the School of Social and Behavioral Sciences. Selection of courses to meet this requirement should be made in consultation with the departmental undergraduate adviser. These courses do not count for the General Education requirement.

Recommendation: Courses should be selected in consultation with the undergraduate adviser for the purpose of planning career objectives.

## Minor in Geography (code 0-8515)

A minimum of 21 units consisting of Geography 380 and 18 units chosen in consultation with an adviser of which at least nine units must be in upper division.

## Master of Arts Degree with a Major in Geography (code 5-8515)

## Prerequisites

1. A bachelor's degree in geography, or:
2. A bachelor's degree with 24 units of upper division courses in geography substantially equivalent to that required for a major in geography at this University. Deficiencies will be determined by the Geography Department, which may then require the completion of deficient courses and/or passage of a special examination prior to enrollment in the master's degree program.
3. Completion of 3 units chosen from Geography $400,482,487$ or 488.
4. An undergraduate grade point average of $3.0(B)$ or better in geography, or alternative evidence of ability to do graduate work.
5. File with the department a declaration of intent to seek the master's degree in geography.

## Advancement to Candidacy

1. See the Geography Master of Arts Handbook.
2. See the general University requirements.

## Requirements for the Master of Arts

1. Completion of 30 units of approved upper division and graduate courses. A minimum of 24 units must be in geography, and at least 15 units must be in the 500 and 600 -level courses, and at least 6 units must be from the 600 series. Geography 697 for thesis candidates and 698 for comprehensive examination candidates will not count towards this 15 -unit requirement.
2. Completion of 6 units chosen from Geography $400,482,487$ or 488.
3. Specific course work to gain competence in foreign language, in quantitative techniques, in written composition, or in other realms essential to a particular course of study may be prescribed by the student's advisory committee.
4. Thesis or comprehensive examination.

At the time of enrollment in 494 or 497 the student must obtain written departmental notification course will meet systematic or methods and techniques or regional requirements for the major.

## Lower Division

100. World Regional Geography (3) F, S Debysingh, Ericksen, Karabenick, Scantling, Splansky
An introductory regional geography of the world, treating the major countries in terms of their population, resources, economic development, physical environment and geographic problems. Especially recommended for elementary teaching majors.

## 140. Introduction to Physical Geography (3) F,S Kimura, Peters, Steiner,

 WheelerSystematic study of the physical environment with an emphasis on human environmental interaction and perceptions of environmental hazards and resources.
152. Introduction to Economic Geography (3) F,S Anderson, Peters

Location and organization of the world's major types of production, including agriculture, mining, forest products, fisheries, manufacturing and associated service industries.

## 160. Introduction to Cultural Geography (3) F,S Debysingh, Scantling,

 SplanskyGeographic aspects of culture, including the past and present social, political and economic factors that are related to man's perception, organization and use of his environment.
204. The Southern California Urban Environment (3) F,S Outwater

Spatial features, issues and problems that characterize the Southern California urban environment. Attention is focused on the Greater Los Angeles area embracing Ventura, Los Angeles, Orange and adjacent urbanized portions o Riverside and San Bernardino counties. Not applicable toward a geography major

## Upper Division

## Regional

These courses examine the relationships between peoples, cultures and thei landscapes in specific areas of the world. There are no prerequisites for these courses; their broad scope provides the student a better understanding and appreciation of the world in which we live, thus they are ideally suited for general appreciation of the worldies.
304. California (3) F,S Splansky, Steiner, Wheeler, Wilson

California's diverse natural and cultural environment with emphasis upon social and economic problems and the hum an response to environmental hazards.
306. United States and Canada (3) F,S Anderson, Outwater

Common social, economic and political interests of the major human use regions of the United States and Canada. The study describes and interprets the culture aterns of each region in relation to the natural settings in which they have developed.
308. Africa South of the Sahara (3) F Splansky

Examination of the diverse African landscapes and the cultural, economic, ettlement and political relationships that characterize them

## 309. North Africa and the Middle East (3) S Karabenick

Hum and physical settings of North Africa and the Middle East are examined. Special emphasis is placed upon recent economic and political development, tressing those factors which underlie the region's general instability.

## 313. Eastern Asia (3) S Kimura

Regional synthesis of the physical environment, resource utilization, population and the cultural features which characterize the economic, social and political geography of China, Japan and Korea.

## 314. Southern Asia (3) F Debysingh

Characteristics and problems of population, underdeveloped subsistence economies, incipient industrialization and cultural impact on the environment in Southern Asia, especially India, Pakistan, Bangladesh, Sri Lanka and the Himalayan states.
316. Western Europe (3) F,S Wilson

Regional study synthesizing the human and physical patterns of the European environment. Current cultural conditions and environmental problems are studied. Major subregions include Scandinavia, Western and Central Europe and the Mediterranean World

## 318. The Soviet Union (3) F,S Ericksen

Systematic and regional study of the physical, economic and cultural geography of the Soviet Union.

## 321. Middle America (3) $F$ Debysingh

Survey of Mexico, Central America and the Caribbean Islands as human habitats, emphasizing the environmental and historical-cultural factors which shaped their present day characteristics.

## 22. South America (3) S Faculty

Topical and regional examination of the various physical and cultural patterns of South America as they relate to the social, economic and political problems of the area.

## 326. Pacific Ocean Area (3) S Scantling

Regional synthesis of the physical and cultural geography of Australia, New Zealand and the island groups of Oceania.

## 356. Man and the Coastal Environment (3) F,S Splansky, Steiner

Coastal zones as unique geographic environments. Man's past and present mpact upon the coastal environment. Special emphasis is given to coastal settlement patterns, open space needs, planning problems and controls. Not applicable toward a geography major. (Lecture 1 hour, field study 4 hours.)

## Systematic

These courses deal with diverse subjecis and are organized to provide the basic framework for the physical and cultural sub-fields of the discipline

## *440. Land and Water Environments (3) F,S Steiner

Prerequisites: Geography 140 and 380 or consent of instructor. Landforms and related soil and water resources as physical components of the human environment. (Lecture-problems and field experience.)

## *442. Biogeography (3) F,S Wheeler

Prerequisite: Geography 140. A course in biology is strongly recommended. Methods of mapping plant and animal distributions, spatial interaction with environmental limiting factors and man's role in temporal and spatial variation of ecosystems. (Lecture-problems and field experience.)

## *444. Climatology (3) F,S Kimura

Prerequisite: Geography 140 or Geology 463. Descriptive and explanatory analysis of the elements and controls of climate. Climates of the world with emphasis on California and North Am erica. (Lecture, problems 3 hours.)
*452. Economic Geography (3) F Anderson, Peters
Prerequisite: Geography 152 or consent of instructor Location theory and its application to the study of the distribution of various economic activities international and inter-regional changes in the spatial structure of economic activities and the role of these changes in international and regional development (Lecture, problems.)
455. Man as an Agent of Environmental Change (3) F,S Splansky, Wheeler Spatial variations in environmental change as effected by man. A systematic and regional analysis at both macro and micro levels. Not open to students with credit in Geography 355. (Lecture 3 hours.)

## 460. Population Geography (3) F,S Peters

introduction to the geographic study of population. Includes growth and distribution of world population; results of changing births, deaths, and migration variations in population composition; related problems such as food supplies and environmental deterioration.
466. Urban Geography:Principles (3) F,S Karabenick, Outwater

Examination of cities; their location, shape, structure and function. Selected world population clusters, theoretical and practical application of urban planning world the evolution of cities are studied. (Lecture-problems.)
467. Urban Geography: Metropolitan Problems (3) S Outwater

Prerequisite: Geography 466 or consent of instructor. Geographic components of metropolitan problems and their solutions. Problems related to transportation systems, housing, evolution of ghettos, urban perception and behavioral pattern will be discussed in terms of theoretical and practically applied urban planning solutions. (Lecture, problems 3 hours.)
*470. Political Geography (3) F,S Wilson
Prer related systems. Varied approaches are arth's politically organized regions and functional analysis of explored, such as power analysis, genetic analic concepts used in analyzing the viability of states and nations. (Lecture, problems.)

## Methods and Techniques

These courses develop skills in graphic and statistical communnication and field alysis which are used within the various sub-fields of the discipline. Either of the irst two courses (Geography 380 and 400) is especially recommended for satisfying General Education requirements.
380. Map Reading and Interpretation (3) F,S Debysingh, Tyner

Interpretation and understanding of maps as graphic communication with particular emphasis on symbolization, scale and projection. Information retrieval skills applicable to general, thematics and topographic maps are developed. (Lecture, problems 3 hours.)
*400. Introduction to Geographic Analysis (3) F Peter
Prerequisites: Six units of geography. Application of quantitative methods to the nalysis of spatial distributions, associations and interactions. Not open to 390
*482. Elements of Cartography (3) F,S Tyner
Prerequisites: Geography 380, consent of instructor. Theory and techniques in Prerequin and construction of thematic maps, including experience in the use of the design and construct (Lecture-discussion 2 hours, laboratory 3 hours.)

## 483. Aerial Photo Interpretation and Remote Sensing (3) $F$ Tyner

Prerequisite: Consent of instructor. Introduction to the interpretation of air photos and other remotely sensed imagery. Includes determination of scale and height, acquisition of imagery and the electromagnetic spectrum. Special emphasis is placed on the recognition of physical and cultural features. (Lecture 2 hours, laboratory activities 2 hours.)
487. Field Methods in Rural Landscape Analysis (3) S Scantling, Splansky Prerequisite: Geography 380 or consent of instructor. Introduction to field techniques and methods by which field studies of rural areas are made. Emphasis on physical geography, agricultural geography and man-land relationships. Not open to students with credit in Geography 387. (Lecture-discussion 2 hours, supervised field work 2 hours.)
*488. Field Methods in Urban Analysis (3) F Karabenick, Outwater
Prerequisite: Geography 380 or consent of instructor. Introduction to urban field echniques, including formulation of field plans, recording direct observation, field mping sampling techniques, interviewing and compilation of data. Not open to
 field work 2 hours.)
*490. Quantitative Methods (3) F Peters
Prerequisite: Geography 400 or consent of instructor. Application of multivariate statistical methods in geographic analysis and the use of probability and other models in geographic research. Emphasis will be on problem solving and computer application.

## General

*494. Special Topics (1-3) F,S Faculty
Prerequisite: Consent of instructor. Application of geographical concepts and methodology to selected contemporary problems. Themes will be announced in the Schedule of Classes. May be repeated for a maximum of six units with consent of department chairperson. May not be credited toward the major in geography without written department consent in advance of enrollment.
*497. Directed Studies (1-3) F,S Faculty
Prerequisite: Consent of instructor. Individually directed studies of special problems in geography. May be repeated for a maximum of six units with consent of department chairperson. May not be credited toward the major in geography without written department consent in advance of enrollment.

## Graduate Division

582. Advanced Cartography (3) S Tyner

Prerequisite: Geography 482. Advanced theory and techniques in cartographic communication including map perception, terrain representation, history of cartography, computer mapping and color. (Lecture-discussion 2 hours, laboratory 3 hours.)
596. Literature and Methods in Geography (3) F Ericksen

Prerequisite: Consent of instructor. Proseminar in the methods, theory and techniques of geographic investigation with emphasis upon classical and contem porary literature. Not open to students with credit in Geography 496
600. Seminar in Regional Geography (3) S Ericksen, Faculty

Prerequisite: Consent of instructor. Regional methods of study common to geographic research, and their utilization in developing regional concepts.

## 40. Seminar in Physical Geography (3) S Kimura, Steiner, Wheeler

Prerequisite: Consent of instructor. Advanced study of areal variations in the physical landscape. Research methods and resources. Individual investigation of a selected local area. May be repeated once with consent of department adviser.
650. Seminar in Cultural Geography (3) F Scantling, Splansky, Wilson Prerequisite: Consent of instructor. Systematic investigation of human Prence in its varied environmental and regional settings. May be repeated once with consent of departm ent adviser.
652. Seminar in Economic Geography (3) F Anderson, Peters

Prerequisite: Consent of instructor. Fundamental resources and basic industries of the modern world. May be repeated once with consent of departm ental adviser.

## 66. Seminar in Urban Geography (3) S Karabenick, Outwater, Splansk

Prerequisite: Consent of instructor. Geographic concepts and techniques of research applied to specific urban areas. May be repeated once with consent of departmental adviser.
697. Directed Research (1-3) F,S Facuity

Prerequisite: Consent of instructor. Research in geography supervised on an Rividual basis. Required of non-thesis students who have been advanced to candidacy for the master's degree in geography.
698. Thesis (1-6) F,S Faculty

Prerequisite: Consent of instructor. Planning, preparation and completion of thesis for the master's degree.


## Geological Sciences



## Department Chair: Dr. Paul J. Fritts

Professors: Chan, Conrey, Dennis, Ehrreich, Fritts, Grannell, Green, Lumsden, Walker, Winchell

## Undergraduate Advisers:

Geological Sciences: Dr. Paul J. Fritts
Earth Science: Dr. Roswitha Grannell.
Graduate Adviser: Dr. Bert L. Conrey
Joint Committee: Conrey, Green.
Geology is the study of the solid earth. Within the broad field of geology undergraduate students may elect to follow one of several alternative routes: general geology, marine geology, mineralogy-petrology, paleontology-stratigraphy, structural geology.

All earth science and geology majors must obtain a departm ental adviser
The Geological Sciences Department participates in the interdisciplinary Center for Ocean Science Studies. See the Biology section of this Bulletin for additional information.

A dual degree, Geology-Civil Engineering, or Earth Science-Civil Engineering, is A dual degree, Gurther information inquire at the Department of Geological Sciences or at the Department of Civil Engineering.

## Geological Sciences Professional Advisory Council

The Geological Sciences Advisory and Development Council consists of thers ind executives from ind government.保 The function of the council is toculty informed of recent developments in the industry, and to keep the faculy application and practice of the council also advises the curriculum is appropriate in light of modern practice. The counc are majoring in department on employment opportunities for students
geology. The council membership consists of the Corporate Exploration, Atlantic
Ms. E. Ann Butler, Sen
Richfield Company
Mr. James T. Carter, Executive Partner, Dames and Moore
Mr. Downey Valve Co.. Inc.
Mr. William H. Cree, Jr., Attorney at Law
Mr. William H. Cree, Jr., Attorney at Engineering Corp.
Dr. Gary Green, Marine Geologist, U.S. Geological Survey
Mr. Maurice S. Hubbell, Lomita Gasoline Co.
Mr. William J. Hunter, Senior Engineer, Thums Long Beach Co

Mr. George B. Pichel, Chief Geologist, Union Oil Co. of California
Dr. James E. Slosson, President, State Board of Registration for Geologists and Geophysicists
Mr. Jay L. Smith, Consulting Geologist
Mr. Melvin H. Stansbury, M.H. Stansbury, Inc.
Mr . James H. Thompson, Exploration Services

## Major in Geology for the Bachelor of Science Degree (code 3-7664)

Lower Division: Geology 102, 104; Mathematics 117, 122, 123; Chemistry 111A-B; either Biology 216 or a combination of Biology 200 and one of the following: Geology 443, 490g, Biology 437. Additional required courses for the several emphases are listed below.
Upper Division: Geology 320A-B, 321, 322, 330, 341, 342, 372, 423, 441, 448, 449, 472. Additional required courses for the several emphases are listed below.

## (1) General Geology

Lower Division: Physics 100A-B.
Upper Division: Geology 450 and 10 units of upper division courses approved by adviser or two units of Geology 495 and nine units of upper division courses approved by adviser.

## (2) Marine Geology

Lower Division: Mathematics 224; Physics 151, 152.
Upper Division: Geology 460, 461, 461L or Chemistry 371A-B; Geology 463, 464, 465, 466.

## (3) Mineralogy-petrology

Lower Division: Mathematics 224; Chemistry 251, 251L; Physics 151, 152.
Upper Division: Geology 450, 491; Chemistry 377, 451.

## (4) Paleontology-stratigraphy

Lower Division: Physics 100A-B
Upper Division: Geology 443, 450; three courses selected from Geology 461, 464, 465; Biology 353, 437.

## (5) Structural Geology

Lower Division: Mathematics 224; Physics 151, 152.
Upper Division: Geology 450, 460, 490j and four additional units approved by adviser.

## Earth Science

The earth science program prepares students to understand the natural environment, earth resources, land use, pollution and other areas of critical importance to present and future world problems. The following career-oriented interdisciplinary emphases are offered: (1) Engineering Geology, (2) Exploration Geophysics, (3) Earth Materials, and (4) Oceanography

## Major in Earth Science for the Bachelor of Science Degree (code 3-7663)

Lower Division: Geology 102, 104; Chemistry 111A, 111B; Mathematics 117, 122, 123, 224; Physics 151, 152.
Upper Division: Geology 320A-B, 322.
Additional courses required for the several emphases are listed below. The specified units required beyond those in the listed courses must be approved in advance by the departmental adviser in the selected emphasis.

## (1) Engineering Geology

Lower Division: C.E. 205, 206
Upper Division: Geology 321, 330, 341, 342, 372, 423, 441, 448, 449, 450; C.E. 345, 346, 445; M.E. 373, 374; nine additional units in mathematics, engineering or science approved in advance by the appropriate departmental adviser.

## (2) Exploration Geophysics

Lower Division: Mathematics 270 or 3 units of Geology 496; Physics 153
Upper Division: Geology 321, 330, 341, 342, 372, 441, 448, 460, 490C, 496 (1 unit or 4 units if no Mathematics 270); Mathematics 370A, 370B, 380A; Physics 310, 340A 340B; nine additional units approved in advance by the appropriate departmental adviser.

## (3) Earth Materials

Lower Division: Chem istry 251, 251L; Physics 153.
Upper Division: Geology 321, 342, 423, 461, 461L, 490C, 491; Chemistry 371A, 371B, 431, 451, 385 or Chemical Engineering 305; Mathematics 346; M.E. 322, 423; nine additional units in geology, mathematics, physics, or chemistry approved in advance by the appropriate departmental adviser.

## (4) Oceanography

ower Division: Geology 160, 191; Mathematics 170; Biology 200; Electrical Engineering 265.
Upper Division: Geology 341, 460, 461, 463, 464, 465, 466, 496 (3); Biology 416; 20 additional units in engineering and science approved in advance by the appropriate departmental adviser.

## Minor in Geology (code 0-7664

Twenty units which must include:
Lower Division: Geology 102 or 103, 104, 140.
Upper Division: Nine units of geology.

## Master of Science Degree in Geology

The Department of Geological Sciences is one of three departments in The California State University and Colleges in Southern California which offer courses eading to a master of science degree in geology. The three universities in the joint program are California State University, Long Beach, California State University, Northridge and California State University, Los Angeles.
The objectives of the master of science program in geology are (1) to offer a degree program which will train individuals with the competence required by the geological profession for employment in industry and government agencies, (2) to ability an Ph.D. program at other universities, (3) to provide an quirch requirements for students M.S. program with basic conning to teach geology at the community college level.

## Master of Science Degree with a Major in Geology (code 6-7664)

## Admission to the Program

The basic requirement of admission to this graduate program is possession of a B.S. degree in geology or its equivalent in accordance with policies established by the joint committee. The student normally will be expected to have completed course work in three of the following areas: and metamorphic petrology and optical geochemistry, stratigraphy crystallography
Students who do not have appropriate upper division course work in three of the areas listed above may be admitted to the program but will be expected to remove this deficiency or present alternatives acceptable to the joint committee. All
students are required to take the verbal and quantitative portions of the Graduate Record Examination and attain a satisfactory score before or during their first semester or quarter of attendance.

## Requirements for the Degree

The candidate's program will be designed with the assistance of a faculty adviser, who in turn will submit it for approval to a graduate advisory committee consisting of at least one faculty member from another campus in the joint program, and at least two other faculty members. The chairman of the advisory committee must be a faculty member from the home campus. All candidates mus take either Geology 698, Thesis (six semester units), or a combination of a comprehensive examination and Geology 697, Directed Research (three units) Geology 697 and the comprehensive examination or Geology 698 must be directed by a faculty member from the home campus.

## Course Requirements

Candidates must take a minimum of 15 semester units ( $22^{1} / 2$ quarter units) of 500 or 600 level courses, including Thesis, and an additional 15 semester units ( $221 / 2$ quarter units) of 400,500 and 600 level courses chosen with the approval of the student's adviser and the graduate advisory committee. At least six semester units must be taken at another university in the joint program; of these, at least three semester units must be in a 500 or 600 level course.

The program can be designed from the following list of courses: 500 and 600 leve courses, minimum of 15 semester units ( $22^{1 / 2}$ quarter units)

1. Advanced Micropaleontology

CSULB: Geology 515, 3 sem ester units
CSUN: Geology 515, 3 semester units
CSULA: Geology 515, 4.5 quarter units
2. Advanced Stratigraphic Analysis

CSULB: Geology 520, 3 sem ester units CSUN: Geology 520, 3 semester units CSULA: Geology 520, 4.5 quarter units
3. Advanced Paleontology

CSULB: Geology 510, 3 semester units CSUN: Geology 510, 3 sem ester units
CSULA: Geology 510, 4.5 quarter units
4. Seminar in Structural Geology and

Tectonics
CSULB: Geology 530, 3 sem ester units CSUN: Geology 530, 3 sem ester units CSULA: Geology 530, 4.5 quarter units
5. Advanced Igneous Petrology

CSULB: Geology 540, 3 sem ester units CSUN: Geology 540, 3 sem ester units CSULA: Geology 540, 4.5 quarter units
6. Advanced Metamorphic Petrology

CSULB: Geology 541, 3 sem ester units
CSUN: Geology 541, 3 semester units
CSULA: Geology 541, 4.5 quarter units
7. Advanced Crystal Chemistry

CSULB: Geology 550, 3 sem ester
CSUN: Geology 550, 3 sem ester units CSULA: Geology 550, 4.5 quarter units
8. Advanced Geochemistry

CSULB: Geology 555 , 3 semester units CSUN: Geology 555, 3 sem ester units CSULA: Geology 555, 4.5 quarter units
9. Chemical Oceanography

CSULB: Geology 562, 3 sem ester units CSUN: Geology 562, 3 sem ester units CSULA: Geology 562, 4.5 quarter units
10. Advanced Marine Geology

CSULB: Geology 564, 3 semester units CSUN: Geology 564, 3 sem ester units CSULA: Geology 564, 4.5 quarter units
11. Special Topics in Geology CSULB: Geology 570, 3 semester units CSUN: Geology 570, 3 sem ester units CSULA: Geology 570, 4.5 quarter units
12. Seminar in Engineering Geology CSULB: Geology 581, 3 semester units CSUN: Geology 581, 3 semester units CSULA: Geology 581, 4.5 quarter units
13. Directed Research CSULB: Geology 697, 1-3 semester units Independent Study CSUN: Geology 599, 1-3 sem ester units Directed Graduate Studies CSULA: Geology 598, 1-4.5 quarter units 14. Thesis CSULB: Geology 698, 6 sem ester units

Electives in geology, maximum of 15 semester units ( $221 / 2$ quarter units)

## California State University, Long Beach

Geology 443, Micropaleontology, 3semester units (4.5 quarter units) Geology 460, Geophysics, 3 sem ester units (4.5 quarter units)

Geology 464, Geological Oceanography, 3 semester units ( 4.5 quarter units)
Geology 465, Physical and Chemical Oceanography, 3 semester units (4.5 quarter units)
Geology 466, Oceanography Laboratory and Ocean Studies, 1 semester unit (1.5 quarter units)
Geology 471, Petroleum Geology, 2 semester units (3quarter units)
Geology 490, Current Topics in Geological Sciences, 3 semester units ( 4.5 quarter
units)
Geology 491, X-ray Crystallography, 3 semester units (4.5 quarter units)

## California State University, Northridge

Geology 403, Micropaleontology, 3semester units (4.5 quarter units) Geology 422, Oceanography, 4 sem ester units ( 6 quarter units)
Geology 424, Marine Geology 3 sem ester units (4.5 quarter units)
Geoly 425 Esonomic Geology, 3 semester units ( 4.5 quarter units)
Geology 426, Seminar in Oceanography, 2 sem ester units (3 quarter units)
Geology 426, Seminar Geology 451, Engineering Geology, 3semester units (4.5 quarter units)
California State University, Los Angeles
Geology 411, Economic Geology of Non-metallic Deposits, 4 quarter units $\left(2^{2 / 3}\right.$ semester units) ( $2^{2 / 3}$ semester
Geology 412 , Economic ( ${ }^{2 / 3}$ sem ester units)
Geology 470, X-ray Crystallography, 4 quarter units ( $2^{2 / 3}$ sem ester units)
Geology 471, Analytical Geochemistry, ( $2^{2 / 3}$ semester units)
Geology 480, Geophysics, 4 quarter units ( $2^{2 / 3}$ semits ( $2^{2 / 3}$ sem ester units)
Geology 481, Engineering Geology, 4 quarter
Geology 482, Ground Water Hydrology, 4 quarter units ( $2^{2 / 3}$ semes
Geology 483, Photogeology, 4 quarter units ( $2^{2 / 3}$ semester units)
With approval of the graduate advisory committee, appropriate 400,500 or 600 level courses from related areas in science, mathematics or engineering may be substituted in the above list for up to nine semester units ( 12 quarter units).

都 acceptable upon petition to the joint committee: stratigraphy, optical acceptable upon

## Concurrent and/or Summer Enrollment in Another College

Students who wish to take course work in a community or another college to students undergraduates in the School of meet curricular requirements while for prior approval to Natural Sciences must petition the a for either concurrent enrollment or summer enroll in specific courses. This policyst also be complied with. See "Concurrent enrollment. University ent

## Lower Division

100. Introductory Geology (3) F,S Faculty

Elementary study of the earth, particularly the structure, composition, origin istribution and modification of earth materials. Laboratory study of earth materials, Offered in a personalized instruction (Keller Plan) format. Not open to students with credit in Geology 102 or 103. (Lecture 2 hours, laboratory 3 hours.)

## 102. General Geology (3) F, S Faculty

Elementary study of the earth, particularly the structure, composition distribution and modification of earth materials. (Lecture, demonstration.) Not open to students with credit in Geology 100 or 103.

## 104. Geology Laboratory (1) F,S Faculty

Prerequisite: Concurrent or prior enrollment in Geology 102 or 103. Laboratory study of earth materials. (Laboratory 3 hours.)

## 105. Geology Field Laboratory (1) F,S Faculty

Prerequisite: Concurrent or prior enrollment in Geology 102 or 103. Field trips to areas of geologic significance and field study of earth materials. May be repeated for credit with consent of instructor to a maximum of 3 units. (Field trips, 6 days per unit.)
140. Historical Geology (3) F Fritts, Lumsden

Prerequisite: Geology 104. History of the earth and evolution of plants and animals. Not open to students with credit in Geology 101. (Lecture 2 hours, laboratory 3 hours, field trips.)
160. Introduction to Oceanography (3) F,S Faculty

Origin and extent of the oceans; nature of the ocean floor, cause and effect of currents, tides and waves; and life in the sea. (Lecture, discussion.)

## 163. Science of the Atmosphere and Weather (3) F,S Chan, Walker

Introduction to the physical and chemical processes of the atmosphere, science of weather and weather disturbances. Emphasis on understanding the atmospheric environment rather than technical calculations.
190. Environmental Geology (3) F,S Grannell

Interrelationships of man and landslides, floods, erosion, subsidence, volcanism, earthquakes and seismic sea waves. Case histories will be discussed
191. Air and Water Pollution (3) F,S Chan, Walker

Survey course dealing with the causes and nature of pollution of the air, fresh water lakes and streams and the ocean. Effects of pollution on man's environment.

## Upper Division

## 305. Resources and Man (4) F Dennis

Occurrence and setting of non-renewable resources: ore deposits, fuels and ater Extraction and conservation. Demand for resources: economic and population growth, technology, pollution control, recycling, imports and exports. Taxation and government regulation of mineral industries. (Same course as Economics 305.)

## 306. Field Geology Laboratory (1-3) F,S Faculty

Prerequisites: Five units in geology including one course in physical geology. Study of earth materials and processes at selected field localities. Elementary study of common rocks and minerals will accompany an introduction to glaciation, river erosion, desert activity, oceanic processes and structural geology. Minimum of six days in the field for each unit of credit.

## 310. Life of the Past (3) F,S lumsden

Prerequisite: High school biology; not open to majors in geology. A history of life as obtained through study of the fossil record and the relating of evolution, stratigraphy and paleoecology to this record.

320A-B. Introductory Mineralogy and Petrology (2,2) F Ehrreich, Winchell
Prerequisite: Chemistry 111A or consent of instructor. Corequisite: Geology 322. Classification, origin and association of common minerals and rocks. Macroscopic study of minerals and rocks by physicochemical methods in the laboratory. Ordinarily, the student is expected to register for parts A and B concurrently; however, part B (petrology) may be taken separately with consent of the instructor provided the student already has equivalent credit in part A from an acceptable course in mineralogy. Part A comprises the first half of the course and part B begins at mid-term. (Lecture 2 hours, laboratory 6 hours, field trips.)
321. Optical Crystallography (4) S Ehrreich

Prerequisites: Geology 320A-B, 322 and Mathematics 122, or upper division standing in chemistry or physics. Optical properties of crystals. Laboratory study of crystals in immersion liquids and thin sections with polarizing microscope. Not pen to students with credit in Geology 421. (Lecture 2 hours, laboratory 6 hours.)

## 322. Crystallography and Mineralogy (3) F Winchell

Prerequisites: Chemistry 111A and trigonometry; corequisite: Geology 320. Introduction to morphological and structural crystallography, and their application to physical and chemical properties of crystal chemistry and paragenesis of minerals (Lecture 2 hours, laboratory 3 hours, field trips.)
330. Structural Geology (3) $S$ Dennis

Prerequisites: Geology 320A-B, 372, Physics 100A or 151, Mathematics 117 or consent of instructor. Deformation of earth's crust, fracturing, folding and flow of rocks; graphic solutions of structural problems, structure from geological maps and other geological records. (Lecture 2 hours, laboratory 3 hours, field trips.)
331. Geomorphology (3) F Conrey

Prerequisite: Geology 102 or 104 or 370 . Nature, evolution and classification of land forms; physiographic provinces of U.S.A. (Lecture 2 hours, discussion session 2 hours, field trips.)
341. Principles of Paleontology (4) F Lumsden 200 or 216. Morphologic Prerequisites: Geology 104 and either Biology 200 or systematic, and ecologic aspects laboratory 6 hours, field trips.)
342. Sedimentary Rocks (3) S Conrey

Prerequisites: Geology 104 or 370 , Geology 320A-B. Methods of analysis escription and classification of, and processes involved in, the formation of sedimentary rocks. (Lecture 1 hour, laboratory 3 hours, field trips 5-6 days.)
370. Engineering Geology (2) F,S Fritts, Green

Prerequisites: Mechanical Engineering 172, Civil Engineering 225. Earth Prerequisites: Mechanical Engience the design, construction and operation o processes and materials whiction materials. Not open for credit to geology majors engineering works; construct
(Lecture 2 hours, field trips.)
372. Graphical Methods in Geology (2) F Fritts

Prerequisites: Geology 104, Mathematics 101 or high school trigonometry atroduction to graphical solutions of problems in structural geology and stratigraphy. (Lecture 1 hour, laboratory 3 hours, field trips.)
423. Igneous and Metamorphic Petrology (4) F Ehrreich
23. Prerequisites: Chemistry coordinated macroscopic and microscopic study of rocks. (Lecture 2 hours, coordinated macroscopic and
441. Principles of Stratigraphy (3) F Fritts, Walker

Prerequisites: Geology 321,330, 341,342. Occurrence, lithology, fossil content, Prerequion and mutual relations of rocks and their classification. (Lecture 2 hours, laboratory 3 hours, field trips.)

## 443. Micropaleontology (3) S Fritts

Prequisites: Geology 104, 341; or upper division standing in biology with onsent of instructor. Morphology, taxonomy and ecology of microfaunas; biostratigraphy. (Lecture 2 hours, laboratory 3 hours, field trips.)

## 448. Geological Surveying (2) $F$ Fritts

Prerequisites: Geology 330, 372 and 441 (may be taken concurrently). Principles of geological surveying with emphasis on the plane table; application of surveying techniques to field mapping of geological structures; determination of true thickness of strata. (Lecture 1 hour, laboratory 3 hours, field trips.)

## 449. Field Geology (3) S Fáculty

Prerequisites: Geology 423, 441, 448. Geologic mapping; interpretation of geologic maps and aerial photographs; preparation of geologic reports and illustrations. Fifteen days of fieldwork during registration week, spring vacation and/or weekends of the spring semester. Students must contact the department by November 1 and register by Computer Assisted Registration. (Laboratory 3 hours, field trips 8-5 Saturdays.)

## 450. Advanced Field Geology (6) SS Faculty

Prerequisites: Geology 330, 449. Six weeks of geological mapping at a selected area. Preparation of a geological report of the field problem which is to be turned in to the instructor not later than two weeks following the completion of the field work. (Lectures as needed, field 6 days per week, $8-5$.)
460. Introduction to Geophysics (3) F Grannell

Prercquisites: Physics 100B, Mathematics 122. Introduction to geophysics, principles and processes; methods of investigation. (Lecture 2 hours, laboratory 3 hours, field trips.)

## 461L. Laboratory in Geochemistry (1) S Walker

463. General Meteorology (3) S Chan

Prerequisite: Physics 100 B or Geology 163 or Geography 444 or consent of instructor. Composition, structure, and circulation of the atmosphere, including elementary theory of storms and other weather disturbances, meteorologica instruments and observations. (Lecture 3hours, field trips.)
464. Geological Oceanography (3) S Conrey

Prerequisites: Geology 102 or 103 or 370; Geology 160 or 465 or Mechanical Engineering 434; Chemistry 111B and Physics 100B. Sediments, topography and structure of the ocean floor; sedimentary processes as they affect the shore continental shelf and ocean basins. (Lecture 2 hours, laboratory 3 hours, 2 day field trip.)

## 465. Physical and Chemical Oceanography (3) F,S Chan

Prerequisites: Chemistry 111B, Physics 100B. Physical and chemica oceanography; the carbonate cycle; minor elements and micronutrient elements in sea water; water masses of the oceans; the physical concepts and interpretative theories related to ocean circulation. Not open to students with credit in Geology 462. (Lecture 3 hours.)
466. Oceanography Laboratory and Ocean Studies (1) F,S Chan

Prerequisite: Concurrent or prior enrollment in Geology 465. Instruments and techniques in physical and chemical oceanography; sea trips to areas of oceanographic significance, water quality analysis and interpretation of oceanographic data. Not open to students with credit in Geology 462. (Laboratory 3 hours, sea trips.)

## 471. Petroleum Geology (2) $S$ Fritts, Walker

Prerequisite: Geology 330. Application of geology to the exploration and production of petroleum; includes use of both surface and sub-surface geologic methods. (Lecture 1 hour, laboratory 3 hours, field trips.)
472. Regional Geology of North America (3) $S$ Fritts, Lumsden

Prerequisite: Geology 441. Regional stratigraphy, structure and geologic history f major provinces of North America, including theoretical concepts of the origin of these features. (Lecture 2 hours, discussion session 2 hours, field trips.)
490. Current Topics in Geological Sciences (1-3) F, S Faculty ciences selected for intensive development. Topics to be selected from such areas as (a) Geochronology, (b) Ground water geology, (c) Microscopic sedimentary petrography, ( $f$ ) Aerial photo interpretation, (g) Paleoecology, (h) Statistical methods in geology, (i) Planetary geology, (j) Tectonics, (k) Economic mineral ( $m$ Volcanology, ( $n$ ) Carbonate petrology, (u) Urban geology. May be repeated for a maximum of 6 units. (Field trips may be required.)

## 491. X-ray Crystallography (3) $S$ Winchell

Prerequisite: Geology 322 or equivalent or consent of instructor. Theory of x-ray iffraction and its application to the analysis and identification of crystalline phases. Not open to students with credit in Geology 490d. (Lecture 2 hours, laboratory 3 hours.)
495. Current Developments in Geological Research (1) F,S Faculty

Current ideas in geological research presented by faculty and guest lecturers. Students will be graded on a credit/no credit basis on such criteria as participation in the discussions. May be repeated up to two units.
496. Investigations in Geology and Other Earth Sciences (1-4) F,S Faculty

Prerequis Senior erplath science in the area of the topics chosen and approval of the topic chosen by the geology faculty. Supervised research in geology or the other earth sciences. (Field trips may be required.)

## Graduate Division

510. Advanced Paleontology (3) F Lumsden

Prerequisites: Upper division courses in invertebrate paleontology, stratigraphy and micropaleontology. Seminars in various topics in invertebrate paleontology, such as bio-stratigraphy, paleoecology, functional morphology, etc. May include field and laboratory investigations. May be repeated for credit as topic changes
515. Advanced Micropaleontology (3) Fritts
515. Advan of instructor Arenology, taxonomy, ecology and paleoecology of microfossils; biostratigraphy and age determination of sedimentary rocks. (Lecture 1 hour, laboratory 6 hours.)
520. Advanced Stratigraphic Analysis (3) Walke

Prerequisites: Introductory course in stratigraphy, sedimentary petrology and paleontology or consent of instructor. Principles and techniques of stratigraphic analysis with emphasis on interpreting the stratigraphic record to aid in and paleogeography. Course will revolve around a field problem and include application of methods from physical stratigraphy, biostratigraphy and sedimentary petrology to solution of the problem (Lecture 1 hour, laboratory 3 hours, field work 8 days.)
545. Rock Mechanics in Engineering Practice (3) $F$ Yen

Prerequisites: Civil Engineering 345, 346 Principles of rock mechanics with prosis on engineering practices for problems of slopes, foundations and tunnels. Same course as Civil Engineering 545. (Lecture, problems 3 hours.)

## 530. Seminar in Structural Geology and Tectonics (3) Dennis

Prerequisite: Upper division structural geology. Critical review of selected topics concerning the analysis, interpretation and origin of geologic structures, the mechanics of rock deformation and of large scale crustal deformation.

## 540. Advanced Igneous Petrology (3) S Ehrreich

Prerequisites: Geology 321, .423. Advanced study of the occurrence and petrogenesis of igneous rocks; laboratory will include microscopic study of selected rock suites and application of instrumental techniques to igneous rocks. (Seminar 2 hours, laboratory 3 hours.)

## 541. Advanced Metamorphic Petrology (3) Ehrreich

Prerequisites: Geology 321, 423. Advanced study of occurrence, origin and interpretation of metamorphic rocks; laboratory will include microscopic study of rock suites. (Seminar 2 hours, laboratory 3 hours.)

## 550. Advanced Crystal Chemistry (3) Winchell

Prerequisites: Geology 320A, 322. Seminars and laboratory in crystal chemistry emphasizing structural and chemical mineralogy, determinative methods, mineral synthesis and computer applications. May be repeated for credit with consent of instructor. (Seminar 2 hours, laboratory 3 hours.)

## 555. Advanced Geochemistry (3) Walker

Prerequisite: Consent of instructor. Methods of radiometric age determination including dating of igneous and metamorphic rocks and sediments; use of lead and strontium as natural tracers; light stable isotopes, oxygen, carbon and sulfur as petrogenetic indicators in igneous rocks and ore-forming processes. (Seminar 2 hours, laboratory 3 hours.)
562. Chemical Oceanography (3) Chan

Prerequisites: Physical and chemical oceanography and mathematics through the first course in calculus. Advanced studies in the lithosphere, atmosphere and biosphere. Critical review of literature and reports in chemical oceanography which may include chemical equilibria, chemical thermodynamics and inorganic and organic constituents of the ocean, emphasis on recent studies and new concepts.

## 564. Advanced Marine Geology (3) Conrey

Prerequisites: Upper division courses in marine geology, oceanography and consent of instructor. Studies in marine geomorphology, tectonics, sedimentation, stratigraphy, coastal development and allied topics.
570. Special Topics in Geology (1-3) Grannell

Prerequisite: Consent of instructor. Investigation of selected topics in geology May be repeated for credit with consent of instructor as topic changes. Seminars with laboratories as appropriate

## 581. Seminar in Engineering Geology (3) Fritts

Prerequisite: Upper division course in engineering geology or consent of instructor. Advanced study relating geologic factors to engineering projects, with emphasis on slope stability, subsidence, engineering seismology and construction problems related to engineering geology
697. Directed Research (1-3) F Fritts

Prerequisite: Consent of instructor. Research on a specific subject in geology. Topic for study to be approved and directed by a staff member in geological sciences

## 698. Thesis (1-6) F Fritts

Prerequisite: Consent of Joint Graduate Advisory Committee. Either Iaboratory or field investigations, or both, for a total of six semester units to culminate in an approved thesis.

## German, Russian and Classics

Department Chair: Dr. Johanna W. Roden
Emeritus: Graham K. Spring.
Professors: Kendall, Malone, McKay, Pelters, Roden
Associate Professors: Bartenbach, Ctvrtlik
Credential Adviser: Dr. Harvey Kendall.
Undergraduate Adviser: Dr. Johanna W. Roden
Graduate Adviser: Dr. Johanna W. Roden

## German

The program in German is designed to meet the needs of several types of those who seek a liberal arts education with an emphasis on students, the German language and elementary, secondary or the college level; those whes professional careers or in purstan literature and culture.

The Department of German, Russian and Classics offers graduate study leading to the master of arts degree in German. The candidate is urged to observe the to general requiral courses, German is the requirements. in and written work.

## Major in German for the Bachelor of Arts Degree (code 2-6813)

Lower Division. One year of intermediate German. Students who have completed ufficient high school German may take upper division courses as soon as lower division requirements have been met. Majors who are native speakers of German may not enroll for credit in language courses: 101A-B, 201A-B, 301A-B, 401A-B however, exceptions may be granted for upper division language courses with the department's consent.
Upper Division: A minimum of 30 units of upper division courses in German which must include German 301A-B, 315, 316, 401A-B.
epartmental Requirement: One year of a second foreign language is required of all majors.
Recommendations: Courses should be selected in consultation with the majo adviser who will be assigned by the department office. The department
recommends studies in a German-speaking country and will assist in such plans.

## Minor in German (code 0-6813)

A minimum of 20 units which must include: German 301A, 301B, and either 401A or 401 B .

## Master of Arts Degree with a Major in German (code 5-6813)

## Prerequisites

1. A bachelor of arts degree in German, or:
2. A bachelor's degree with a minimum of 24 units of upper division courses in German. These courses must be comparable to those required of a major in German at this University. Deficiencies will be determined by the adviser after consultation with the student and after study of transcript records.

## Advancement to Candidacy

1. Approval of the graduate program by the graduate adviser, departmental committee, and the Dean of Graduate Studies.
2. The candidate may file for advancement to candidacy after she/he has filed a transcript of credits or a change of objective form, and completed the prerequisites.

## Requirements for the Master of Arts

1. Completion of a minimum of 30 units of approved upper division and graduate courses with 24 units in German.
2. A minimum of 15 units in the 500 and 600 series in German.
3. A reading knowledge of French, Italian, Latin, Russian or Spanish. Another language may be substituted only under special circumstances.
4. A comprehensive examination unless department permission is granted to substitute a thesis

## Lower Division

101A-B. Fundamentals of German (4,4) F,S Faculty
101A. For those who are beginning the study of German.
101B. Prerequisite: German 101A or one year of high school German. Continuation of German 101A.

201A-B. Intermediate German (4,4) F,S Faculty
German grammar review with further development of reading, writing and conversational skills

201A. Prerequisites: German 101A-B or two years of high school German
201B. Prerequisite: German 201A

## Upper Division

301A-B. Advanced German $(4,4)$ F, S Faculty
Intensive practice and the consolidation of the basic language skills: reading, comprehension, composition and conversation.
301A. Prerequisite: German 201B or equivalent. Emphasis on reading comprehension, vocabulary building and idiomatic usage.
301B. Prerequisite: German 301A or equivalent. Emphasis on composition, ora reports and discussion.

## 303. German Phonetics (3) F,S Faculty

Prerequisite: Upper division standing in German or consent of instructor. Genera concepts of linguistic science. Linguistics applied to the study and teaching of the German language. Articulatory phonetics as a means to form native German pronunciation habits with emphasis upon the difficulties encountered by speakers of American English.
305. German Conversation (1) S Faculty

Prerequisite: Upper division standing in German. Intensive practice of spoken German with stress on vocabulary building, pronunciation, intonation and oral comprehension. CRNC only. May be repeated once for credit. Not open to students with credit in both 305A and 305B. May be taken only once by students with credit in either 201A or 201B

## 306. Translating German to English (3) F,S Faculty

Prerequisite: Upper division standing in German or consent of instructor. The preparation of translations from German texts of wide ranging subject matter.
315. Survey of German Literature and Culture I (3) F Faculty

Prerequite: Upper division standing in German. German literature from the Middle Ages to the time of Goethe as related to the other arts, to philosophy, and to the social and political institutions of the time.
316. Survey of German Literature and Culture II (3) S Faculty

Prerequisite: Upper division standing in German. German literature from Romanticism to the present as related to the other arts, to philosophy, and to the social and political institutions of the time.
398. Topics in German (3) F,S Faculty

Prerequisite: Upper division standing in German or consent of instructor Explatere and literature. Specific topics to be announced in the Schedule of Classes. May be repeated with different topics to a maximum of six units
*401A-B. Advanced German Syntax and Composition $(3,3)$ F, S Faculty
Prerequisites: German 301A-B. Practice in developing a style and vocabulary suitable for the writing of reports and essays on cultural and literary topics.
*410. German Civilization (3) $S$ Pelters, Roden
Prerequisite: Upper division standing in German. Historical development of mportant German institutions, customs and thought.

## *430. German Poetry (3) F Pelters <br> Prerequisite: Upper division standing in German. German poetry from the

 Baroque to the present.*441. German Novelle (3) F Roden
Prerequisite: Upper division standing in German. The German novelle as a separate literary genre, represented by Goethe, Tieck, Kleist, Keller, Meyer, Storm, Spielhagen Heyse, Kafka, Thomas Mann and others

## *453. German Literature of the Enlightenment and "Sturm und Drang" (3) F

 PeltersPrerequisite: Upper division standing in German. Literary trends of the 18th century with emphasis on Lessing, Wieland, Klopstock, Herder and the authors of the "Sturm und Drang."
*454. Literature of the Classical Period (3) S Pelters, Roden
Prerequisite: Upper division standing in German. Theory and major works by Goethe and Schiller.

## 459A. German Literature from 1890-1945 (3) F Kendall, Malone, Roden

Prerequisite: Upper division standing in German. Major German prose, drama and poetry from naturalism to the end of World War II.
*459B. German Literature from 1945 to Present (3) $S$ Kendall, Malone, Roden Prerequisite: Upper division standing in German. Significant contemporary German writers of prose, drama and poetry
470. German Literature in English (3) $S$ Faculty

Study of significant German writers, German literary movements or a specific literary genre in English translation.
*498. Topics in German (3) F,S Faculty
Prerequisite: Senior standing in German or consent of instructor. Exploration of topics in language, culture and literature. Specific topics to be announced in the Schedule of Classes. May be repeated with different topics to a maximum of six units.
*499. Directed Studies (1-6) F, S Faculty
Prerequisite: Consent of instructor and consent of graduate adviser if taken for graduate credit. Independent study undertaken under the supervision of a faculty member.

## Graduate Division

## 508. Topics in German Language Studies (3) S Faculty

Prerequisite: B.A. in German or equivalent. Intensive studies of etymological, phonological, morphological and syntactical aspects of the German language. May be repeated to a maximum of 12 units with different topics

## 511. Selected Topics in German Culture and Civilization (3) F,1980 and alternate years Faculty

Prerequisite: B.A. in German or equivalent. Intensive studies in special topics of the literary, artistic, intellectual, social, religious, economic and political development of the German speaking countries, as announced in the Schedule of Classes. May be repeated for credit, with different topics, to a maximum of 12 units.

## 590. Approaches to the Study of German Literature (3) F, 1980 and alternate years Faculty

Prerequisite: B.A. in German or equivalent. Evaluation of various methods in interpreting a literary work of art; different levels of interpretation; complexity of structure related to content; literary appreciation; introduction to bibliographical aids.

## 652. Seminar in Medieval German Literature (3) $\mathrm{S}, 1980$ and alternate years Faculty

Prerequisite: B.A. in German or equivalent. Reading and analysis of Middle High German texts with an introduction to Middle High German grammatical forms and structures. Not open to students with credit in German 505.

## 653. Seminar in a Century of German Literature (3) F,S Faculty

Prerequisite: Corresponding 400/500 level century course or consent of graduate adviser. Topics dealing with literary trends, literary genres or individual authors. Intensive studies in one of the following: (a) 16th century, (b) 17th century, (c) 18th century, (d) 19th century, (f) 20 th century. Courses may be taken concurrently. A century may be repeated once if topic studied is different.
692. Practicum (3) F,S Faculty

Prerequisite: B.A. in German or equivalent. Detailed proposal and consent o graduate adviser. Individual research on or participation in language projects, such as observation of and participation in the teaching of German at CSULB, practical experience in professional translating or interpreting, German language research in German speaking countries.

## 697. Directed Research (1-3) F,S Faculty

Prerequisite: Consent of graduate adviser. Required of all candidates for the master of arts in German who do not choose to write a thesis.

## 698. Thesis (1-4) F,S Faculty

Prerequisite: Consent of graduate adviser. Planning, preparation and completion of a thesis. Does not count toward 30 units required for the M.A. degree.

## Russian

The German, Russian and Classics Department is one of four departments in The California State University and Colleges in Southern California which offers courses leading to a major in Russian for the bachelor of arts degree. The fou ampuses in the joint consortium program are California State University, Los Aalifornia State University, Northridge, California State College, San And California State University, Long Beach. California State University Fullerton is preparing to join the program

A minimum of 15 units of upper division courses in the major must be completed at California State University, Long Beach; nine units or more must be taken at one or several campuses participating in the consortium

## Major in Russian for the Bachelor of Arts Degree (code 2-6818)

Lower Division: A minimum of 16 semester units (or the equivalent), of which at least 13 must be Russian language courses. If the requirement is met at this University, the student will take Russian 101A-B and 201A-B.
Upper Division: A minimum of 30 units including: 18 semester units or its equivalen in Russian language courses of which at least nine semester units must be in Area A (Languages and Linguistics, including a three-unit linguistics course and at least nine sem ester units must be in Area B (Literature and Civilization-of which at least six units must be literature). The remaining units are approved electives of which nine units may be courses other than Russian language courses.

Area A courses taught at CSULB

## Area B courses taught at CSULB

312. Advanced Russian I (3) 315. Survey of Russian Literature I (3)
313. Russian Conversation (3)
314. Russian Civilization (3)

Additional courses satisfying Area A and Area B requirements are available on an campuses of the consortium. See an adviser for the latest information on hese courses and the year (term or semester) on projected offering.

## Lower Division

101A-B. Fundamentals of Russian (4,4) F,S Ctvrtlik
Practice in grammar, reading, pronunciation, writing and conversation.
101A. For those who are beginning the study of Russian.
101B. Prerequisite: Russian 101A or one year of high school Russian Continuation of Russian 101A

01A-B. Intermediate Russian $(4,4)$ F, S Ctvrtlik
Readings of representative modern writers with oral and written practice.
201A. Prerequisites: Russian 101A-B or two years of high school Russian or equivalent.
201B. Prerequisite: Russian 201A or three years of high school Russian or equivalent.

205A,B. Russian Conversation (3,3) F,S Faculty
Designed for students who wish to acquire or review fundamental skills of beginning Russian for conversation.

## Upper Division

## 312. Advanced Russian I (3) F Faculty

Required background or experience. Ability to read general material in Russian and to translate non-technical material into the language. Extensive reading of Russian writings, review of grammatical principles, and a general consolidation of the four language skills: reading, comprehension, composition and conversation.

## 314. Russian Conversation (3) F Faculty

Prerequisites: 14 units of lower division Russian or consent of instructor. Functional course in conversation. Intended to meet specific, everyday situations and to provide help to those who intend to speak Russian in travel, work or classroom instruction
315. Survey of Russian Literature I (3) F Faculty

Prerequisite: Upper division standing in Russian. Development of literary writings from Pushkin to Chekov. Taught in Russian.

## 410. Russian Civilization (3) F Faculty

Prerequisite: Upper division standing in Russian. Development of important Russian institutions. Taught in Russian.

## 412. Russian in Business and Commerce (3) On demand Faculty

Prerequisite: Upper division standing in Russian. Preparation of students for job opportunities; fundamental vocabulary of contemporary business world will be introduced through Soviet journals, study of trade, scientific and cultural agreements between USA and USSR
499. Directed Studies in Russian (1-3) F,S Ctvrtlik

Prerequisites: Senior standing, consent of instructor. Readings in areas of mutual interest to student and instructor which are not a part of any regular course. A written report or project may be required.

## Classics

The classics program comprises a full range of lower and upper division courses in Greek, Latin and Sanskrit as well as survey courses in etymology and classical archaeology. It is possible to minor in both Greek and Latin. Those interested in completing a program in classics as their primary major or as a concurrent second major should see requirements for the special major listed in this Bulletin and confer with classics faculty for advice and counsel.

## Lower Division

## 200. Greek and Latin Elements in English (3) F,S Faculty

Survey of the derivation and use of English words of Greek and Latin origin, including common as well as specialized vocabulary. Analysis of words and their component parts in context. Not open to students with credit in either Latin 200 or Greek 200.

## 201. Technical Terms of Science and Medicine (3) F,S Faculty

Study of Greek and Latin roots and word elements basic in the modern technical vocabularies of science and medicine. No knowledge of Greek or Latin required. Same course as Latin 201

## Upper Division

360. Greek Tombs and Treasures (3) F Faculty

Survey of the major sites of ancient Greek archaeology, beginning with the Bronze Age, and concentrating, where applicable, on the interrelationships between finds from the major sites and accounts of the sites in classical literature.

## 370. Roman Monuments (3) S Faculty

Survey of the major sites of ancient Roman archaeology, beginning with the Iron Age, and concentrating, where applicable, on the interrelationships between finds from the major sites and accounts of the sites in classical literature

## Greek

## Minor in Greek (code 0-6811)

A minimum of 20 units which must include four 300-level courses.

## Lower Division

## 221. Fundamentals of Greek (4) F Facuity

Introduction to Greek grammar with emphasis on the rapid reading of graded Exercises in the writing of Greek sentences will be regularly required. Main objective of the course is to provide the student with the groundwork for an pproach to the great Greek masters of poetry and prose in the original language Not open to students with credit in Greek 101A.

## 222. Intermediate Greek (4) S Faculty

Prerequisite: Greek 221 or equivalent. Understanding, reading and writing of ancient Greek at the intermediate level. Reading selections from representative authors, e.g.. Demosthenes, Plato, Aristophanes.

## Upper Division

## 331. Greek Tragedy and Prose Composition (3) F, 1979 and alternate years McKay

Prerequisite: Greek 222 or its equivalent. Translation and literary study of one or more specific plays of Aeschylus, Sophocles, or Euripides. Prose composition

## 332. Greek Lyric Poets and Prose Composition (3) S, 1980 and alternate

## years McKay

Prerequisite: Greek 331 or consent of instructor. Translation and literary study of selected poems from the corpus, with emphasis on Sappho, Alcaeus, Archilochus, Anacreon and Simonides. Prose com position.
351. Plato and Advanced Composition (3) F, 1980 and alternate years McKay Prerequisite: Greek 222. Translation and literary study of one or more dialogues of Plato. Advanced composition.
352. Homer and Prose Composition (3) S, 1981 and alternate years McKay

Prerequisite: Greek 351 or consent of instructor. Translation and literary study of Pros of the lliad or Odyssey. Prose composition. Not open to students with credit in Greek 342.
490. Special Topics (1-3) F,S Faculty

Prerequisites: 12 units of upper division Greek courses or consent of instructor. Translation and literary study of the selected works of an author, genre (e.g., oratory), or period (e.g., Hellenistic Greek). May be repeated for credit up to six units with different topics.

## 499. Directed Studies (1-3) F, S Faculty

Prerequisite: Consent of instructor. Directed studies to permit individual students to pursue topics of special interest. May be repeated for credit up to a maximum of six units.

## Latin

## Minor in Latin (code 0-6815)

A minimum of 20 units which must include four 300 -level courses

## Lower Division

## 221. Fundamentals of Latin (4) F Faculty

Introduction to Latin grammar with emphasis on the rapid reading of graded Latin prose. Exercises in the writing of Latin sentences will be regularly required Main objective of the course is to provide the students with the groundwork for an approach to the great Roman masters of poetry and prose in the original language Not open to students with more than two years of high school Latin.
222. Intermediate Latin (4) S Faculty

Prerequisite: Latin 221 or its equivalent. Understanding, reading and writing of Latin at the intermediate level. Reading selections from representative authors e.g., Pliny, Tacitus, Catullus, Vergil, Ovid. Not open to students with more than three years of high school Latin.

## Upper Division

331. Vergil and Advanced Composition (3) F, 1979 and alternate years McKay Prerequisite: Latin 222 or equivalent. Translation and literary study of Vergil's poetry. Advanced composition.

## 332. Roman Comedy and Prose Composition (3) S;1980 and alternate years

 McKayPrerequisite: Latin 331 or consent of instructor. Translation and literary study of one or more plays of Plautus or Terence. Prose composition.
351. Roman Lyric Poets and Advanced Composition (3) F, 1980 and alternate years McKay
Prerequisite: Latin 222. Translation and literary study of selected poems of Catullus and Horace's Odes. Advanced composition.
352. Cicero and Prose Composition (3) S, 1981 and alternate years McKay

Prerequisite: Latin 351 or consent of instructor. Translation and literary study of a representative work of Cicero. Prose composition.
490. Special Topics (1-3) F, S Faculty

Prerequisites: 12 units of upper division Latin courses or consent of instructor Translation and literary study of the seleced works of an author, genre (e.g., satire), or period (e.g., Medieval Latin). May be repeated for credit up to six units with different topics.

## 499. Directed Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Directed studies to permit individual students to pursue topics of special interest. May be repeated for credit to a maximum of six units.

## Sanskrit

## Upper Division

## 331. Fundamentals of Sanskrit (3) F McKay

Reading and writing of Sanskrit using the standard transliterated alphabet and the devanagari alphabet. Introduction to Sanskrit grammar. Translation and explanation of selections from the epic poem, Mahabharata.
332. Intermediate Sanskrit (3) S McKay

Prerequisite: Sanskrit 331. Continuation of Sanskrit 331. More extensive coverage of Sanskrit grammar. Translation and explanation of Sanskrit epic poetry.

## 341. Advanced Sanskrit (3) F McKay

Prerequisite: Sanskrit 332. Translation and explanation of selections from the Upanishads.

## 342. Vedic Sanskrit (3) S McKay

Prerequisite: Sanskrit 341. Translation and explanation of selected hymns from the Rig Veda.

## Hebrew

## Lower Division

101A-B. Introductory Hebrew $(4,4)$ F, S Faculty
101A. Beginning course. Hebrew alphabet, essential facets of grammar, reading, writing, mastery of basic vocabulary

101B Prerequisite. Hebrew 101A or two years of high school Hebrew. continuation of Hebrew 101A. Simple conversation, reading of selected verses from Genesis and essay texts in modern Hebrew.

201A-B. Intermediate Hebrew $(4,4)$ F, S Faculty
Prerequisites: Hebrew 101A-B or consent of instructor. Reading of representative modern Hebrew literature and review of grammar.

## Upper Division

499. Directed Studies (1-3) F, S Avni

Prerequisite: Consent of instructor. Independent study under the supervision of faculty member.

## Gerontology

## Director: Dr. Dorothy L. Fornia.

Associate Professors: Hamilton, Harmon.
Assistant Professors: Rebok, Thorson

## Certificate Program in Gerontology

Gerontology is the scientific study of the processes and phenomena of aging which includes biological, psychological and sociological dimensions. Resources from many departments of the University will focus upon education and training programs at the baccalaureate, graduate and continuing education levels. Purpose of the multidisciplinary program is to train individuals as specialists in gerontology within a majer of study to serve in community programs, health service irnizations, governmental agencies and private programs in gerontology
organizations, govern in gerontology are Anthropology,
Areas currently offering courses in gerontology are Anthropology, Communicative Disorders, Educational Administration, Health Science, Home Economics, Marketing, Nursing, Physical Education, Physical Th
Welfare and Sociology.
The Certificate in Gerontology may be earned in conjunction with a baccalaureate or master's degree. Courses offered for the certificate may be the same ones used to satisfy, where applicable, major, minor, or credential same ones

Requirements for the Certificate in Gerontology
I. A bachelor's or master's degree

24 units distributed as follows:
Required courses (12 units): Gerontology 400, Biology 401, Psychology 365 or Human Development 357, Sociology 464
3. A minimum of six units chosen in consultation with the director from a list of supporting courses.
4. Independent study on a topic related to gerontology (three units)
5. Approved field experience in adult service setting (three units)
6. Consultation and approval of the program with the director for gerontology.

Certification of successful completion of the Certificate in Gerontology will be recommended by the director.

Interested students should apply to Dr. Dorothy L. Fornia, School of Applied Arts and Sciences, P.E. 326, 498-4056.

## 400. Perspectives on Gerontology (3) F,S Faculty

Multidisciplinary presentation of the scientific and social issues in aging. (A) biophysical, (B) psychological perspectives, and (C) sociological concepts.

## 499. Special Studies (1-3) F,S Faculty

Group investigation of topics of current interest in gerontology. Topics to be announced in the Schedule of Classes. May be repeated for a maximum of six units of credit with change of topic.

## Health Care Administration

general electives. The number of elective units may be reduced if the student needs prerequisite or support course work.
To be admitted to this upper division program, a student must have completed a minimum of 56 semester units ( 84 quarter units), or the equivalent in transferable credit from an accredited institution, with a grade point average of 2.0 or higher.
Admission to the program requires a separate application which is available on campus, or from the Registrar, the Consortium of The California State University and Colleges, 400 Golden Shore, Long Beach, California, 90802.

## Advisory Group

The major purpose of the advisory group is to review and consult on the development and operation of the program. Students may wish to meet with members of the group when their major field or interests coincide with the faculty members' interests
Donald A. Beegle, Professor of Health Science
Mary Lou Larmore, Associate Professor of Economics
John McConnell, Associate Dean for Academic Affairs, School of Applied Arts and Sciences (ex-officio)
Joseph Rocha, Assistant Professor of Political Science
Joseph N. Rosenfield, Director of Review, Orange County Health Planning Council (Part-time faculty)
Martha Siegel, Associate Professor of Nursing
Peggy Smith, Associate Professor of Sociology
Robert J. Smith, Associate Professor of Management

## Upper Division

400. Introduction to the Health Care System (3) F,S Faculty

Introduction to the contemporary health care system to include its historical beginnings and the underlying social and biological forces which influence its organizational forms, financing and manpower requirements; issues and concerns molding its future such as the assurance of the quality of patient care and the regulation and control of the system.

## 411. Problems and Issues in the Health Care System (3) F,S Faculty

Prerequisite: Health Care Administration 400 or consent of instructor. Introduces broad-based issues and concerns within the field. Brings the student into active dialogue and discussion with leaders and representatives of health-related organizations and agencies.

## 440. Legal Aspects of Health Administration (3) F,S Faculty

Focus on the nature, perspective and objects of the legal and legislative process. Provides skill in understanding legal terminology, legal reasoning and the tools of the law, with practical application of these principles and concepts to health care management and health policy decisions.
445. Health Planning: Analysis and Resource Allocation (3) F,S Faculty

Planning process applied to the health care field within a systems approach. Theory and philosophy of planning with consideration of concepts and techniques in analysis, review, goal-setting, organization, regulation and control, community involvement, evaluation and resource development.
450. Quality Assurance of Health Care (3) F,S Faculty

Designed for the health care professional or administrator who is involved in or concerned about assurance of quality in health care. Course includes historical beginnings, state-of-the-art, voluntary and governmental effort and proposed means to quality assurance

## 65. Analysis and Evaluation of Health Care Services (3) F,S Faculty

 Prerequisites: Introductory course in statistics, consent of instructor Techniques of analysis and evaluation applied to health services with respect to organg staffing financing and utilization. Emphasis on the analytic process program evaluation and report of findings.470. Proseminar in Health Care Administration (3) F,S Faculty

Prerequisite: Health Care Administration 465 or consent of instructor. Integrative Prerequisite: Health Care Adm the student's ability to apply the concepts of health experience whinistration as demonstrated by the development and defense of a research paper.
490. Special Topics in Health Care Administration (1-3) F,S Faculty

Topics of special interest in health care administration selected for intensive tudy. Topics will be announced in the Schedule of Classes. May be repeated with different topics to a maximum of six units.
499. Directed Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Independent study of special topics under Prervision of a faculty mems of four units in exceptional cases, may be repeated to a maximum of six units when approved by the Director of Health Care Adm inistration Program

## Graduate Division

630. Seminar in Health Care Administration (3) F,S Faculty

Per intructor. Advanced study and exploration of selected Prerequin administration of the health care system through aspects in the organizath analysis of contem porary health care administrative theory and practice.


## Health Science

## Department Chair: Dr. Peter A. Cortese

Professors: Beegle, Cortese, Kaywood, Pollock, Torney
Associate Professors: Campbell, Irwin, Lussier, Probst.
Assistant Professor: Burhans
Credential Adviser (Health Science): Dr. Peter A. Cortese
Credential Adviser (Safety Education): Dr. Richard Kaywood
Undergraduate Advisers:
Health Science: Dr. Peter A. Cortese. Mr. Alan Probst
Safety Education: Dr. Richard Kaywo
Graduate Adviser: Dr. Marion B. Pollock.
Courses are designed to satisfy health science requirements for (1) genera education, (2) the baccalaureate degree major, (3) Single Subject Credential in Physical Education with an emphasis in School Health, (4) the designated subjects credential in driver education.

There are three specialization options for students seeking a baccalaureate
There are three specialization opolth option is designed for persons who degree in mation program leading to qualification as a desire to pursured Credential in health science teacher in the secondary in Physical Education with an emphasis in Schoolth education is both areas at the secondary level. The option community designed for persons whose occupational objectione the health educator with an official or voluntary health agency. The trafic saffic safety represents a comprehensive specialized program to prepare traffic safety specialists for education, industry, government and various safety-oriented public and private organizations. The designated subjects credential in driver education prepares one to teach all phases of driver education in the public schools
The master of science program is designed to provide students with (1) intensive
the
 methodology, he solution or sempol or commity setting and for also prepared for (3) leadership ren colleges and universities.
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Each applicant should request a copy of the graduate adviser in Heath Science Depa required by the Office of Admissions and Records.

## Major in Health Science for the Bachelor of Science Degree

School Health Option (code 3-1215)
Lower Division: Biology 200, 202, 204, 207; Chemistry 200; Microbiology 100, 101; Psychology 100.
Upper Division: Health Science 403, 409 or 420, 421, 422 or 423, 425, 427, 430, 440; Safety Education 320 or 330 ; Home Economics 430; Psychology 351 or 370.

Community Health Education Option (code 3-1213)
Lower Division: Anthropology 120; Biology 107, 200, 204; Chemistry 200; Microbiology 100, 101; Psychology 100; Sociology 142.
Upper Division: Health Science 400, 401, 403, 430, 485; Safety Education 320; three而 course selected from the following: Psychology 351, Sociology 335; one course selected from the following: Sociology $336,410,445$; one course selected from the following: Speech $330,334,335$

Traffic Safety Option (code 3-1214)
Lower Division: Industrial Arts 161; Physical Education 230;Physics 100A or 104; Psychology 100
Upper Division: Civil Engineering 429; Instructional Media 300; Educational Psychology 305; Health Science 421, 427; Safety Education 320,321, 321L, 422, 422L, 423, 423L, 425, 460; 15 units selected from the following: Educational Psychology 350, Instructional Media 301, Psychology 351, Safety Education 330, $335,490,499$.

## Single Subject Credential in Physical Education

## with an emphasis in School Health

Requirements include a bachelor of science degree in health science (school health option) plus 23-25 units in physical education and the required professional education courses. See the physical education credential adviser.

## Designated Subjects Credential in Driver Education

Student must be working on or have earned a baccalaureate degree plus have an acceptable driving record for the preceding three years. Required courses: Safety Education 320, 321, 321L, 422, 422L, 423, 423L, 460.

## Minor in Health Science (code 0-1211)

A minimum of 23 units which must include:
Lower Division: Microbiology 101
Upper Division: Health Science 422 or 423, 425, 427, 430, 440; Home Economics 430; Safety Education 330

## Minor in Safety Education (code 0-1212)

A minimum of 20 units which must include:
Lower Division: Physical Education 230.
Upper Division: Industrial Technology 307; Safety Education 320, 321, 321L, 422, 422L, 423, 423L; 7 units of electives selected from the following: P.E. 248, Health Science 427, C.E. 429, Safety Education 335, Industrial Arts 161

## Master of Science Degree with a Major in Health Science (code 6-1211)

## Prerequisites

1. A bachelor's degree with a major in health science from an accredited college or university, or;
2. A bachelor's degree with a minimum of 24 units of upper division courses comparable to those required of a health science major at this Uni versity
3. Students deficient in undergraduate preparation must take courses to remove these deficiencies at the discretion of the department graduate adviser.
4. An overall undergraduate grade point average of 2.5 and an upper division health science major grade point average of 3.0.

## Advancement to Candidacy

1. Satisfy the general University requirements for advancement to candidacy.
2. The Advanced Writing Test must be passed before advancement to candidacy can be established. Those failing the Advanced Writing Test must enroll in and successfully complete English 300 or English 317 with a grade of $B$ or better.
3. Approval of the department graduate adviser and the Director of Graduate Studies and Research, School of Applied Arts and Sciences.

## Requirements for the Master of Science

1. A minimum of 31 units of approved upper division and graduate courses
2. A minimum of 22 units of health science courses of which 18 units must include Health Science 508, 570, 581 and 696; and at least two of the following: Health Science 501, 516, 625, 626, 627 and 628.
3. A thesis, Health Science 698, and an oral examination over the thesis.

## Lower Division

10. Contemporary Health Problems (3) F,S Irwin

Development of modern heaith knowledge, attitudes and behavior; includes amily life-sex education, drug use and abuse, mental health, medical quackery and health frauds, common diseases such as venereal disease, heart disease and cancer

## Upper Division

400. Determinants of Disease Prevalence in Man (3) F Beegle, Horowitz

Prequis. Health Scication of epidemiologic procedures to the Prere chen of infectious and chronic diseases, understanding of health hazards, accidents and geriatric problems
401. Community Health Education (3) $S$ Facult

Concepts of community health education with emphasis on community concepts official voluntary and professional health agencies.
403. Community Health Statistics (3) F,S Beegle, Horowitz

Concepts and procedures of statistical analysis in community health. Not open o students with credit in Health Science 300. (Lecture 2 hours, laboratory 2 hours.)
409. Community Health Problems (3) F,S Cortese, Torney

Prerequisite: Consent of instructor. Community aspects of pertinent health problems and the organization of health resources; emphasis on philosophy services, administration and interrelationships of public, private and voluntary health agencies as they function in the community. Not open to students with
411. Health Science for Teachers (3) F,S Burhans, Cortese, Horowitz, Irwin Prerequisite: Upper division students only. Contemporary teaching of health education in elementary and secondary schools; emphasizes drug use and abuse, human sexuality, community and human ecology (meets state credential requirement for health education). Not open to health science majors or minors. Plase note that some sections are designated for those who plan to earn a Please note secondary credential while others are for those working toward an elementary credential.
*420. International Health (3) S Faculty
Analysis of current health problems in the world; examination of contributing social, psychological, physical, legal and cultural factors; international programs for the improvement of world health; structure and functions of world health agencies and organizations.
*421. Health Behavior (3) F,S Lussier
Prerequisite: Psychology 351 or 370. Current research in the medical and behavioral sciences related to health and illness, with attention to factors underlying individual and group health behavior.
422. Environmental Health (3) F,S Horowitz, Lussier

Factors in man's physical environment which may exercise a deleterious effect on his physical development, health and survival. Not open to students with credit in Health Science 322.

## 423. Consumer Health (3) F,S Campbel

Quackery and fraudulent health practices; protection agencies; laws protecting onsumer health; criteria for selecting health information, products and services and medical care services. Not open to students with credit in Health Science 321.
425. Human Sexuality and Sex Education (3) F,S Beegle, Burhans, Campbell Bio-medical, sociological, and psychological aspects of human sexuality, the communication of sexual information, the implementation, content and evaluation of family life and sex education in the schools. Not open to students with credit in Health Science 325.

## 27. Drugs, Health and Society (3) F,S Beegle,Burhans, Irwin, Torne

Study of psychoactive drugs with preliminary attention to alcohol, nicotine, caffein, canabis, hallucinogens, narcotics and other drugs; examination of trends philoshical issues and behavioral practices associated with drug use and ponden includes psycho-social, legal, historical, philosophical and politica epens; treatmentrehabilitation activitios and programs; and drug abus aspects; treatment-rehabilitation activities and programs, and and 327.
*430. School Health Program (3) F,S Burhans, Cortese, Pollock
Intensive analysis of the philosophy, organization and legal aspects of the school health program; includes school and community coordination for a team approach to health education for the school age individual.

## *440. Applied Concepts of School Health Science (3) F, S Pollock

Prerequisite: Health Science 430. Identification and application of the concepts and modes of inquiry unique to the discipline of health science; development of ppropriate curriculum based upon an analysis of individual, school and community needs and interests.
480. Observation and Participation in Health Science (3) F,S Faculty

Co-requisite: To be taken concurrently with Secondary Education 421 Supervised observation in secondary schools; classroom discussion and analyses (Lecture-discussion 2 hours, observation 2 hours.)
*485. Field Experience in Community Health Education (3) F,S Beegle, Cortese
Prerequisites: Health Science 401 and consent of instructor. Supervised observation and field experience in community health education as conducted by official voluntary and professional health organizations.
*490. Independent Studies in Health Science (1-3) F,S Faculty
Prerequisite: Consent of instructor. Students will conduct independent library or laboratory research under the supervision of a faculty member and write a report of the investigation. May be repeated for a maximum of six units.
*499. Special Studies (1-3) F,S Faculty
Group investigation of selected topics. Topics to be announced in the Schedule Gfor May be repeated for credit to a maximum of six units.

## Graduate Division

501. Public Health Organization (3) F Beegle

Preqequisite: Undergraduate major in health science or related field. Analysis of monents of public health from an historical, organizational and erninistrative perspective. Topics to include organization of health care delivery,列 analysis of contemporary public health issues.

## 08. Administrative Relationships in Health Education

Programs (3) F Pollock Prerequisite: Undergraduate major in health scienistrative responsibilities and to administrative theory; investigation of administation programs. function implicit in school health or other health
516. Patient Health Education (3) S Faculty

Prerequisite: Undergraduate major in health sciencelucation programs in both involved in planning and implementing patient healthent in hospitals and long. outpatient departme erm care facilities.
70. Theoretical Concepts and Issues in Health Science (3) F Cortese
identifich philosophies and issues in health science.
(3) S
581. Curriculum Development and Evaluation in School Health Education
 Pollock
Prerequisites: Health Science 403, 440 and student teaching or teaching experience in health education. Principles of curriculum development, selion and practice in measurement in schoo health education.
625. Seminar in Sex Education (3) F Campbell

Prerequisite. Health Science 425. Identification and critical analysis of curren Prerequisite: Health Science 25 in selected areas of sex education.

## 626. Seminar in Preventive Medicine and Public Health (3) F Beegle curren

Prerequisite: Health Science 409. licaliche public health.
(3) S Torney
627. Seminar in Stimulants and Depressants Prerequisite: Health Science 427. Identimulant and depressant drug use and resear

## 628. Seminar in Consumer and Environmental Health (3) $S$ Lussier

Prerequisite: Health Science 422 or 423 . Identification and critical analysis of current research and practices in selected areas of consumer and environmental health

## 696. Research Methods (3) F,S Pollock

Prerequisites: Undergraduate major in health science or related field undergraduate course in statistics. Introduction to research methodology in the area of health science.

## 697. Directed Studies (1-3) F,S Pollock

Prerequisite: Advancement to candidacy. Independent investigation of research problems in health education.

## 698. Thesis (1-4) F,S Pollock

Prerequisites: Health Science 696, advancement to candidacy. Planning preparation and completion of an approved thesis.

## Safety Education

## Upper Division

## 320. Principles of Accident Prevention (2) F,S Kaywood,Probst Accident prevention in the home, at school, on the job and in the community.

Co-requisite: Safety Education 321L. Study of factors basic to safe and esponsible driving. Not open to students with credit in Safety Education 325

321L. Driver and Traffic Safety Education I Laboratory (1) F,S Probst
Prerequisites: Valid California driver's license and an extensive driving record free from repeated traffic violations, convictions and/or accidents. Co-requisite Safety Education 321. Laboratory to improve personal driving skill. Not open to sudents with credit in Safety Education 325.

## 330. Elementary and Secondary School Safety (2) F Probst

 Responsibilities of the classroom teacher in school safety education programs.
## 22. Driver and Traffic Safety Education II (2) F,S Kaywood

Prerequisites: Safety Education 321, 321L and consent of instructor. Co requisite: Safety Education 422L. Analysis of the driving task involving factors of man-machine-environment complex in traffic safety; legal provisions; application of technological advances and research in traffic safety. Not open to students with credit in Safety Education 440.

## 422L. Driver and Traffic Safety Education II Laboratory (1) F,S Kaywood

Prerequisites: Safety Education 321, 321L and consent of instructor. Corequisite: Safety Education 422. Laboratory experience teaching beginning drivers in the dual control car. Not open to students with credit in Safety Education 440.
423. Driving Simulators (2) F, S Kaywood

Prerequisites: Safety Education 422, 422L (may be taken concurrently) and consent of instructor. Co-requisite: Safety Education 423L. Design, concepts, research and development, capabilities, limitations, operational procedures and preventive maintenance of driving simulators. Not open to students with credit in Safety Education 445

423L. Driving Simulators Laboratory (1) F,S Kaywood
423L. Driving Simulators Laboraiory (may be taken concurrently) and Prerequisites: Safety Education 422 , 4 . consent of instructor. Co-requisite. Sriving simulator laboratory. Not open to students teaching beginning drivers in 445 with credit in Safety Education 445

## 425. Behavioral Factors in Traffic Safety (3) S Faculty

Prerequisite: Psychology 100 or consent of instructor. Human behavior in its relationship to accidents in the driver-vehicle-environment system. Theory of causes and prevention of accidents and techniques for countering them.

## Administration and Supervision of Driver Education Programs

## Kaywood

Kintructor. Organization dion programs. Includes aderal of current trends and research studies, and factors involved in program supervision
90. Independent Studies in Safety Education (1-3) F,S Kaywood

Prerequisite: Consent of instructor. Students will conduct independent library or laboratory research under the supervision of a faculty member and write a report of he investigation. May be repeated for a maximum of six units
499. Special Topics in Safety Education (1-3) F,S Kaywood

Group investigation of selected topics. Topics to be announced in the Schedule flasses. May be repeated for credit to a maximum of six units

## History

## Department Chair: Dr. Jack Stuart

## W. Frazer Halvor G. Melom

Professors: Abou-El-Haj Ahlquist, Asher, Bernstein, Boutelle, Burke, Cerillo, Furth Hardeman Higgins, Hood, Kimball, Lindgren, Lipski, McFaul, Nichols, Peters Sater, Stuart, Svec, Walzer, Wilde, Williams
, Berk, Black, Buchanan, Gosselin, Gunns, Raun Sievers, Springer, Weber.
assistant Professor: Collins.

## redential Adviser: Dr. Irving Ahlquist

## oordinator, Social Science Certificate Program: Dr. Irving Ahlquist.

## Minority Adviser: Dr. David Hood

## Academic Advising Coordinator: Dr. Toivo Raun.

The study of history is intended to serve as a cultural background, as a The study preparation to enter teaching, law, librarianship, government, foundation for those planning to
oreign service, and History majors who are contemplat doral programs require competency in many master's programs and most oreign language(s). Interested undergraduates should begin sur as early as possible

The Stuart L. Bernath Memorial Prize, named for a late member of the faculty, is warded annually to the student who writes the best essay on some aspect of history. The award consists of a modest sum, a certificate and an entry on the official transcript of the recipient. Further information may be obtained from the prize committee of the History Department.
The Department of History offers graduate study leading to the master of arts egree. The candidate is responsible for the observation of the general equirements stated in this Bulletin as well as the specific departmental equirements stated here and, more fully, in the Master of Arts Brochure, available from the History Department office upon request

Graduate assistantships and departmental reader positions are sometimes vailable for qualified persons. The graduate assistant works closely with a ainalty, but is not responsible for instruction.

## General Education Requirement of United States History

Candidates may satisfy the requirement as follows: Lower Division Students History 162A and 162B, or 172, or 173, or 174. Upper Division Students-Any upper
division U.S. history course except California history. Check with History Department for upper division courses which are applicable.

## Major in History for the Bachelor of Arts Degree (code 2-8525)

Lower Division: A minimum of any 12 units, except that no one may take 162A and 172 , or 162B and 173
Upper Division: (1) History 301; History 495 or 499. (2) 21 additional units, which must include either nine units in each of two of the following areas or six units in each of three of the following areas: (a) Ancient and Medieval, (b) Modern European, (c) Russian, (d) British, (e) Latin American, (f) United States, (g) East Asian, (h) South Asian, (i) Interdisciplinary and Comparative History. With the approval of the department students may design a topical area as a substitute for one of the geographical areas.
Breadth Requirement: The total 39 unit requirement for the major must include at least three units in each of the following areas: (1) Modern Western History: 131B, 151B, 162A, 162B, 172, 173, 174, 402, 494 or any upper division course in United States, Latin American, British or Modern European history (with the exception of $332,333,334,353,431$ ). (2) Ancient, Medieval and Early Modern Western History: 131A, 151A, 313, 314, 316, 317, 318A, 318B, 332, 333, 334, 351, 353, 432A (3) Non-Western History: 181, 182, 341A, 341B, 382A, 382B, 383A, 383B, 385A, 385B, 431, 441, 481, 487, 488.
Social Science Requirement: Six upper division units from other departments or programs of the School of Social and Behavioral Sciences. These units are in addition to those used to fulfill the requirements of any General Education category.
Note: Students working for a single-subject credential in secondary education must consult with the department's secondary education adviser as to the applicable credential major requirements

Minor in History (code 0-8525)
A minimum of 21 units which must include:
Lower Division: A minimum of six units, which must include a six-unit sequence from the following: History 131A and B, 151A and B, 181 and 182 .
Opper Division: A minimum of 12 units, which must include at least six units in each of two areas as defined for the major.

## Master of Arts Degree with a Major in History (code 5-8525)

## Prerequisites

1. A bachelor's degree with a major in history or
2. A bachelor's degree with 24 units of upper division courses in history. These courses must be comparable to those required of a major in history at this University. Deficiencies will be determined by the graduate adviser after consultation with the student and after study of transcript records.

## Advancement to Candidacy

1. Students are advanced to candidacy when they have completed enough of the requirements for the degree to be able to set a date and a committee for their comprehensive examinations, and plan the completion of their required courses. Advancement must take place before the end of the semester preceding the examinations. At the time of advancement a student must either have already taken History 499 and History 301 or equivalent, or presently be enrolled in them.
2. Students writing a thesis are advanced at the time that they begin thesis work.

## Requirements for the Master of Arts

1. Twenty-four units of upper division and graduate courses in history; a minimum of 15 units in the 500/600 series in history; at least nine units of the
graduate program, including at least one 600 level seminar, must be taken in each of two of the following fields: (1) Ancient, (2) Modern European, (3) Russian, (4) British, (5) Latin American, (6) United States, (7) Eas Asia, (8) South Asian, (9) Medieval. History 695 or 697 may be applied toward the 15 units of 500/600 courses only upon the approval of the graduate adviser.
2. A reading knowledge of German, French or other foreign language may be required, depending upon the candidate's program of study as recommended by her/his graduate committee.
3. Six additional units of upper division or graduate courses in history or closely allied fields
A comprehensive written examination in history, unless permission is given by the History Department to substitute a thesis for this requirement.

## Lower Division

131A,B. Western Civilization (3,3) F,S Faculty
131A,B. Western Civilization political, eon from its origins to the present. Stresses persons, moments and institutions that hat upon the modern world. Not open to students with credit in Honors 130.

151A,B. History of England and Great Britain $(3,3)$ F,S Faculty
Survey and analysis of the cultural, economic and political growth of Great Sitain and the Commonwealth from earliest times to the present. Emphasis is placed on the evolution of Anglo-American institutions and cultural heritage.

162A,B. Comparative History of the United States and Latin America $(3,3)$ F,S Faculty
The history of the Western hemisphere from European contact to the present with emphasis on institutions and traditions. (These two courses together meet the State of California requirement in U.S. History.)

## 72. Early United States History (3) F,S Faculty

Survey of the cultural development of the United tates from discovery through reconstruction. Attention to the colonial era, ablen enational growth, disunion and俍俍 History 162A or 171A or both 173 and 174.
173. Recent United States History (3) F,S Facult

Survey of the political, social, economic and cultural development of the United States from reconstruction to the present. Attention to the rise of industrial America, the United States as a world power, welfare democracy and the Cold War era. Material may be covered chronologically or topically. Fulfils the general education requirement for United States history. Not open to students with credit History 162 B or 171 B or both 172 and 174.
174. Major Themes in United States History (3) F,S Faculty history. Course Examination of major issues, problems and institutions, placing them in historical will focus on conter in . history. Not open to perspective. Fulfills the general education 162 or both 172 and 173

## 181. Traditional Asia (3) F Faculty

Introduction to traditional civilizations of China and India with some reference to introductionals will be emphasized to illustrate the richness and diversity Studies 100. Not open to students with credit in History 181A.

## 182. Modern Asia (3) S Faculty

Emphasis on China and Japan in the modern world with some attention to India as well as the experiences of Asians in the U.S. Continuity and change; reform and revolution in culture, politics and the economy will be included. Same course as Asian Studies 101. Not open to students with credit in History 181B

## 290. Special Topics in History (1-3) F,S Faculty

Topics of current interest in history. May be repeated with different topics to a maximum of six units. Applicability to major requirements will be specified in description of individual topics, as announced in the Schedule of Classes.

## Upper Division

301. Methodology of History (3) F, S Faculty

Required of all history majors in the first semester of upper division work. How historians ask interpretive and methodological questions and how these questions are answered intellectually and technically (including bibliography, structure and writing). Practice in the use of primary sources, reconstruction of events and presentation of findings. Preparation and analysis of written student exercises.

## Ancient and Medieva

*313. Ancient Greece (3) F, S Hood
History of the Greeks and the Greek world from the earliest times to the Roman Conquest.
*314. Roman History (3) F,S Hood
History of Rome and the Roman world from the Eighth Century B.C. to the Fifth Century A.D.

## *316. Early Middle Ages (3) F Abrahamse, Boutelle

History of Western Civilization from the fall of the Roman Empire in the West to the Crusades. Germanization of the West, evolution of Christian institutions, Slavic expansion, Byzantinization of the Eastern Empire, Islamic civilization, Carolingian age, feudal and manorial institutions.

## *317. High Middle Ages (3) S Abrahamse, Boutelle

History of Western Civilization from the Crusades to the end of the Middle Ages Revival of trade, growth of towns and of capitalism; origins of modern political institutions; and medieval learning and art.
*318A,B. History of the Byzantine Empire $(3,3)$ F,S Abrahamse
Political development of the Byzantine Empire from the fourth century A.D. to the fall of Constantinople in 1453; the cultural heritage of the Roman Empire in the eastern Mediterranean; religious controversies and the development of eastern Christianity; relations with Islam and medieval Europe.
*351. Medieval England (3) S, 1980 and alternate years Boutelle
Analysis of English political institutions, society, religion and economy in the Anglo-Saxon, Norm an, Plantaganet and late medieval eras.
*411. Ancient and Medieval Christianity (3) F Abrahamse
Development of Christianity from the New Testament period to the Renaissance, with emphases on the growth of doctrine church, institutions and the role of Christianity in ancient and medieval society. Not open to students with credit in Religious Studies 471.

## Modern European

*331. Jewish History (3) S Eisenman, Springer
A survey of Jewish history from early times to the present. Subjects such as the Babylonian captivity; the fall of the Temple; the rise of Rabbinic Judaism; the dispersion; the impact of anti-Semitism; Jewish community and intellectual life in he Middle Ages; emancipation from the ghetto; political movements; the Holocaust; Israel. Same course as Religious Studies 316.
*332. The Age of Renaissance (3) F Gosselin
Early modern period. Economic decline and shifts in enterpreneurial activity social structures; Italian and Northern state systems; Italian humanism and hilosophies; magic and science; spread of Italian intellectual patterns to western Europe.
*333. The Age of Reformation (3) S Gosselin
Age of theology; medieval and Renaissance reform movements; Reformation Aglogies; problems of Scriptural clarity; Counter-versus Catholic-Reformation ociology of conversion; religious wars and monarchical crisis; expedient toleration; 17th century philosophic attacks on religion and God.

## *334. The Age of Absolutism (3) F Lindgren

Rise of the French Imperium in Europe and decline of the Spanish; triumph o science and mechanistic philosophy; growth of statism and its increasing eparation from religious sectarianism; impact upon warfare, society, economic enterprise and culture
335. Age of Enlightenment (3) F,S Lindgren

Intellectual, political and economic changes caused by evolution in thought and conomy; persistence of the absolute state and the modifications of enlightened despotism; intellectual and cultural aspects of the enlightenment.
*336. The French Revolution and Napoleon (3) S Lindgren
End of the Old Regime and the French Revolution. Decline of the feuda monarchy, failure of enlightened despotism, the rise of revolutionary thought French Revolution, and Napoleonic imperialism.
337. Europe in the Nineteenth Century (3) F Abou-El-Haj, Lindgren, Weber Apogee of European power, influence and confidence. Recovery from French apolion and revolution, nationalism unification of Germany and Italy, triumph of liberalism, challenge of socialism outburst of imperialism, alliances and alignments leading to World War I.
*339. Europe Since 1914 (3) F, S Lindgren, Weber
World War I; outstanding changes in Europe after the First World War with particular stress on the rise of Fascism in Italy, Nazism in Germany, Communism in Russia, and Social Democracy in Scandinavia and Great Britain; the failure of the eague of Nations and the collapse of collective security, World War II; the United Nations; postwar problems.
*431. Arab and Islamic Civilization (3) F Abou-El-Haj
History and culture of the Arab and Islamic world from early origins in Arabia, and the establishment of the early Arab empires with emphasis on the recent period Not open to students with credit in History 431A or 431B.

432A,B. Northern Europe (3,3) F, S 1979-80 and alternate years Lindgren
Historical foundations; the Vikings; medieval changes; the Reformation emphasis on institutions, political development and social-economic changes Emergence of the modern state, development of parliamentary and constitutiona overnments; social-economic changes and cultural movements.
*433. History of the Iberian Peninsula (3) F Svec
Rise of Portugal, Castile and Aragon, the Catholic kings, Imperial Spain, Portuga and its empire, Portugal and Spain in transition, the republics, Salazar and Franco.

## *437. History of Germany 1871 to Present (3) F Bane

History of Germany from unification: the First World War, the Weimar Republic the National Socialist Reich and the Post-War Recovery.
*438. History of Marxist Thought (3) F Stuart
Survey of Marxist thought from the mid 19th century to the present. Intellectual precursors of Marxism; basic concepts of Marx and Engels; divergent paths of Marxism in the 20th century. No previous study of Marxism will be assumed but students will benefit from having some background in the history of western industrial societies.
*439. Social History of Europe since 1800 (3) F Weber
The industrial revolution, the labor movement and forms of social protest; the transformation of class structure; mass communications and the new popular culture; education and social mobility in 20th century society.

## Russian

## *341A. Foundations of Russia (3) F,S Springe

Evolution of the state structure, diverse cultural patterns, and social structures associated with ancient Kiev Russia: rise of Moscow, origins of autocracy and serfdom; westernization and modernization as problems during the Imperial period to 1801. Particular emphasis on social history.

## 341B. Modern Russia (3) F, S Raun

Interaction with the West from 1801; era of great reforms and revolutionary movements; downfall of Imperial Russia; establishment of the Soviet regime; chief political, social, economic and cultural developments in the Soviet era; role of the Soviet Union in world affairs

## 441. Russian and Soviet Cultural History (3) F Raun, Springer

Cultural development of Russia from the beginning of massive westernization to the present; emphasis on values, attitudes and society as seen through literary sources, major developments in painting, music, social thought.

## British

*353. Tudor and Stuart England (3) $F$ Kimball
New Monarchy; Renaissance and Reformation; rise of commercialism capitalism; foundations of empire; age of Elizabeth I and Shakespeare; experimen in Divine Right Monarchy; trium ph of Puritan, Parliament and Common Law; the age of the Puritan and Milton; the Restoration; and the beginnings of party and cabinet government.

## *355. Hanoverian England (3) S Kimball

Revolution of 1688 , rise of party and cabinet government, Whig supremacy Johnsonian England, Second Hundred Years War, agricultural and industria revolutions, evangelical and humanitarian movements, England and the French Revolution, reaction and reform.

## *356. Victorian Britain (3) $F$ Kimball

Special emphasis on economic and social conditions, classes and class conflict, intellectual ferment, advance of democracy, changing role of the state, imperialism and Britain's changing world position
*357. Recent Britain (3) $S$ Kimbal
Special emphasis on economic and social conditions, rise of the Labor Party, effects of two world wars, impact of communism and fascism, development of the welfare state and Britain's changing imperial and world position.
*451. British Empire and Commonwealth (3) S Wilde
Topics in British Empire and Commonwealth history in two basic formats: (1) comparative studies of major Commonwealth nations, e.g., South Africa and Canada; (2) the rise and fall of the British Empire examined in the light of various theories of imperialism, neo-colonialism and economic development. May be repeated for a maximum of six units if topics dealt with are different
*455. English Constitutional and Legal History (3) F Wilde
Origin and development of the Common Law and of the English constitution and its elements-monarchy, Parliament, Church and courts-in mediaeval and early modern times.

## Latin American

*362. Colonial Latin America (3) F Nichols, Svec
Iberian preparation for overseas expansion; discovery and conquest in America; evolution of colonial institutions; dynamic 18th century developments; Wars of Independence.
*364. The Latin American Nations (3) S Sater, Svec
Political, economic, social and intellectual evolution of Latin America in the 19th and 20th centuries.
*462. Mexico (3) F Nichols, Sater, Svec
Spanish conquest of Indian Mexico; settlement and exploration; colonial life and institutions; the achievement of independence from Spain; reform, foreign intervention, dictatorship in the 19th century; the Revolution of 1910 and after: contem porary Mexico. Not open to students with credit in History 462A or 462B.
*463. The Caribbean Area (3) F Nichols
History of the West Indies, Central America and northern South America. Economic, political and cultural development of these regions and their relations with the United States.
*464. Argentina (3) F Svec
Discovery and settlement, colonial institutions, democracy and dictatorship following independence, economic and social modernization, Peronism and its aftermath. Not open to students with credit in History 461.
*465. Brazil (3) S Svec
Settlement of Brazil and the development of a tropical society; political economic, social and cultural problems of the Empire and the Republics to the present day. Not open to students with credit in History 461.
*467. Chile (3) F,S Sater
Indian background; imposition of Spanish Rule; development of colonial Chile; struggle for nationhood; freedom and anarchy; the autocratic republic; the liberal republic; the Parliamentary Republic; the Revolution of 1925 and its aftermath.

## United States

*372. United States: Colonial Period (3) F Buchanan, Walzer
Discovery and settlement of the new world; European institutions in a new environment; development of colonial government, economy and socia institutions; European dynastic rivalry and colonial America.
*373. United States: Age of Revolution (3) S Buchanan, Walzer
Clash between British attempts to control and tax the colonies and colonia distaste for both; growth of an independent spirit; the American Revolution; problems of the new nation; the Constitution.

## *375. The Romantic Revolution in America: 1800-1860 McFaul <br> (3) F,S Bernstein

The emergence of a new American character based upon the romanticized ideal of freedom and individualism ; the search for utopianism and perfectionism amids social anxiety; the conflict between agrarianism and capitalism; the heritage of Jeffersonianism and the revolutionary politics of Jacksonianism; the romance and mythology of new frontier; the social and political crisis created by an expanding slave empire
*376. United States: Civil War and Reconstruction (3) F,S Ahlquist, Collins, Polakoff
Sectional rivalry, manifest destiny, mid-century divisive forces, Civil War and reconstruction.
*377. United States: Emergence of an Industrial Society (3) F Black
Growth of American industry from the post-Civil War period to the close of the 19th Century, effect of industrialism on the businessman, farmer, laborer and politician, rise of the city and the characteristics of immigration.
*378. United States: The Progressive Period and the Twenties
(3) S Cerillo Gunns
Progressive movement from Theodore Roosevelt's administration; its various manifestations and accomplishments on the city, state and national levels. Rise of America to world power. Analysis of the 1920s from an economic, social and political point of view.
*379. The United States in the 1930's, World War II and After (3) F Gunns, Ragland
Depression and the beginnings of welfare democracy; United States in World War II; post-war problems and world affairs
*380. United States Since 1945 (3z F, S Bernstein, Burke, Gunns, Ragland
The United States in the nuclear age: the development of the Cold War and its domestic ramifications, the "post-industrial" economy, the civil rights revolution, the rise of political dissent, the Watergate affair, and after.
468. Local History: Communities (3) F,S Faculty

Description and analysis of selected communities within the greater Los Angeles-Long Beach area from an historical perspective, with emphasis on population and migration patterns, the development of economic forces shaping the area and techniques of local history. Specific focus will be announced in the Schedule of Classes.

## 469. Ethnic Groups in Urban America: A Historical Examination Collins <br> (3) $\mathrm{F}, \mathrm{S}$

An examination of the origin, migration, settlement and the assimilation problems of the various ethnic groups in major American cities since the late 19th century. Emphasis will be upon the economic, social, political and educational problems encountered by different groups attempting to adjust to urban life.
*470. History of American Political Parties (3) F,S Polakoff
Early American attitudes toward political parties, origins and historical development of the two-party system, focusing on three separate phases of party activity (Federalists versus Jeffersonian Republicans, Jacksonian Democrats versus Whigs, Republicans versus Democrats), from the 1850's to the present,oneparty interlude of 1820 s, important role played by minor parties (Antimasons, Prohibitionists, Populists, Progressives, American Independents); course will draw heavily on recent historical studies of political leadership, party structures and voting patterns.

## 471A,B History of the Westward Movement (3,3) F,S Hardeman, Peters,

 WilliamsAnalysis of the frontier experience of the American people; expansion across the American continent and its influences on American ideas and institutions; special attention given to explorations, movement of populations, effects of sectionalism and the geographical bases for American development.
*472. History of the South (3) F Ahlquist, Polakofi
Survey of the economic, social, intellectual and political development of the outh from colonial times, with emphasis on the period from 1820 to the present.
473. California History (3) F,S Hardeman, Williams

Survey of California history from the arrival of Europeans to the present, with emphasis on significant social, political and economic developments.
*474. History of Cities in the United States (3) F,S Cerillo
Survey of urban America from the colonial period to the present, with emphasis on the process of urbanization, urban problems and politics. Not open to students with credit in History 474A,B.
*475. History of Business in the United States (3) S Black
Institutional development of the American business firm and the changing role of entrepreneurs and managers in American society.
*476A,B. Social History of the United States $(3,3)$ F,S Berk, Stuart
Development of American society from the beginnings of settlement to the present, with particular em phasis upon the modification of European institutions in the American environment. Includes social structure, nature of the family, ethnic ensions, Americanization of the immigrant, the changing character of urban and ural life and the social background of major political events
*477A,B. Development of American Thought (3,3) F,S Berk, Higgins
History of the development of American ideals and attitudes from colonial times o the present. Consideration of changing views on such topics as the nature of God and man; political and social beliefs; and the role of reason and science in the good life.

448A. Early Diplomatic History of the United States (3) F Peters
Foreign relations from the American Revolution to the Spanish-American War Special attention given to isolationism and the Monroe Doctrine, expansionism and manifest destiny, Civil War, the Open Door and the Far East, and the war with Spain.
*478B. Recent Diplomatic History of the United States (3) S Peters
Foreign relations from the turn of this century to the present. Special attention given to neutrality and the two world wars, cold war, ordeals of the 50's and 60's, competitive coexistence and continuing world crises.
*479A,B. Constitutional History of the United States $(3,3)$ F,S Burke
Development of the American constitution from the 17th century to the present Colonial heritage, impact of the Revolution, the framing period, the evolving role of the judiciary in defining powers and limits in government, slavery issue, judicial review and due process, war powers, growth of the presidency, civil rights and the modern court. Special emphasis is on constitutionalism as a working ideal in American thought and institutions.
*482. History of Religions in the United States (3) F,S Berk
Survey of major themes in the unique American religious experience. Topics of significance will include the adaptation of European Christianity to novel American circumstances, the proliferation of denominations and the varied religious response to a dynamic American society. (Same course as Religious Studies 482.)
*485. History of Women in the United States (3) F, S Faculty
Study of the changing role and status of women in American society from 1600 to the present. Emphasis will be placed on the similarities and differences in the position of women in various sub-cultures, on the roles of women at different economic levels and on past and present feminist movements.
*486. History of the Afro-American in the United States (3) F,S Collins Survey of the role of the Afro-American in American history from colonial times to the present, including the African heritage, nature of the American slave system, emancipation and the struggle for equal rights.
*489. Topics in Legal History of the United States (3) F Burke
Case studies in American law from colonial times to the present: English common law heritage, puritan and frontier influences, the legal profession, judicial traditions, formative stages in criminal law, torts and contracts, and modern trends in legal thought. May be repeated with different topics to a maximum of six units.

## East Asian

*382A. Imperial China (3) F Furth
Introduction to the classical civilization, stressing the evolution of imperial institutions, the Chinese world order and China's traditional cultural heritage. Not open to students with credit in History 482A.

## *382B. Modern China (3) S Furth

Chinese society since 1800. Impact of imperialism, reform and revolutionary movements, the background of Chinese communism. Not open to students with
*383A. Traditional Japanese Civilization (3) F Sievers
Japanese civilization from its origins to the 19th Century. Emphasis on intellectual and cultural developments on the selective adoption and modification of Chinese culture. Not open to students with credit in History 483A.

## *383B. Modern Japan (3) S Sievers

Japan from the late Tokugawa period to the present. Western impact on traditional Japan and the Japanese response; the development of a modern state; liberalism and totalitarianism; the rise and fall of imperialism. Not open to students with credit in History 483B.

## *487. Social and Intellectual Change in Recent Japan (3) F, alternate years Sievers

Overview of social and intellectual change in Japan from the Meiji Restoration to the contemporary period seen through historical documents, literature and film.
*488. The Chinese Revolution (3) F, alternate years Furth
Prerequisite: History 181B or 382B or consent of instructor. Traditional peasant revolts, the Taiping and Wuchang uprisings; the Nationalist and Communist revolutions; westernization and cultural revolution since 1898.

## South Asian

## 385A. The Early History of India (3) F Lipski

History of the Indian subcontinent from the time of the Indus Valley civilization through the Mughal empire; the impact of invasions, from the Aryans to the Moslems; formation and diffusion of Hindu culture; emphasis on social and intellectual history. Not open to students with credit in History 485A

## 385B. History of Modern India (3) S Lipsk

Impact of the West on India since the 16th Century; the British period, Indian renaissance and independence movements; India and Pakistan since independence. Not open to students with credit in History 485B.

## 481. Modern Hindu Religious Thought (3) $S$ Lipski

Western impact on traditional Hinduism, Renascent Hinduism. Worldwide significance of contemporary Hindu thought. (Same course as Religious Studies 481. To be taught by History.)

## Interdisciplinary and Comparative History

*304. The Hero in History (3) F,S Faculty
The concept of the hero is used to analyze the values of particular societies or historical epochs using interdisciplinary approaches. Some attention is paid to the differing notions that historians have had as to the role and significance of the hero as historical actor. Specific emphases will vary by instructor and will be posted in advance.
*305. The Family in History (3) F Abrahamse, Furth, Weber
History of the family from the medieval period to the twentieth century, with emphasis on its changing economic, social and emotional functions. The historical development of women's roles, childhood, marriage patterns, domestic labor and extended family relations will be considered, with special attention to contrasting developments during different historical periods and within different civilizations Emphasis will vary as between Europe, the U.S. and East Asia but with specia attention to the early modern era. Students will have the opportunity to work on a family history project.
*401. History of Women in Cross-Cultural Perspective (3) S Faculty
Comparison of how different social and cultural systems have affected the changing historical roles of women. Analysis of women's work roles, social status and political participation in selected developed and undeveloped Western and Asian, capitalist and socialist societies. Area emphasis to vary from semester to semester. Independent student research projects. Open to all qualified men and women.
405. Environmental History (3) F Hood

Historical attitudes toward the natural environment with emphasis on rise of the conservation movement. Explores relationship between the wilderness and man, its history, meaning and management. Course will include case studies and a wilderness field trip.

## General

490. Special Topics in History (1-3) F, S Faculty

Prerequisite: Consent of instructor. Topics of current interest in history selected for intensive development. May be repeated with different topics to a maximum of six units, but no more than three units may be used to satisfy the requirements for the major. Topics will be announced in the Schedule of Classes.
491. Modern and Contemporary Africa (3) $S$ Collins

Conquest of Africa by European states, contrasting colonial systems as they evolved, anti-colonial movements and progress towards self-government or independence, problems of economic and political development, and race tensions in areas of white settlement. Not open to students with credit in History 491B.
*495. Colloquium (3) F,S Faculty
Prerequisite: Consent of instructor. Analysis and interpretation of significant documents and works of history. Individual works discussed will center about a general theme selected by the instructor. May be repeated with different topics to a maximum of six units, but no more than three units may be used to satisfy the requirements for the major.
*498. Directed Studies (1-3) F,S Faculty
Prerequisite: Consent of instructor. Independent study under the supervision of a faculty member. May be repeated up to six units.
*499. Historians and Historiography (3) F,S Faculty A critical study of the nature of history and the writings of historians.

## Graduate Division

## 510. The Literature of History (3) F Faculty

Reading and discussion of some of the major works in the field and intensive study of bibliography and bibliographical aids. May be taken twice for credit in each of the fields: (1) Ancient, (b) Modern European, (c) British and Empire, (d) Latin American, (f) United States, (g) Asian, (h) Medieval, (j) Russian
520. Select Problems in History (3) S Faculty

Examination of some of the typical problems in the field; approaches, analysis and interpretations. May be taken twice for credit in each of the fields: (a) Ancient (b) Modern European, (c) British and Empire, (d) Latin American, (f) United States, (g) Asian, (h) Medieval, (j) Russian.

## 611. Seminar in Ancient History (3) F,S Faculty

Prerequisites: Six units of upper division ancient history or consent of instructor. Selected topics in ancient history. May be repeated for a maximum of six units.
612. Seminar in Medieval History (3) F,S Faculty

Prerequisites: Six units of upper division medieval history. May be repeated for a maximum of sixunits.

## 631. Seminar in European History (3) F,S Faculty

Prerequisite: Consent of instructor. Directed reading and research in the political, economic, social and cultural history of Europe. May be repeated for a maximum of six units

## 641. Seminar in Russian History (3) F Faculty

Prerequisite: Consent of instructor. Directed reading and research in the political, economic, social and cultural history of Russia. May be repeated for a maximum of six units.

## 651. Seminar in British History (3) F,S Faculty

Prerequisites: Six units of upper division British history and consent of instructor. Selected topics in British history. May be repeated for a maximum of six units.

## 61. Seminar in Latin American History (3) F,S Faculty

Prerequisites: Six units of upper division Latin American history and consent of instructor. Reading, discussion and reports on selected topics in Latin American history. May be repeated for a maximum of six units.

## 672. Seminar: The United States to 1900 (3) F,S Faculty

Prerequisites: Six units of upper division United States history. Selected topics in the political, economic, diplomatic, social, and intellectual history of the United States from the Colonial period to the Spanish-American War. May be repeated for a maximum of six units.
673. Seminar in Twentieth Century United States (3) F,S Faculty

Prerequisites: Six units of upper division United States history. The problems of modern America with reference to the special interests of the students in either domestic or international affairs since the Spanish-American War. May be repeated for a maximum of six units.
682. Seminar in East Asian History (3) F Faculty

Prerequisites: Six units of upper division Asian history or consent of instructor. Selected topics in East Asian history. May be repeated for a maximum of six units
695. Directed Readings (1-3) F,S Faculty

Prerequisite: Consent of instructor. Readings on an individual basis.
697. Directed Research (1-3) F,S Faculty

Prerequisite: Consent of instructor. Research on an individual basis.
698. Thesis (1-4) F,S Faculty

Planning, preparation and completion of non-curricular work in history for the master's degree.

## Home Economics

## Department Chair: Mrs. Mabel S. Moore

Emeriti: Zelpha Bates, Marion A. Wharton
Professors: Buckner, Dinerstein, Hoff, Kefgen, Lare, Samples.
Associate Professors: Dempster, Hamilton, Keenan, Moore, Rader, Rodriguez, Vanderwarf.
Assistant Professors: Baker, Kesler, Kim, McIntosh
Lecturer: Burnett.
Credential Adviser: Mrs. Mabel S. Moore

## Undergraduate Advisers:

Child and Family Development: Dr. Suad W. Kesler.
Dietetics and Food Administration: Dr. Mildred S. Rodriguez.
Education: Mrs. Mabel S. Moore
Environmental Factors: Mrs. Joan Hoff.
Family Finance, Management and Consumer Services:
Mrs. Arlene A. Hamilton
Textiles and Clothing: Ms. Mary F. Kefgen
Graduate Adviser: Mrs. Arlene A. Hamilton
Graduate Committee: Hamilton, Kesler, Rodriguez, Sam ples

The Department of Home Economics offers programs of study leading to the bachelor of arts, bachelor of science and master of arts degrees

Curricula are designed to provide a liberal education through study in the social and natural sciences, the humanities and the arts and to offer specialized instruction based on these disciplines which will lead to professional careers in home economics and related fields.

Programs of study cover various aspects of the field-child and family development; environmental factors: housing and interiors; family finance management and consumer services; food and nutrition; and textiles and clothing. Requirements for the teaching credential, eligibility for membership in the American Dietetic Association, preparation for careers in home economics extension service, business and home economics in community service may be met.

The department serves the needs of students completing majors in other fields who find that certain aspects of home economics are important to their professional objectives or personal interest

Students may select courses for a major in home economics with such specific career objectives as:
Home Economics Education. Requirements for teaching credentials include specific courses in education and student teaching.
Dietetics and Food Administration. Academic requirements for membership in the American Dietetic Association may be completed with specialization in (a) general dietetics, (b) clinical nutrition, (c) community nutrition and (d) food systems management. In fall, 1976, the American Dietetic Association approved he dertment program for meeting criteria under Plan IV. Requirements for membership also include completion of a qualifying internship, or an equivalent experience, approved by the American Dietetic Association.
Home Economics in Extension Service. A general home economics program of study is planned. Courses in business, speech, journalism, radio and television are desirable
Home Economics in Community Service. A general home economics program prepares students for career opportunities in health, welfare and community agencies.
Home Economics in Business. This emphasis prepares for representative types of business opportunities in advertising, consumer relations, equipment, family finance, foods, housing and interiors, journalism, merchandising, product development, research and textiles. Supporting courses in other departments may be selected to more fully prepare students for their own career objectives.

The master of arts degree in home economics provides the opportunity for students to:

1. Expand competence in the general field of home economics or pursue greater depth of academic study in one or two of the following areas: child and family development; environmental factors: housing and interiors; family finance management and consumer sciences; food and nutrition; and textiles and clothing.
2. Complete a master's degree and a teaching credential concurrently.
3. Complete a master's degree and specific requirements for American Dietetic Association membership concurrently.
4. Increase competence in subject matter areas in preparation for college teaching, administration and graduate study beyond the master's degree.

## Major in Home Economics for the Bachelor of Arts Degree (code 2-1020

Requirements for all majors include a minimum of 124 units for the bachelor of arts degree. In addition to general education requirements, a minimum of 40 units in home economics must be completed, 24 of which must be upper division. Students transferring from another college or university will receive transfer credit in required courses if the course is equivalent to the course at this University.
Lower Division: Biology 207 ; Chemistry 111A or 200, Economics 200, 201; English
100, 101; Psychology 100; Sociology 100 or 142 or Anthropology 120; Home Economics 141 or Art 100.
Upper Division: Economics 300 (if 200 and 201 were not taken); English 300 or 317 (if
English 101 was not taken); Home Economics 312, 321 and three units in 400 or 490 or 499
Additional required and elective courses for a specific program of study shall be selected in consultation with a fsculty adviser and with departmental approval. Recommended course sequence, advisement material and other information are available in the Home Economics Department office

## Bachelor of Science Degree in Dietetics and

## Food Administration (code 3-1018)

This curriculum is designed to enable students to prepare for professional careers in the field of food institutional food and in nutrition. Careers include food in business, nutrition programs in community and institutions and dietetics in the
allied health professions. This program will also enable students to prepare for graduate study required for college teaching and research in food and nutrition.
Program of Study: Students may elect a program in general dietetics, clinical nutrition, or community nutrition. Those interested in food service management should follow the program of study for food systems management. Copies of these programs of study are available in the Home Economics office. All programs fulfill academic requirements for membership in the American Dietetic Association. Students are advised to obtain information regarding the qualifying experiences required for ADA membership in addition to the academic courses included in the curriculum.

## Minimum Course Requirements:

Natural Sciences: A minimum of 20 units selected by advisement from Biology 207 or 216 and 342 ; Chemistry 111A and 327 or 200 and 300 ; Chemistry 448 or 441 A-B and 449; Microbiology 210; Physics 104.
Social Sciences: Anthropology 120 or Sociology 100; Economics 200 and 201 or 300; Psychology 100.
Supporting Professional Courses: English 100 and 101 or 300 or 317; Mathematics 102 or competency demonstrated by the Math Placement Test; Educational Psychology 305; Management 300 or 303; Quantitative Systems 240; Educational Psychology 419 or Health Science 300 or Quantitative Systems 310; Human Resources Management 361 or Psychology 381.
Home Economics: 232, 234, 235, 312, 321,331,332,333, 486 and three units in 400 or 490 or 499. A total of 40 units in home economics must be completed with no less than 24 units taken at the $300-400$ level. A total of 128 units must be completed for the bachelor of science degree.

## Cooperating Program with Merrill-Palmer Institute

The Home Economics Department offers a cooperating program with the MerrillPalmer Institute designed to expand the opportunities for home economics majors with a special interest in the study of the child and the family in the urban community.

Merrill-Palmer Institute is a private institution of established reputation which provides programs of specialized study in the behavioral sciences for students enrolled for degrees elsewhere. The ratio of faculty to students allows the student to pursue a highly individualized program.

The location of the institute in the inner city section of Detroit furnishes valuable experiences working with the families in the neighborhood. Such experiences would be particularly relevant for students planning to enter careers in teaching, social welfare, child welfare or guidance, family counseling, family life education, community nutrition or environmental factors.

The cooperating program is available for the fall semester or the full academic year to any selected second semester junior or first semester senior majoring in home economics. Minimum prerequisites to consider for selection are Home Economics 111, 312, 314 and a special interest in the study of the child and the family in the urban community.
Interested students should apply to the program coordinator, Mrs. Arlene Hamilton in the Home Economics Department.

## Child Development Program

Child Development in the Home Economics Department provides an academic and professional background for working with children and families. It offers an interdisciplinary foundation in several areas that influence the life and education of children. Field-work opportunities where students have direct experiences with children and families in the community are provided.

Specifically the program qualifies the students to apply for the Child Development Permit from the State of California which is required for working in and directing child development programs such as nursery schools, day care
centers, Head Start and preschool programs-campus child development centers and other children's programs in public and private agencies

The Certificate in Child Development may be earned in conjunction with the baccalaureate degree or teaching credential in home economics or related field. Courses offered for the certificate may be the same ones used to satisfy, where applicable, major, minor, credential, or general education requirements.

## Requirements for the Certificate in Child Development:

1. A bachelor's degree in home economics or related field.
2. 39 units distributed as follows:

Lower Division (9 units): Home Economics 111, 141, 232.
Upper Division (24 units): Home Economics 312, 311 or 314, 411, 412 or 413 $414,416,418,433$
Electives: A minimum of six units, selected in consultation with the coordinator.
Certification of successful completion of the Certificate in Child Development will be recommended by the coordinator.

Interested students should apply to Child and Family Development faculty, Home Economics Department.

## Master of Arts Degree with a Major in Home Economics (code 5-1020)

Each applicant should request a copy of the official transcript of all college course work be sent to the graduate adviser in the Home Economics Department in addition to the copies required by the Office of Admissions and Records.

## Prerequisites

1. A bachelor's degree with a major in home economics, or:
2. A bachelor's degree with a minimum of 24 units of upper division courses in home economics.
3. A minimum undergraduate 2.5 overall grade point average and 2.75 in home economics.
4. Students deficient in undergraduate preparation must take courses to remove these deficiencies at the discretion of the advisers after consultation with the student and faculty in the specified subject matter area. Students may request credit by examination for prerequisites completed more than seven years previously.

## Advancement to Candidacy

1. Satisfy the general University requirements for advancement to candidacy.
2. Registered for or have completed Home Economics 696.
3. Pass CSULB Advanced Writing Test or English 300 with at least a grade of B.
4. Approval of the department graduate adviser and Director of Graduate Studies and Research, School of Applied Arts and Sciences.

## Requirements for the Master of Arts

1. Completion of 30 units of approved upper division and graduate courses with a minimum of 21 units in home economics.
2. At least 15 units of $500 / 600$ level courses in home economics including Home Economics 696 (3units).
3. A thesis, Home Economics 698, or a comprehensive examination.
4. An approved course in statistics.

## Lower Division

## 100. Introduction to Home Economics (1) F,S Rader

History, development and professional career opportunities in the field of home economics. Open to lower division students only or consent of instructor. (Lecture 1 hour.)

## Upper Division

*400. Internship in Home Economics (3) F,S Hamilton, Samples
Prerequisite: Upper division standing. Field experience in which the student assumes a self-directed, responsible role in an agency, business or other community setting with professional supervision, consultation and evaluation.
*486. Teaching-Learning Strategies in Home Economics (2) F,S Moore
Utilize the principles and concepts of each area of home economics in developing a variety of teaching-learning experiences appropriate for individuals or groups in a community setting. (Laboratory 4 hours.)
*487. Curriculum and Instruction in Consumer Education
Programs (3) F Rader
Prerequisite: Home Economics 323 or consent of instructor. Development of curriculum in consumer education programs for school and community. Current resources, effective uses of media and methods for instruction appropriate for various age levels. Coordination of offerings with other school and community agencies. (Lecture-discussion 3 hours.)
*488. Career Education: Developing Occupational Programs in Home Economics (3) S Rader

Prerequisite: Ed.S.S. 450 H or teaching experience or consent of instructor. Utilizing knowledge and skills derived from the field of home economics as a basis for offering occupational opportunities for youth and adult through planning programs in school and community. (Lecture, discussion 3 hours.)
*490. Directed Studies (1-3) F, S Samples
Prerequisites: Upper division standing, consent of instructor. Independent study under the supervision of a faculty member. Exploration and experience in areas which are not a part of any regular course. May be repeated once for credit with consent of department.
*493. Contemporary Issues in Home Economics (1-3) F,S Rader
Prerequisite: Consent of instructor. Current contemporary issues in the various areas of home economics selected for exploration and development. May be repeated for a maximum of six units. Topics will be announced in the Schedule of Classes.
499. Special Topics (1-3) F,S Samples

Group investigation of selected topics. Topics to be announced in the Schedule of Classes. May be repeated for credit to a maximum of nine units

## Child and Family Development

## Lower Division

## 111. The Preschool Child (2) F,S Dempster

Prerequisites: Psychology 100, Sociology 100 or 142 or Anthropology 120 (may be taken concurrently), or equivalent. Behavior and development in early childhood, with emphasis on the interaction of parents, children and teachers. (Lecture discussion 2 hours.)

111L. Laboratory in Preschool Child (1) F,S Dempster
Prerequisite or concurrent registration in Home Economics 111. Laboratory in which the concepts underlying behavior and development in early childhood are applied through experience with children. (Laboratory 3 hours.)

## Upper Division

## 311. Prenatal Development and Infancy (3) S Faculty

Prerequisites: Upper division standing, Biology 207. Human development from conception through prenatal development, childbirth, the neonatal period, infancy and toddlerhood with emphasis on the various aspects of development and the environmental social factors essential for human growth.

## 312. Family and Personal Development (3) F,S Kesler

Prerequisites: Psychology 100, Sociology 100 or 142, or Anthropology 120 or consent of instructor. Interdisciplinary introduction to the concepts underlying contemporary American family life and the influence of social and cultural conditions on human development. (Lecture-discussion 3 hours.)

## 314. The Older Child (3) F Faculty

Prerequisite: One of the following or consent of instructor: Home Economics 111, Educational Psychology 301 or Psychology 361 or Human Development 307 Behavior and development in middle and late childhood and early adolescence, with emphasis on individual and cultural differences. (Lecture 3 hours.)

## 411. Individual Child Study and Guidance (3) F,S Kesler

Prerequisite: Upper division standing, Home Economics 311 or 314, or Educational Psychology 301 or Human Development 307 or consent of instructor Analysis and interpretation of theory, research, trends and techniques for the study and guidance of the individual child in a family and community setting. (Lecture discussion 3 hours.)

## 412. Family Interaction (3) F,S Dempster

Prerequisites: Upper division standing, Home Economics 312, or consent of instructor. Dynamics of interaction and communication in interpersonal relationships throughout the family life cycle. Experience with a variety of communication skills in small group settings. (Lecture 3 hours.)

## *413. The Family in the Community (3) F,S Faculty

Prerequisites: Upper division standing, Home Economics 312, or consent of instructor. Study of cultural varieties and the needs of the contemporary American family in an urban community, analysis of current issues and problems, identification of and experience with community resources and agencies.

## 414. Field Work with Preschool Children (3) F,S Faculty

Prerequisites: Upper division standing, Home Economics 411 and consent of instructor. Participation in a teaching-learning situation with preschool children, developing skills of observation and assessment of child behavior, planning activities and organization and management of a preschool program.
416. Directing Children's Programs (3) $S$ Faculty

Prerequisite: Home Economics 414. Minimum and recommended standards and laws pertaining to housing, equipment, play space, adult-child ratio, health supervision and meal service for children's programs. Selection and supervision of personnel, program planning and directing, record keeping. Field experience. (Lecture-discussion 3hours.)
418. Working with Parents (3) S Faculty

Prerequisites: Home Economics 413 and one other 400 -level course in home economics and consent of instructor. Principles and techniques for working with parents in community and school programs. Assessment of needs and development of programs for adults in a variety of social and cultural settings.
*419. Family Life Education (2-3) F Faculty
Prerequisites: Home Economics 412 and 413 or consent of instructor. Concepts of family development and interaction with special emphasis on leadership opportunities for professional persons. Not open to students with credit in Sociology 473.

Environmental Factors: Housing and Interiors
Lower Division
141. Techniques in Applied Arts (3) F,S Dinerstein

Basic concepts and techniques of applied art including media, presentation methods and visual communication. (Lecture-laboratory 6 hours.)
142. Housing Design (3) F,S Dinerstein

Prerequisites: Home Economics 141,241 and Industrial Arts 141 or consent of instructor. Prerequisites may be taken concurrently. Functional and aesthetic factors of housing as related to family needs. (Lecture-laboratory 6 hours.)
143. Color: Theory and Application (2) F,S Dinerstein, Hoff Essential theories of color perception. Applied problems dealing with color interaction phenomena, effects and function. (Laboratory 4 hours.)
241. Contemporary Housing and Interiors (3) F,S Dinerstein

Planning the total life space environment. Shelter and interior concepts from a nontechnical basis. (Lecture-discussion 3 hours.)

## Upper Division

340. History of Applied Arts (3) S Hoff

Study of the history of the applied arts with emphasis on the interiors furnishings and structures as they express needs and values of civilization in history. Critical appraisal of aesthetic and functional qualities of the environment. (Lecture-discussion 3 hours.)
342. Environmental Factors in Housing and Communities (3) F,S Hoff

Problems of developing effective housing and communities for families in various cultural situations. Sociological, financial, psychological and legislative factors are investigated. (Lecture-discussion 3hours.)
344A-B. Interiors $(3,3)$ F,S Hoff
Prerequisites: Home Economics 142, 143; Industrial Education 347, Art 224 Design principles as applied to interiors: analysis of materials and elements used in environmental planning. (Lecture 2 hours, laboratory 3 hours.)
*440. Environmental Factors and the Urban Family (3) F Dinerstein
Prerequisite: Home Economics 342 or consent of instructor. Critical analysis of the urban family's environment including aspects of shelter, community and the city. (Lecture-discussion 3 hours.)
*441. Advanced Interiors (3) S Hoff
Prerequisites: Home Economics 340, 344, 353, Art 271, Industrial Arts 442. Art 271 and Industrial Arts 442 may be taken concurrently. Advanced design as applied to interiors; analysis of materials and elements used in environmental planning. (Lecture-laboratory 5 hours.)

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442. Housing Policies: Public and Private (3) $S$ Hoff

Prerequisite: Home Economics 342 or consent of instructor. Federal, state and local legislation and policies concerning housing, urban renewal financing and city planning. Analysis of the housing industry and its influence on the consumer market. (Lecture 2 hours, field work 3 hours.)
*444. World Housing (3) F Dinerstein
Prerequisite: Home Economics 342 or consent of instructor. Theories and solutions of family housing in urban and rural areas throughout the world. (Lecture
3 hours.)

## Family Finance, Management and Consumer Sciences

## Upper Division

## 321. Home Management (3) F, S Keenan

Prerequisite: Upper division standing. Application of social, economic and解 family values, goals, philosophy and socioeconomic conditions upon those decisions. (Lecture, discussion 3 hours.)

## 323. Personal and Family Financial Management (3) F,S Buckner

Prerequisite: Upper division standing. A functional approach to personal finance including budget systems, consumer credit, insurance, debt collection system, status obligation, accumulating reserves. Applicable for personal and professional use. (Lecture, discussion 3 hours.)

## 327. Household Equipment Technology (3) F,S Hamilton

Prerequisite: Upper division standing. Principles and consumer information needed for the selection, care and operation of equipment for the home environment. Application of basic physical science principles. (Lecture 2 hours,
laboratory 3 hours.) laboratory 3 hours.)

## *421. Management of Family Resources (3) F Keenan

Prerequisite: Home Economics 321. Examination of parameters for efficient management of human resources, non-human energy resources and related technology available to the family. (Lecture 3 hours.)

## 423. Home Management Project (3) F,S Faculty

Prerequisites: Home Economics 321,323, 413 or equivalent. Analysis of family goals and values in a rapidly changing culture; principles and concepts of management developed through field work with families. (Lecture 2 hours, field work 3 hours.)
*424. Independent Living for the Handicapped and Elderly (3) F,S Hamilton Prerequisite: Home Economics 321 or consent of instructor. Home management concepts as related to the physically disabled and the elderly in the near environment. Rehabilitation procedures for independent living. Emphasis on research findings in regards to functioning in the home and family. (Lecturediscussion 3 hours.)

## *426. Family Financial Problems (3) F,S Buckner

Prerequisite: Home Economics 323 or consent of instructor. Theory and practice in the diagnosis of family financial crises; selecting alternative solutions; constructing practical methods for the prevention of family financial problems.
(Lecture 2 hours, laboratory 3 hours.)
*427. Advanced Household Equipment (3) S Hamilton
Prerequisite: Home Economics 327. Design and performance of the major home Prequisite: Home Economics 327. Design and performance of the major home appliances, changes in supply and consumption of energy sources; government regulations affecting household equipment materials, design, safety and marketing strategies. (Lecture 3 hours.)

## Food and Nutrition

## Lower Division

232. Nutrition and You (3) F,S Baker

Essential nutrients, their physiological functions and human needs during the life cycle, food sources as applied to selection of an adequate dietary; problems encountered in providing food to meet nutritional needs; food additives and consumer protection. (Lecture-discussion 3 hours.)

## 234. Orientation to Dietetics and Food Administration (2) F,S McIntosh

Role of the professional in dietetics and food administration; orientation to career opportunities in food, nutrition and food service systems management; personnel and physical facilities, including equipment, in health care and mass feeding programs. Field trips required. (Lecture 1 hour, laboratory 3 hours.)

## 235. Principles of Food Preparation (3) F,S Vanderwarf

Prerequisite: Chemistry 111A or 200. Application of scientific principles in the preparation of selected food products, with emphasis on the physical and chemical properties of food: methods and techniques of food preparation; factors that contribute to quality of food products; judging quality of prepared foods. (Lecture 2 hours, laboratory 3 hours.)

## Upper Division

331. Fundamentals of Human Nutrition (3) F,S Rodriguez

Prerequisites: Home Economics 232; Biology 207 or 208, 209; Chemistry 300 or 327; or equivalent. Nutritional needs with the emphasis on the physiological and chemical foundation for these needs; factors influencing nutrient needs. (Lecturediscussion 3 hours.)
332. Food Science (3) F,S Kim

Prerequisites: Chemistry 300 or 327 , Home Economics 235 , or equivalents. Composition and structure of foods; chemical changes in foods that affect their color, flavor, texture, aroma and nutritive quality during processing and preparation; techniques for food preservation. (Lecture 2 hours, laboratory 3 hours.)

## 333. Meal Management (3) F,S Faculty

Prerequisites: Home Economics 232, 235; 321. Factors which influence meal plans; food selection, preparation and service in relation to management of time, energy and money. (Lecture 2 hours, laboratory 3 hours.)

## 335. Quantity Food Production (3) F,S Vanderwarf

Prerequisites: Home Economics 234, 333. Principles of menu planning as applied to institutional food service; methods of producing food in quantity using institutional equipment; cost control. Experience in food service operations, such as hospitals, college residence hall and school lunch volume food production centers. (Lecture 2 hours, laboratory 3 hours.)

## 337. Food Service Systems Management (3) S Faculty

Prerequisite: Home Economics 335. Principles of organization and management, cost control, personnel management and administration in institutional food services. (Lecture 3 hours.)
430. Nutrition and Health (3) F,S Baker
evaluation of current trends in food and Intensive study of nutrition including education, elementary and secondary education. Designed for students in health students. Not open to home economics d acation, social service and other elective
. (Lecture 3 hours.)
Prerequisites: (3) F,S Kim
Application of scientific methods for 327 , Home Economics 332 , or equivalents Objective, physical, chemical and Independent laboratory problems. (Lecture 2 hours, laboratory 3 food properties.

## P3. Nutrition of Infants and Children (3) F Baker <br> Prerequisite: Home Economics

specifically related to the development of the er equivalent. Nutritional needs through adolescence. Methods of ent of the embryo, the infant and the child evidences of malnutrition. (Lecture 3 hours.) nutritional status of children and
434. Cost Control in Food Service Operations (3) $S$ Faculty
management, including control of food, labor, consent of instructor. Financial costs; principles and procedures used, labor, equipment and other operational operations; use of specifications; factors affecting qurchasing food for food service development, utilization and maintenans affecting quality; inventorymanagement; purchasing problems of food servicenance of physical facilities; analysis of hours.)

## 436. Advanced Nutrition (3) F,S McIntosh

concurrently). Metabolism of protein 331,Chemistry 448, 449 (may be taken interrelationships of nutrients; procedures requirements of individuals. (Lecture 3 hours.)

## *436L. Laboratory in Advanced Nutrition (1) F,S Rodriguez

provide training in the basic techniques (may be taken concurrently). Designed to procedures for instructing patients and of assessing nutritional status. Includes dietary, anthropometric, clinical and biochemical data collecting and interpreting
. (Laboratory 3 hours.)
437. Cultural Aspects of Food and Nutrition (3) S Faculty
Prerequisites: Home Economics

Anthropology 120 or equivalents. Cross, Psychology 100, Sociology 100 or Factors such as history, religion, food sources study of food and nutrition. considered. (Lecture-discussion 3hours.)

## *438. Diet Therapy (3) F Faculty

Prerequisite: Home Economics 43
Metabolic changes in specific pathological condition to therapeutic nutrition. for treatment. (Lecture 3hours.)

## *461. Community Nutrition (3) S Baker

and factors responsible for the nutrient intake of all peomics 436. Nutritional status techniques in community nutrition education. (Lecture all people. Communication
462. Recent

Prerequisites: Upper division Nutrition (3) F Faculty
of instructor. Analysis of recent developments Economics 232 or 331 or consent Limited to students requiring information and current research in nutrition applications in nutrition. (Lecture 3 hours.)
*491. Directed Studies in Food and Nutrition (1-3) F, S Faculty
Prerequisites: 12 units in food and nutrition. Independent study under the supervision of a faculty member. Readings in areas of interest to student and faculty which are not a part of any regular course. Written report is required. May be repeated once for credit with consent of instructor.

## Textiles and Clothing

## Lower Division

251. Principles of Apparel Selection (3) F,S Kefgen

Apparel selection for the individual and family based upon aesthetic guidelines, cultural influences and consumer needs. (Lecture, discussion 3 hours.)
254. Fundamentals of Clothing Design (2) F, S Kefgen, Lare

Corequisite: Home Economics 254L unless waived by examination. Analysis of the interrelationship of garment design and clothing construction. (Lecture 2 hours.)

254L. Laboratory in Clothing Design (1) F,S Kefgen, Lare
Corequisite: Home Economics 254 unless waived by examination. Application of theories and methods of clothing design to construction. (Laboratory 3 hours.)

## Upper Division

353. Textiles (3) F,S Lare

Prerequisite: Chemistry 111A or 200 or consent of instructor. Interrelationship of fiber, yarn structure, fabric geometry and finishing treatments to the textile's appearance, comfort, durability and maintenance. (Lecture 3 hours.)
354. Analysis of Tailoring Processes (3) $F$ Kefgen

Prerequisite: Home Economics 254 or equivalent. Analysis of processes applied to construction of suits and coats. (Lecture 2 hours, laboratory 3 hours.)
357. Apparel Design: Flat Pattern (3) F Lare

Prerequisite: Home Economics 254 or equivalent. Exploration of the total design concept as it applies to pattern manipulation. (Lecture-discussion 2 hours, laboratory 3 hours.)
*450. Cultural Bases of Textiles and Apparel Design (3) S Kefgen
Prerequisites: Home Economics 353, Anthropology 120 or Sociology 100 or 142 or consent of instructor. Factors influencing design and techniques of textile and apparel production in societies that create and utilize them. Symbolism of indigenous and adapted textile and clothing designs as a communicative device for expressing social and cultural values. (Lecture-discussion 3 hours.)
*451. Fashion Analysis (3) F Faculty
Prerequisites: Home Economics 251 and 353. Factors affecting fashion trends patterns of clothing consumption, consumer acceptance or rejection of European and American fashions. Organization and structure of the fashion industry. (Lecture 3 hours.)
*452. Apparel Design: Draping (3) S Lare
Prerequisite: Home Economics 357 or consent of instructor Exploration of the total design concept as it applies to fabric manipulation. (Lecture-discussion 2 hours, laboratory 3 hours.)
*453. Advanced Textiles (3) S Lar
Prerequisites: Home Economics 353, Physics 104. Chemical and physical structure of fibers and finishes and physical structure of yarns and fabrics in relation to serviceability. (Lecture-discussion 2 hours, laboratory 3 hours.)
454. Experimental Clothing (3) $S$ Kefgen

Prerequisites: Home Economics 254, 353 or consent of instructor. Experimental approach to apparel construction; evaluation of appropriate construction techniques as related to fabric geometry, garment appearance and serviceability.
(Lecture 2 hours, laboratory 3 hours.)
*458. Theories and Issues in Textiles and Clothing (1-3) F,S Faculty
Prerequisites: Six upper division units in textiles and clothing or consent of development. May berrent interest in textiles and clothing selected for intensive development. May be repeated for a maximum of six units. Topics will be announced in the Schedule of Classes.
492. Directed Studies in Textiles and Clothing (1-3) F, S Faculty

Prerequisite: Senior standing. Independent study under the supervision of a faculty member. Written report is required. May be repeated for credit with consent

## Graduate Division

500. Internship in Home Economics (3) F,S Hamilton

Prerequisites: Graduate standing and consent of instructor. Field experience in which student assumes a self-directed, responsible role in an agency, business or other community setting

## 511. Family Development (3) $S$ Kesler

Prerequisite: Home Economics 412 or 413 or consent of instructor. Theoretical approaches to the study of the family; analysis of the process of interaction etween the individual, the family and society with emphasis on current issues

## 515. Perspectives in Human Development (3) $F$ Kesler

Prerequisite: Home Economics 411 or consent of instructor. Theory, trends and in the family and community.
521. Decision Making In Home Management (3) $S$ Keenan

Psychology 351 or Sociology 335. Depth course in the scient or family finance, as it can be applied to management in the home in the science of decision making

## 523. Consumer Protection (3) F Buckner

Prerequisite: 400 -level course in home management or family finance or consen of instructor. Concepts of consumer protection with analysis of myriad resources available for individuals and families with financial problems.

530A-B. Special Topics in Nutrition (3,3) F,S McIntosh, Rodriguez
Prerequisites: Home Economics 436, approved course in statistics (may be taken concurrently). Study of selected topics in nutrition, including metabolism of (a) carbohydrates, lipids and proteins and (b) minerals, and vitamins. Area of study will be announced in the Schedule of Classes.

## 531. Nutrition Programs for School and Community (3) F Rodriguez

Prerequisite: Home Economics 436 or $462 ; 486$ or EDSS 450 H . Program evelopment, resources and evaluation with emphasis on interdisciplinary nutrition.

## 532. Advanced Experimental Foods (3) $S$ Kim

Prerequisites: Home Economics 432; approved course in statistics. Application of the scientific method in the study and design of experimental food problems Research work on individual basis. (Lecture 2 hours, laboratory 3 hours.)
541. Housing and Human Settlements (3) F Dinerstein

Prerequisite: Home Economics 440 or consent of instructor. Considerations of shelter concepts, environmental factors, urban developments and contemporary proposals.

## 552. Garment Design (3) $F$ Lare

Prerequisite: Home Economics 452 or consent of instructor. Integration of problems encountered in garment design, fabric manipulation and clothing construction. The technical application of engineering principles involving pattern, fabric and the human form. Student research in design such as clothing for the handicapped, aged and those on limited budgets. (Lecture 2 hours, laboratory hours.)
559. Apparel Behavior (3) F Lare

Prerequisites: Home Economics 451, Economics 300.Psychological, sociologica and economic influences on the selection of individual and family clothing.
561. Curriculum Development in Home Economics (3) $F$ Rader

Prerequisite: Field experience in home economics or a related area. Current philosophies and principles basic in the analysis and organization of curricular programs and materials.
563. Evaluation in Home Economics (3) F,S Samples

Prerequisite: Home Economics 696 or Educational Psychology 302 or 305 or consent of instructor. Principles, design and methods of evaluation for use by professional home economists. Selection and development of instrumentation for data collection and interpretation. Methods of reporting for purposes of accountability.
590. Independent Study (1-3) F,S Faculty

Prerequisite: Home Economics 400 -level course in area of study. Varied learning activities utilized to achieve competency related to Home Economics not offered in reaular courses. Written report required
605. Seminar in Administration of Home Economics (3) $F$ Samples Prerequisite: Home Economics 696 or consent of instructor.
615. Seminar in Child and Family Development (3) S Kesler Prerequisites: Home Economics 511 or 515,696 or consent of instructor.

625A-B. Seminar in Family Finance and Home Management ( 3,3 ) S Buckner, Hamilton
Prerequisites: A: Family Finance: Home Economics 523, 696. B: Home Management: Home Economics 521, 696. Area of study will be announced in Schedule of Classes.

635A-B. Seminar in Food and Nutrition $(3,3)$ S Kim, Rodriguez
Prerequisites: A: Food: Home Economics 532, 696. B: Nutrition: Home Economics 530, 696. Area of study will be announced in Schedule of Classes.

655A-B. Seminar in Clothing and Textiles $(3,3)$ F Kefgen, Lare
A: Clothing. Prerequisites: Home Economics 450, 559, 696. B: Textiles. Prerequisites: Home Economics 450, 453, 696. Area of study will be announced in the Schedule of Classes.
65. Seminar in Home Economics (3) F,S Samples Prerequisites: Home Economics 696, consent of instructor

## 96. Research Methods (3) F,S Samples

Prerequisite: Advanced Writing Test. Problems in home economics with emphasis on the methods of research and use of the library. Required of all master's degree candidates in home economics

## 697. Directed Research (1-3) F,S Faculty

Prerequisites: Advancement to candidacy, Home Economics 500 level course in area of study and 696. Independent study under the guidance of a faculty member.

## 698. Thesis (1-4) F,S Faculty

Prerequisites: Advancement to candidacy, approval of department graduate committee. Planning, preparation and completion of a thesis related to the home
economics field.

## General Honors Program

Director: Dr. Lawrence S. Lerner.
Students who wish to satisfy the University requirement in general education by taking a sequentially organized and integrated program of courses in the liberal arts and sciences are encouraged to apply for admission to the General Honors Program.

The program provides academically-qualified students with a comprehensive, in depth approach to inquiry in the many fields of human knowledge. The program makes a systematic attack on methods of inquiry, on whetting the skills of articulating and communicating findings, and on developing the faculty of criticism. The Honors curriculum is carefully devised to shed light on the unity as well as the diversity of knowledge. Toward this end the courses are closely interrelated with one another. The sequence of courses is cumulative, with each successive course building on its predecessors. A chief aim is the conceptua mastery of the methods and ends of inquiry rather than the more or less random accumulation of information.

The General Honors Program is based upon the belief that the crucial ingredients of knowledge are understandings and skills of judgement obtainable only through sustained, active involvement in the traditional fields of inquiry. In the light of this background and using these skills, one can perceive and define significant new problems arising in new situations, in terms that make possible a fruitful attack on them. One can assess new information, evaluate it in the context of what is already known and thus make it useful. Indeed, a hallmark of the educated person is his or her ability to perceive and tackle a significant problem in a totally unfamiliar area, with a minimum of detailed guidance

In summary, the General Honors Program is devoted to the pursuit of this dynamic system of knowledge. This pursuit is carried on in a community of scholars-faculty and students devoted to the continual reforging of the heritage of the past in terms appropriate to the present and the future

In no semester do Honors classes constitute the entirety of the full-time student's program; further classes are selected from the regular curriculum in one or another of the major fields of study. Honors is not a major; however, the breadth of its courses and the concentration of Honors classes in the lower division should be of value to the student who has not yet decided on one. The University awards a certificate to those who successfully complete the Honors Thesis
The basic program consists of 14 courses (totalling 40 units) which satisfy the General Education requirement, followed by the opportunity to undertake independent study toward the Thesis under tutorial supervision (Honors 496 and
498). The courses must be taken in the order indicated. Exceptions to this rule are as follows: 1) Students may take Honors 140 and Honors 170 whenever they choose; and 2) Students may be exempted from some required courses on an individual basis.

The program offers other courses (Honors 290, 490, and 499) enabling students to extend their Honors experience. However, such courses are elective and may not be regularly available.

The freshman, sophomore, and junior level courses, taken together with the intensive insight gained by the student in pursuit of his or her major, prepare the candidate for the Honors Certificate to undertake the Tutorial and the thesis. The subject of the thesis is often chosen within, or is related to, the student's major. The Thesis is intended to be a modest but genuine contribution to human knowledge. It is of value both as a preparation for advanced study and as a demonstration that the student has acquired the intellectual confidence and the independence of mind that characterize the maturely-educated person.

While the program is directed primarily at entering freshmen, students are invited to apply for it at any time during their college careers. However, in order for the Director to approve their admission to the program in-course, it is likely that students will have to make prior adjustments in their programs. The requirements for admission to the program are evidence of earlier academic distinction, better-than-average literacy, the willingness both to read and to write extensively, and a strong intellectual motivation. The most important requirement in qualifying for this opportunity is an ardent desire to do so.
Students are free to withdraw from the program at any time, without loss of General Education credits they have already earned in its classes. The need of enrollees to commit themselves to the full experience is emphasized. Both the Program's need to plan and the accomplishment of the aims of the curriculum require a relative stability in the group population.

Requirements for the Certificate in General Honors:

1. Completion of Honors 101A-B, 131A-B, 140, 170, 195 (2units), 201A-B, 252A-B and 301 ( 6 units).
2. Completion of Honors 496 and 498 with a grade of $B$ or better.

## Lower Division

101A-B. Studies in Communication (3,3) F,S
Corequisite: Honors 131A-B, Honors 195 (both semesters). Introduction to basic written, oral, logical, and mathematical skills, and to the elements of communications theory. Emphasis on expository writing and analysis, symbolic logic, and the foundations of quantitative systems.

## 131A-B. Studies in Social Science $(3,3)$ F, S

Corequisite: Honors 101A-B, Honors 195 (both semesters). Introduction to the concepts and methods of the social sciences through the study of selected topics and problems.
140. Studies in American Political Institutions (3) $F$

American political institutions and processes at the federal, state and local levels. Executive, legislative and judicial interaction will be analyzed, together with informal participants in policy-making such as parties, media and interest groups. Emphasis of individual sections will vary with the interests and particular expertise of the faculty.

## 170. Studies in American History (3) S

A consideration of major issues and topics in the development of American society, with an emphasis upon the historical background of contemporary concerns.
195. Academic Perspectives Colloquium (1) $F, S$

Corequisite: Honors 101A-B. Honors 131A-B. A lecture series introducing current ssues and research in the academic disciplines and allied areas. Must be taken twice to satisfy the requirements for the General Honors Certificate. Repeatable with program permission to a maximum of three units. This course is the only Honors Program course which is open to general enrollment. It is recommended to students at large who seek a one-unit course.

201A. Studies in the Fine Arts (3) F
Prerequisite: Honors 101A-B, Honors 131A-B, and Honors 195 (2 units). Corequisite: Honors 252A. Exploration of that part of the cultural heritage of modern society comprising the non-verbal arts.

201B. Studies in Literature (3) S
Prerequisite: Honors 201A. Corequisite: Honors 252B. Exploration of that part of the cultural heritage of modern society that is represented by creative literature and drama. Studies the means by which the creative artist has used the written word to elucidate and illuminate the human condition.

252A-B. Studies in Natural Science $(4,4) \quad$ F, S
Prerequisite: Honors 101A-B, Honors 131A-B, and Honors 195 (2 units). Corequisite: Honors 201A-B. Intensive study of the nature, substance and significance of the processes of scientific thought and operation. Emphasis will be placed on the basic sciences of physics, chemistry and biology; on the essential unity of science; and on the cosmological, geological, chemical and biological origins of the world as we know it. (Lecture 3 hours, laboratory 3 hours.)
290. Special Topics (1-3) F,S

Topics of current interest involving multi-disciplinary studies, and aimed at intensifying the honors experience. May be repeated with different topics to a maximum of six units with the consent of the director.

## Upper Division

301. Junior Colloquium (3) $F, S$

Prerequisite: Honors 201B and Honors 252B. Studies of selected interdisciplinary topics, problems or issues with a view toward integration of the areas of study involved in lower division courses. The course will usually concentrate in the Fall semester on the theory of inquiry or the philosophy of science, and in the Spring semester on conceptual criticism. Must be taken twice to qualify for the Honors Certificate.

## 490. Special Topics (1-3) F,S Faculty

Topics of current interest in multi-disciplinary studies selected for intensive development. May be repeated with different topics to a maximum of six units with consent of director. Topics to be announced in the Schedule of Classes.

490L. Special Topics Laboratory (1-2) F,S Faculty
Laboratory in topics of current interest in multi-disciplinary studies selected for intensive development. May be repeated with different topics to a maximum of four units with consent of director. Topics to be announced in the Schedule of Classes.

## 496. Honors Tutorial (1-3) F,S

Prerequisite: Honors 301 or consent of the director. Supervision of independent study, involving an individually contracted project, by some member of the faculty. Work in the course is normally a preparation for the honors thesis. May be repeated with the consent of the director.
498. Honors Thesis (3) F,S

An individual project, construction, or presentation, generally of a multidisciplinary nature, aiming at a modest but significant contribution to human knowledge or culture. To be carried out under the supervision of a faculty member.

## 499. Directed Studies (1-3) F,S

Individual work done outside the regular honors curriculum, approved and supervised by a faculty member. Repeatable with program permission.

Additional information regarding the Honors Program, and applications for admission, may be obtained from the director of the program.

## Human Development

## Director: Dr. Norma Bernstein-Tarrow

Professors: Bernstein-Tarrow (Elementary Education), Fornia (Physical Education), Kluss (Biology), Orpet (Educational Psychology), P. Peterson (Psychology)
Associate Professors: Bates (Anthropology), Dempster (Home Economics), Nummedal (Psychology).
Assistant Professors: Kesler (Home Economics), Rebok (Psychology).

The human development major is designed to provide students with a fundamental interdisciplinary understanding of human growth and development throughout the life cycle. The program of study concentrates on the psychological, sociocultural and biological dimensions of human development and on the underlying processes and structures which support that development. A variety of experiences in community agencies and/or educational settings enables students to integrate knowledge with career goals.

The curriculum is flexible and designed to help students meet a variety of educational needs. A large selection of courses enables students to choose a program of study appropriate to particular interests and goals. Courses will be selected in consultation with the program adviser, a formal program filed and modifications permitted only upon approval of the adviser.

## Major in Human Development for the Bachelor of Arts Degree (code 2-8014)

Lower Division: Psychology 100, Anthropology 120 or Sociology 100, Biology 107 or 207.

Upper Division: A minimum of 36 units including (a) a 15 -unit required core: Human Development 307,357,401, 420 and 470 ; and (b) 21 units with a minimum of three units selected from clusters 1,2,4 and 5, and three units from each of two areas (six units total) in cluster 3. Clusters are the following: (1) Biological Foundations, (2) Age Specific Areas, (3) Topical Areas, (4) Family and Community, (5) Hum an Development and Cultural Variations.
A curriculum brochure listing specific courses within each cluster may be obtained from the Human Development office.
Students may pursue a concentration in human development within the Liberal Studies degree program
307. Prenatal Development through Early Adolescence (3) F Faculty Prerequisites: Psychology 100, Biology 107 or 207, Anthropology 120 or Sociology 100, junior standing, consent of instructor. Biological, psychological and sociocultural aspects in the maturation of the individual from conception through early adolescence will be considered. Relevant topics and theoretical issues will be treated in an interdisciplinary manner under leadership of experts in the fields involved. Not open to students with credit in Nursing 307.
357. Development from Adolescence through Aging (3) $S$ Faculty

Prerequisite: Human Development 307. Biological, psychological and sociocultural aspects in the maturation of the individual from late adolescence or youth until death will be considered. Relevant topics and theoretical issues will be treated in an interdisciplinary manner under the leadership of experts in the fields involved. Not open to students with credit in Nursing 357.
401. Cultural Influences on Human Development (3) F Faculty

Prerequisites: Human Development 307,357. Study of how an individual's ethnic membership relates to various aspects of growth and development; the effects of culturally related influences on total development. Discussion and selected observations of individuals from diverse cultural backgrounds. (Lecture-discussion 3hours.)

## 420. Tests, Measurements and Evaluations (3) F,S Orpet

Prerequisite: Ed. Psych. 419. Determination, meaning and use of fundamental statistical concepts applied to problems of measurement and evaluation; construction, interpretation and use of standardized and teacher-made tests. Same course as Ed. Psych. 420.

## 470. Seminar/Practicum (3) $S$ Faculty

Prerequisites: Human Development 307, 357; Human Development/Educational Psychology 420, and consent of instructor. Advanced considerations of selected topics in human development. Supervised participation with individuals in community agencies and/or educational settings. Practicum arranged according to individual experience and career goals; supplemented by seminar discussion and readings. (Seminar 2 hours, practicum 3hours.)

## Industrial Education

## Department Chair: Dr. Leonard Torres.

## Emeritus: Ernest J. Rawson.

Professors: Dean, Farr, Genevro, Grainge, Lathrop, Nicholson, Patcha, Powell, Ryan, Schmidt, D. Smith, E. Smith, Torres, Trout, Webster, Wittich.
Associate Professors: Brandstatt, Church, Gietl, Heineman, Kunst, Macon, Martin, Quinones, Randall, Routh.

## Assistant Professor: Hironaka.

## Credential Adviser: Dr. James Ryan.

Undergraduate Advisers: Dr. Leonard Torres, Dr. James E. Ryan.

## Graduate Adviser: Dr. Paul E. Powell

Graduate Committee: Kunst, Powell, Ryan, Torres, Webster.
Industrial education is a study of industry primarily designed to prepare elementary, secondary and community college teachers who will help students gain an insight and understanding of industry and its place in the American culture discover and develop attitudes and skills useful for trades, professions and activities requiring technical information and skills.

The industrial education curriculum is designed to meet the needs of the following groups of students: (1) those preparing to enter the teaching profession in the field of industrial arts who need the teaching credential; (2) those preparing for certification as manual arts therapists; (3) those who are teaching industrial arts and who desire to further their professional growth; (4) those who desire to broaden their experiences but who do not plan on entering the teaching profession; (5) those who are vocationally qualified and who desire to qualify to teach industrial arts subjects in their special areas; (6) those who qualify for the standard designated subjects credential with specialization in vocational trade and technical teaching and who wish to teach occupational subjects in secondary schools, ROP and ROC centers, community colleges and adult education.

Courses in industrial education also are designed for students completing majors in other subject fields and wishing to take elective units in this area.

Course offerings in industrial education have been selected so that the student can qualify for (1) technical training leading to the baccalaureate degree; (2) a teaching major or minor in industrial arts for the teaching credential; (3) the standard designated subjects credential with specialization in vocational trade and technical teaching: (4) the master of arts degree with a major in industrial arts; (5) a certificate in industrial plastics processing and design in association with the School of Engineering; (6) a certificate in automotive supervision and (7) a certificate in graphic arts supervision.

Graduate work in industrial education provides the opportunity for men and women to: (1) expand and increase competencies in one or more areas of specialization; (2) develop maturity of thought and attitude toward their profession: (3) gain insights into problems of professional leadership and knowledge to assume positions of leadership; (4) obtain the necessary understandings to be able to engage in research resulting in contributions of knowledge in an atmosphere of freedom of inquiry; and (5) engage in an interchange of ideas between faculty and qualified students in a spirit of research and scholarship to enhance one's personal and professional competencies.

The master of arts degree in industrial arts is provided for: (1) those who are teaching and who want to complete the requirements for a master's degree to become better teachers, (2) those who participate in industrial training programs, and (3) those who wish to pursue work toward the doctorate degree

Each graduate applicant should request a copy of the official transcript of al college course work be sent to the graduate adviser in the Industrial Education Department in addition to the copies required by the Office of Admissions and Records.

## Major in Industrial Arts for the Bachelor of Arts Degree (code 2-1025)

Lower Division: In consultation with an adviser in the Industrial Education Department, 12 units selected from six of the following eight courses: Industrial Arts 101, 111, 121, 131, 141, 151, 161, 170.
Upper Division: 24 units of technical industrial arts courses planned in consultation with a major adviser, which must include Industrial Arts 343. Also required are Industrial Arts 385, 484 and EDSE 3001. Education Single Subject 450 is not a requirement for the baccalaureate degree but must be taken the semester before student teaching.

## Minor in Industrial Arts (code 0-1025)

The minor in industrial arts requires a minimum of 20 units of technical courses selected in the general area of industrial arts to provide a well-balanced program. The 20 -unit program should include work in at least three of the seven areas specified for the major. It is recommended that there be concentration in two areas of work. Students must consult with an adviser in the Industrial Education Department

## Certificate in Automotive Supervision

The Certificate Program in Automotive Supervision and Service is designed to prepare students for automotive supervision positions that require a strong technical background in automobile construction and operation. Opportunities in automotive supervision and service range from manufacturer's customer and fechnical representative to service instructor

This interdisciplinary program provides a student with a depth of technical training in automotives, related technical courses and also provides the student with experiences in supervision necessary for supervisory level positions.

## Requirements for the Certificate in Automotive Supervision:

1. A bachelor's degree in industrial arts that includes the following: a minimum of 18 units of automotive technical courses selected from Industrial Arts 361, 362, 363, 364, 365, 461, 462, 465 and 492. In addition, the student must complete 20 units of supporting technical courses and professional courses chosen in consultation with an adviser: Industrial Arts 321, 322, 323, 326, 331. 343, 370, 384, 470 and Education Single Subject 4501.
2. The completion of the following courses from the Department of Industrial Technology: Industrial Technology 300,307,309, or their equivalent.
Any deviation from this program requires the written permission of the program adviser. Interested students should contact Dr. Jay Webster, Department of Industrial Education.

## Certificate in Graphic Arts Supervision

The Certificate Program in Graphic Arts Supervision is an interdisciplinary program sponsored by the Industrial Education Department in cooperation with the Industrial Technology Department.

The printing industry ranks as the second largest industry in the United States A definite need exists for personnel familiar with the procedures necessary to operate in the supervisory realm of the industry.

The program would permit a student to study, in detail, industrial production processes, quality control procedures, economics and personnel requirements of the industry.

## Requirements for the Certificate in Graphic Arts Supervision:

1. A bachelor's degree in industrial arts that includes the following: Industrial Arts 342, 343, 351, 352, 353, 380, 391, 453, 454, 455, 492.
2. Approval of the Certificate Committee for admission to the certificate program during the first semester of enrollment. An adviser will be appointed upon admission to the program
3. Satisfactory completion of 24 units as listed below, or their equivalent Industrial Technology 300, 307, 309, 315, 405; Accounting 202, Finance 222, Psychology 381.
Any deviation from this program requires the written permission of a program adviser. Interested students should contact Dr. Robert Kunst or Mr. Ross Martin.

## Certificate in Industrial Plastics Processing and Design

The Certificate Program in Industrial Plastics Processing and Design is an interdisciplinary program sponsored by the Industrial Education, Mechanical Engineering and Chemical Engineering Departments.
Polymeric materials rank as second in tonnage use currently of all materials, and potion are that in the near future they may surpass metals in total usage. There is a definite need for personnel familiar with the processing and special design considerations necessary to properly make use of the special properties of this broad class of materials.

The program permits a student to study in detail the industrial production Tocesses, material testing procedures, economics of the polymerics industry and degradation of polymerics. All students in the program complete an individua project, consisting of the design of an item, choice of proper polymeric material for the particular application, choice of the processing operation and construction of the necessary moulding tools and testing of the completed device

Requirements for the Certificate in Industrial Plastics Processing and Design:

1. Bachelor's degree in industrial arts or engineering.
2. Satisfactory completion of the 23 units listed below.
3. Approval of the certificate committee for admission to the certificate program. An adviser will be appointed at that time.
4. Adviser's approval of completion of special project

## Required Courses

Polymeric Processing: Industrial Arts 370, 470; Mechanical Engineering 471, either Mechanical Engineering 472 or 476; Industrial Arts 492 (four units minimum) and/or Mechanical Engineering 450.
Properties of Polymers: Industrial Arts 170; Mechanical Engineering 373, 374, 424.
Master of Arts Degree with a Major in Industrial Arts (code 5-1025)

## Prerequisites

1. A bachelor's degree with a major in industrial arts, or:
2. A bachelor's degree in industrial education with course work judged by the Industrial Education Department to be the equivalent of that required at this University, or:
3. A bachelor's degree with 24 units of approved upper division industrial arts (Students deficient in undergraduate preparation must take courses to Study Committee.)

## Advancement to Candidacy

1. Satisfy the general University requirements for advancement to candidacy
2. Approval of the department graduate adviser and Director of Graduat Studies and Research, School of Applied Arts and Sciences.

## Requirements for the Degree

1. Completion of a minimum of 30 units of approved upper division and graduate courses.
2. Completion of a minimum of 20 units of industrial arts courses of which 15 units must be in the 500 and/or 600 series at this University
3. Completion of Industrial Arts 696 and 697
4. Thesis approved by the Department Graduate Study Committee

## Lower Division

## 281. Exploratory Woodwork (2) F,S Trout

General woodworking designed to provide a broad background of information elated to woodworking processes involving both hand and machine tools. Skills and safe work habits developed through individual solutions to given problems Certification of safety instructions provided. (Laboratory included.)
282. Exploratory Metalwork (2) F,S Trout

Metalworking in the areas of bench work, forging, casting, art metal, sheet metal and welding processes. Designed: (1) to give a broad background and understanding in the technology of materials; (2) to develop skills through individual solutions for given problems; and (3) to develop safe habits in working with metals and equipment associated with metal work. (Laboratory included.)

## Upper Division

380. Orientation to Industrial Education (1) F,S Randal

Orientation to industrial education for non teaching majors only. Evaluation of student's academic, social and mechanical aptitudes and abilities. Personal cumulative records started. Orientation to degree requirements and career
opportunities.

## *381. Shop Maintenance (2) F,S Powell

Prerequisite: Majors only in the senior year. Systems used in the maintenance of records, tools and equipment. (Laboratory included.)

## *382. The Comprehensive General Shop (3) F Powell

Experiences in planning, organizing and teaching a multiple activity program of applied to public school practice. (Laboratory,) tools, materials and processes as

## *384. Materials Testing and Evaluation (2) F Patcha

Prerequisite: Consent of instructor. Testing and evaluation of basic metallic industrial materials, cutting fluids, lubricants, chemicals, finishing processes plastics, fasteners and methods of quality assurance. (Lecture, laboratory.)

## *385. Organization and Management of Industrial Education Facilities (3) F,S Faculty

Area planning problems with emphasis on general architectural specifications auxiliary spaces and selection of tools, equipment and supplies. Plans and specifications for an instructional area are presented and evaluated. Includes safety considerations as applied to the planning, operation and utilization of laboratory facilities. Not open to students with credit in Industrial Arts 483.

## 388. Construction for Children (2) F,S Nicholson

Learning how to teach the wise and safe use of tools and materials to enhance children's programs, preschool through sixth grade. Introduction to Career Education. (Laboratory included.)
*389. Career Education for Children (2) F,S Nicholson
Prerequisite: Industrial Arts 388 or equivalent. Further studies in integrating construction with children's programs. Special emphasis on Career Education with opportunities to work in the public schools and community. (Laboratory included.)

## *391. Internship in Industrial Education (2) F,S D.Smith

Prerequisite: Consent of coordinator. Planned, coordinated and supervised work experience in an industry allied with the students' technical areas of concentration May be repeated for a maximum of eight units. Students may receive technical credit the second and the fourth time the class is repeated. Field trips into industrial complexes are scheduled according to technical areas of interest.

## 481. House Construction (1) F,S Macon

Designed for the homemaker desiring knowledge of materials and methods used in house construction. Not open to industrial arts majors.
*482. Teaching Aids (2) F,S Faculty
Prerequisite: Industrial Arts 388 for students preparing to teach in K-6. Criteria for the selection, planning, development and construction of teaching aids for the individual student and/or teacher. Laboratory experiences to develop familiarity of above criteria and their use. (Laboratory included.)
*484. Contemporary American Industry (3) F,S Genevro, Ryan
Study of the development of modern industry and technology with emphasis on recent industrial change and career development. Implementation of educational political, economic and technical change in modern systems of industria education is an important consideration. (Lecture-discussion 3 hours.)
*491. Special Problems in Industrial Education (1-3) F,S Torres
Prerequisite: Consent of instructor. Advanced work within an area of specialization done on an experimental or research basis. The area designated by letter at the time of registration as: (a) woods, (b) metals; (c) electricity-electronics (d) industrial drawing, ( f ) automotive, ( g ) industrial crafts-plastics, (h) professional (i) graphic arts, (j) photography, (k) plastics. May be repeated for a total of six units (Non-technical.)

## 492. Advanced Technical Studies (1-6) F, S Faculty

Prerequisites: Consent of instructor and area requisite courses. Advanced work done within an area of specialization designed for the present industrial arts teacher who wants upgrading in his field of concentration. Covers new industrial processes and materials that may be related to teaching in the secondary schools May be repeated for a maximum of six units per area of concentration (automotive drawing, electricity-electronics, graphic arts, industrial crafts, plastics, metals photography, woods and special generalized 492 courses not specifically allied to an area of industrial arts). (Laboratory included.)

## *493. Manual Arts Therapy Clinical Practice (3-6) F,S Torres

Prerequisite: Consent of department. Supervised experiences
therapy at various Veterans' Administration hospital and Students will acquire through observation hospitals and rehabilitation centers. experience in the procedures and practices in participation, clinical insight and required. (Field work.)

## Automotive

## Lower Division

161. Automotive I (2) F,S Faculty

Principles of operation of various components and the economics of selection and use of the modern automobile. Practical experience in maintenance and repair at the owner-operator level. (Laboratory included.)

## Upper Division

## *361. Auto Engines (3) F,S Hironaka

Prerequisite: Industrial Arts 161 or equivalent. Design and theory of construction and operation of engines. Types of materials used and tolerances of component parts. Testing, trouble diagnosis and rebuilding of an engine. (Laboratory ncluded.)

## *362. Auto Electricity (2) F,S Hironaka

Prerequisite: Industrial Arts 131 or 161, or equivalent. Principles and theory of operation of electrical system components that are common to automotive type vehicles. Latest methods of testing and trouble shooting are stressed. (Laboratory included.)
*363. Auto Chassis (2) F,S Webster
Prerequisite: Industrial Arts 161 or equivalent. Theories of design and operation of chassis units affecting stability, power flow, suspension and steering. Common to most automotive type vehicles. Includes testing, trouble diagnosis and modern
methods of servicing. (Laboratory included.)
*364. Auto Body Repair (2) F,S Faculty
Prerequisites: Industrial Arts 161 and 322, or equivalents. Techniques and practices of body rebuilding, refinishing and styling. (Laboratory included.)

## *365. Power Technology (2) F,S Webster

Prerequisite: Industrial Arts 161 or equivalent. Development, measurement transmission, control and utilization of power. (Lecture, laboratory.)

## *368. Aviation I (2) F,S Genevro

Prerequisite: Industrial Arts 161. Theory of flight, aircraft power plants and structures, the airways system and FAA regulations, navigation, meteorology survey of the aircraft industry and applicable related materials. (Laboratory included.)

## 461. Automotive Diagnosis and Tuneup (3) F,S Hironaka

Prerequisite: Industrial Arts 362 or equivalent. Theories of design and operation of fuel and emission control systems. Laboratory experiences focused on diagnosis and service using advanced analysis equipment. (Laboratory included.)
462. Automatics (2) F,S Webster

Prerequisite: Industrial Arts 161 or equivalent. Theories of design and operation of torque converters and automatic transmissions. Latest methods of testing, servicing and repair are stressed. (Laboratory included.)

## *465. Automotive Air Conditioning (2) $S$ Hironaka

Prerequisite: Industrial Arts 161. Theories of design and operation of automotive air conditioning systems. Laboratory experiences focused on system diagnosis and service. (Laboratory included.)

## Drawing

Lower Division
141. Industrial Drawing I (2) F,S Gietl, Randall

Basic principles of instrument and freehand drawing. Use and care of instruments, lettering, isometrics, orthographics, sections, auxiliary views, charts and graphs, maps, plot plans and architectural drawing. (Laboratory included.)

## Upper Division

*341. Industrial Graphics (3) F,S Randall
Prerequisite: Industrial Arts 141 or equivalent. Use of graphic techniques as a means of presenting data and the solution of arithmetical problems. The course encompasses the application of automated computer graphics, geometrical dimensioning and tolerancing and SI metric standards and techniques. (Laboratory included.)
*342. Technical Sketching (2) F,S Gietl, Randall
Principles and practice of freehand sketching of projects on paper and on the blackboard. (Laboratory included.)
*343. Industrial Arts Design (3) F,S Trout
Basic course dealing with the elements of two and three dimensional design, stressing the understanding and application of design principles to the industrial arts program. (Laboratory included.)
*345. Industrial Drawing II (3) F,S Gietl
Prerequisite: Industrial Arts 141 or equivalent. Theories and graphic solutions in rotation, isometric, oblique projections. Intersections, curved surfaces, developments, space problems of angle and distance. (Laboratory included.)

## *346. Small Boat Design (2) F,S Randall

Prerequisite: Industrial Arts 141. Development of preliminary drawings for a sailing or planing vessel. The set of drawings includes the lines drawing, arrangement and profile plans, sail plan, table of offsets, transom expansion and deck beam development. The design will be analyzed using graphic methods and static calculations using a computer. (Laboratory included.)
*347. Architectural Drafting (3) F,S Church
Prerequisite: Industrial Arts 141 or equivalent. Development of drafting techniques applicable to graphics employed in the planning and study of light frame construction processes. (Laboratory included.)

## *441. Machine Drawing (2) F,S Gietl

Prerequisite: Industrial Arts 141 or equivalent. Sketching and drawing of machine parts in detail and in assembly. Use of nomenclature, standard tables and empirical formulae. (Laboratory included.)
*442. Architectural Planning and Presentation (3) F,S Church
Prerequisite: Industrial Arts 347. Study and planning of structures for specific functions. Development of presentation drawings including perspective drawing, shades and shadows, materials and colors. Review of architectural history. (Lecture, laboratory 6 hours.)
*443. Electronic and Electro-Mechanical Drafting (2) F,S Randall
Prerequisites: Industrial Arts 131, 141. Development of drafting techniques applicable to electronic drafting standards, terminology and schematic, wiring and interconnection diagrams. It also includes standards and techniques for pipe drawing and study of electro-mechanical packages. (Laboratory included.)

## Electricity-Electronics

## Lower Division

## 131. General Electricity (2) F,S Faculty

Survey of electrical principles and devices. Discussions and activities emphasizing magnetism, DC and AC theory, basic test equipment, components and circuits and the importance of electricity to technology. (Laboratory included.)

## Upper Division

*331. Electronic Fundamentals (3) F,S Brandstatt, D. Smith
Prerequisite: Industrial Arts 131. Study of basic DC-AC theory, vacuum tube characteristics, power supply and regulator circuits, amplifier and oscillator circuits and basic semi-conductor theory. Use of test equipment will be emphasized. (Laboratory included.)
*332. Semiconductor Bipolar Devices (3) F,S Brandstatt, D. Smith
Prerequisite: Industrial Arts 331. Theory and operation of diode devices and bipolar transistors. Both linear and digital applications will be presented. Basic circuit design, measurement and test equipment usage will be emphasized.
*333. Electronic Communication (3) F,S Brandstatt, D. Smith
Prerequisite: Industrial Arts 331. Theory and operation of receivers, transmitters, modulators, antennas and related circuits. Specific applications for AM, FM and video communications will be presented including FCC licensing requirements. (Laboratory included.)
*334. Special Solid State Devices (3) F Brandstatt
Prerequisite: Industrial Arts 331. Study of theory and circuit applications for field effect transistors, unijunction transistors, digital and linear integrated transistors, digital and linear integrated circuits and thyristors. (Laboratory included.)
*387. Citizen Band Radio (2) F D. Smith
Principles of Citizen Band Radio for general and consumer education that includes transceivers, antennas, Federal Communication Commission laws and radio theory.
*430. Electronic Service and Repair (2) F,S D. Smith
Prerequisite: Industrial Arts 331. Repair and preventive maintenance of electronic and electrical equipment. (Laboratory included.)
*432. Amateur Radio Licensing (2) S D. Smith
Code practice and theory to qualify for one of the following federal amateur radio licenses issued by the Federal Communications Commission: Novice, Technician, General, Advanced or Extra Class. Also to prepare students to sponsor amateur radio in schools. University Amateur Radio Station K6ZZQ is used in participation with live, on the air amateur stations throughout the world in the laboratory practice. (Laboratory included.)
*433. Television and FM Principles (2) S D. Smith
Prerequisite: Industrial Arts 331, 332, or equivalent. Theory of FM and TV systems. Analysis of circuit operation and service techniques of modern receivers (Laboratory included.)

## Graphic Arts

## Lower Division

## 151. Introduction to Graphic Arts (2) F,S Faculty

Principles of elementary typographic design and layout, type composition and presswork. Discussions and activities emphasize the letterpress, offset lithography, silk screen and intaglio printing processes, as well as bookbinding and paper manufacturing. (Laboratory included.)

## Upper Division

*351. Composition Methods in Graphic Arts (3) S Martin
Prerequisite: Industrial Arts 151. Advanced typographic design and layout. Discussions and activities em phasize newspaper and magazine layout, multiple run imposition methods, copyfitting, hot and cold composition methods and the composition of printing papers and inks. New techniques and developments in graphic arts included. (Laboratory included.)
*352. Graphic Arts Photography (3) F,S Kunst
Photographic theory and operations related to graphic arts. Study of process camera in making line, halftone negatives and stats. Use of the vacuum frame and point light source for contacting and various proofing processes. Basic stripping operations presented. (Laboratory included.)
*353. Design and Layout of Printing Forms (2) F Kunst
Principles of printing layout, type estimating and typographical specifications Experience offered in designing typical display and commercial printing forms (Laboratory included.)
*354. Graphic Arts Handicrafts (2) S Kunst
Methods of producing printing designs with minimum equipment and facilities Activities and projects specifically designed for recreation and junior high school graphic arts instructional programs. (Laboratory included.)
*451. Duplicating Methods for Teachers (2) F,S Martin
Principles and utilization of duplicating machines and methods commonly found in school systems and how they may be used in preparing instructional materials (Laboratory included.)

## *453. Graphic Arts Presswork (3) F Martin

Prerequisite: Industrial Arts 151. Principles and techniques of both letterpress and photo-offset presswork. Discussions and activities emphasize the theory practice and problems of letterpress and photo-offset presswork. Development of technical knowledge of materials and methods. Practice in running increasingly complex jobs including multicolor work. (Laboratory included.)
*454. Advanced Graphic Arts Photography (3) F Kunst
Prerequisite: Industrial Arts 352. Advanced presentation of photographic theory and practices common to the graphic arts field. Laboratory techniques to encompass the basic kinds of color separations. These include indirect and direct methods utilizing the enlarger, process camera and contact frame. Masking techniques to include both silver and dye masks. Experimental processes to be included. (Laboratory included.)
*455. Graphic Arts Printing Production (3) S Martin
Prerequisites: Industrial Arts 351,352, 453 or consent of instructor. Principle of and experiences in printing production. Through lecture and laboratory experiences the course identifies and covers topics such as: production planning, cost estimating, job order planning and control, quality control, maintenance, purchasing and material control.

## Industrial Crafts

## Upper Division

*371. Industrial Crafts I (3) F, S Nicholson
Materials of industry through creative experiences in the crafts media. Historical and industrial related information is included. (Laboratory included.)
*372. Introduction to Gem Faceting and Gemology (3) F Fradkin
Theory and practice of gemology and gemstone faceting. Covers basic physical optical and crystallographical properties, faceting machine design and operation and basic gem cutting skills. (Laboratory included.)

## *471. Industrial Crafts II (3) F,S Nicholson

Prerequisite: Industrial Arts 371. Advanced studies of industrial crafts media Emphasis on ceramics and lapidary. (Laboratory included.)

## 472. Advanced Gem Faceting and Gemology (3) S Fradkin

Advanced studies in gemology and gemstone faceting. Emphasis on the use of faceting diagrams, complex cutting and polishing and the cutting of rare materials (Laboratory included.)

## Metals

## Lower Division

121. Basic Metalworking Processes (2) F,S Faculty

Properties of ferrous and non-ferrous metals, characteristics of hand and machine tools, and the basic processes of metal casting, machining, light metal fabrication and welding. (Laboratory included.)

## Upper Division

*321. Patternmaking and Casting Processes (3) F,S Genevro, E. Smith
Prerequisites: Industrial Arts 111, 121. Theory and practice in the patternmaking coremaking and metalcasting processes, including green sand molding, shell molding, investment casting, permanent mold casting and applicable related processes. (Laboratory included.)
*322. Welding I (2) F,S Patcha, E. Smith
Oxy-acetylene and electric welding principles and practice, welding equipment and principles of ferrous metallurgy. (Laboratory included.)
*323. Machine Tools I (3) F, S Heineman, Patcha
Basic principles and practices in machining operations including bench work, drilling, lathe, milling, and grinding with emphasis on tool set-ups and procedures representative of industry. (Laboratory included.)
*326. Metal Forming and Fabrication (3) F,S Patcha, E. Smith
Prerequisite: Industrial Arts 121. Principles and practices of hand and machine forming processes on light gauge ferrous and non-ferrous metals, production fabricating techniques and metal joining processes. (Laboratory inciuded.)

## *422. Welding II (2) S Patcha

Prerequisite: Industrial Arts 322 or equivalent. Principles and practices of shielded metallic arc, gas tungsten arc, and gas metal arc welding, brazing processes and study of welding metallurgy. (Laboratory included.)
*423. Machine Tools II (3) F, S Heineman
Prerequisite: Industrial Arts 323 or equivalent. Advanced machining and tooling operations including basic machine design, tool and cutter maintenance, numerical control ( $\mathrm{N} / \mathrm{C}$ ) and electrical discharge machining (EDM). (Laboratory included.)

## 424. Advanced Metalworking Processes (2) S Genevro, Heineman

Prerequisites: Industrial Arts 121, senior or graduate standing, consent of instructor. Advanced metalworking theory and practice with emphasis on new industrial processes. The student will develop metal-working problems and projects to be used in teaching metals in the secondary schools. (Laboratory included.)

## Photography

## Lower Division

101. Basic Photography (2) F,S Faculty

A beginning course to familiarize students with the fundamentals of photography. Units pertaining to cameras, exposure meters, films, darkroom technique, lighting, portraiture and optics. Not open to students with credit in Photography 210. (Laboratory included.)

## Upper Division

## 304. Advanced Photography (3) F,S Routh, Wittich

Prerequisite: Industrial Arts 101. Practical application of advanced camera and laboratory techniques. Microphotography, macrophotography, and photomicrography. Special lens applications, distortion and perspective control Infra Red photography, reversal processing, specialized development, print toning, salon prints, panoramas and murals. An introduction to color photography Advanced assignments directed toward student's major field of study. Not open to students with credit in Photography 310. (Laboratory included.)
*306. Color Photography (2) F,S Routh, Wittich
Prerequisite: Industrial Arts 101. Survey of current color materials and processes with emphasis on exposing, developing and printing. Contemporary approach to color photography will be stressed. (Laboratory included.)
*308. History and Criticism of Photography (2) F Routh
Prerequisite: Industrial Arts 101. Determination of the history, aesthetics and criticism of still photography as an art form. Content presented in lectures, tapes, slides and films. Designed to help students evolve a philosophical approach to photography.

## 401. Photo Marketing/Portfolio (2) S Wittich

Prerequisites: Industrial Arts 304, a minimum of four additional upper division units in photography. The art and craft of preparing a professional photographer's portfolio and the necessary techniques to display photographic skills, utilizing the portfolio as the chief marketing tool.
*404. Commercial Photography (2) F Wittich
Prerequisite: Industrial Arts 101 or equivalent. Course designed to give exploration of camera and laboratory techniques as applied to advertising and commercial fields. Related photo assignments of studio and location problems will be given. (Laboratory included.)
*405. Nature Photography (2) F, S Schmidt
Prerequisite: Industrial Arts 304 or consent of instructor. Course directed toward a representative sampling of imagemaking within the world of nature. Students will work in color and black and white. Will include infrared photography and macro techniques. Field trips will be utilized. (Laboratory included.)
*406. Experimental Photography (2) $S$ Routh
Prerequisite: Industrial Arts 101 or equivalent. Includes techniques in high contrast, line image, tone separation, solarization, multiple exposure and advanced printing with emphasis on an experimental approach. (Laboratory included.)

## *407. Documentary Photography (2) F Wittich

History, theory and practice of still documentary photography. Students will research, script and produce a documentary photo essay on a topic of social concern. Lectures and films will focus on the documentary still photograph as an instrument for social influence and change. (Laboratory included.)
*408. Color Slide-Tape Presentations (2) $S$ Wittich
Prerequisite: Industrial Arts 101. Planning and producing the slide-tape presentation, scripting, photography, sound recording and synchronization of color slides and tape. (Laboratory included.)
*409. Photo-Graphics (2) S Routh
Prerequisite: Industrial Arts 101. Indepth study of graphic techniques as applied in photography: high contrast, tone separation, color graphics, line, posterization, tone line, Sabattier effect, etch-bath. (Laboratory included.)

## Plastics

## Lower Division

170. Introductory Plastics (2) F,S Faculty

Study of thermoplastic and thermoset plastics; includes basic applications, manufacturing processes, economic comparisons and finishing techniques (Laboratory included.)

## Upper Division

*370. Thermoplastics Materials and Processes (3) F,S Faculty
Prerequisite: Industrial Arts 170 or consent of instructor. Advanced studies of thermoplastic materials and related machine and mold types. Non-metallic mold construction and general mold maintenance will be emphasized. (Laboratory included.)

## *373. Plastic Machine Design and Maintenance (3) F Faculty

Prerequisite: Industrial Arts 170 or consent of instructor. Study of plastic machine operation, maintenance and repair. A complete study of hydraulic and pneumatic power as well as electric circuitry related to most machine operation (Laboratory included.)

## *470. Thermoset Plastic Materials and Processes (3) F,S Faculty

Prerequisite: Industrial Arts 170 or consent of instructor. Advanced studies of thermoset plastic materials and related machine and mold types. Fiberglass mold and part fabrication will be emphasized. (Laboratory included.)
*474. Plastic Machine Mold Design and Fabrication (3) F,S Faculty
Prerequisite: Industrial Arts 170 or consent of instructor. Complete study in plastic machine mold design and fabrication. This course also includes mold repair and maintenance.

## Woods

## Lower Division

111. Introductory Wood (2) F, S Faculty

Survey of basic wood processes, practices and apparatus with emphasis on the understanding of current principles and procedures. (Laboratory included.)

## Upper Division

*311. Industrial Coatings (2) F Macon
Development, manufacture and use of modern industrial coatings, with emphasis on their application as protective and decorative substances for wood and allied materials. (Laboratory included.)
*312. Machine Wood (3) F,S Macon, Quinones
Prerequisite: Industrial Arts 111 or equivalent. Basic principles and study of the proper care, selection, maintenance of power equipment, with emphasis on safety and proper technique and use of power machines as they relate to the industrial arts program. (Laboratory included.)
*313. Wood Technology (2) S Quinones
Prerequisite: Industrial Arts 111 or equivalent. Applications, implications and values of wood and woodworking in our technological society, with emphasis upon understanding through study and experiment. (Laboratory included.)
*411. Furniture (3) F,S Macon, Quinones
Prerequisite: Industrial Arts 312 or equivalent. Analysis of characteristics and principles of furniture designs, with emphasis on selection and construction of furniture, employing advanced hand and machine tool operations. (Laboratory included.)
*412. Carpentry (2) F Macon
Prerequisite: Industrial Arts 111 or equivalent. Planning and techniques of estimating construction costs of building with the study of techniques involved in laying out and framing a structure. (Laboratory included.)
*413. Upholstery (2) F Quinones
Prerequisite: Industrial Arts 111.Methods of upholstery practices and use of tools and equipment employed in the process of upholstery. (Laboratory included.)

## *414. Boat Construction (2) $S$ Macon

Prerequisite: Industrial Arts 312 or consent of instructor. Interpretation of line drawings and specifications, design and construction of forms, molds and hulls of straked, molded plywood and fiberglass systems. (Laboratory included.)
*415. Industrial Wood (2) S Macon
Prerequisite: Industrial Arts 312. Comprehensive study of modern industrial woodworking, its production and management, from skilled hand craftsmanship to numerical automation, with emphasis on the operational functions and technical procedure involved. (Laboratory included.)

## Graduate Division

590. Supervision and Administration in Industrial Education (3) F Faculty

The study of supervisory and administrative procedures as applied to various industrial education programs in junior high, high school and higher education.
591. Curriculum Construction in Industrial Education (3) $F$ Powell

The selection and organization of curricula and development of courses of instruction to be used in industrial education.
592. Evaluation in Industrial Education (3) $S$ Kunst, Powell

The development of methods, techniques and devices for evaluating pupil progess, program effectiveness, physical facilities and industrial materials. Emphasis on scientific development of evaluation devices.
593. Techniques in Teaching Industrial Education (3) $S$ Ryan

The selection, organization and utilization of instructional material for teaching industrial education courses.
594. Modern Concepts in Industrial Education (3) F,S Powell, Ryan

Concepts and objectives of industrial education; relationship of industrial education to general education; state and federal legislation affecting industrial education; types of modern industrial schools and their relationship to industry; cooperative and apprenticeship training programs.

## 650. Seminar in Industrial Education (3) F,S Kunst, Ryan

Prerequisite: Consent of instructor. Study of selected topics in industrial education, including important legislation, industrial innovations, technical change and contemporary problems. Topics will be announced in Schedule of Classes. May be repeated for a maximum of six units.

## 696. Research Methods (3) F,S Kunst, Torres

Selecting, defining and presenting methods applicable to the solution of problems in industrial education with emphasis on experimental, descriptive technical projects and library techniques. Required of all master's degree candidates in industrial arts.

## 697. Directed Research (2) F,S Kunst, Torres, Webster

Prerequisites: Industrial Arts 696, advancement to candidacy. The definition, presentation and discussion of selected problems in industrial education.
698. Thesis (1-4) F,S Kunst, Powell, Torres, Webster

Prerequisite: Advancement to candidacy. Planning, preparation and completion of a thesis related to this field. Limited to classified graduate students who have completed or are completing Industrial Arts 697.

## Industrial Technology

## Department Chair: Dr. Glenn E. Hayes.

Emeriti: H. Burgess Robinson, James L. Young
Professors: Brice, Hayes, Kleintjes.
Associate Professors: Grossman, Johnson,Krauser.
Assistant Professors: Harriston, Jarasunas.
Lecturers: Cannon, Jarecki.
Undergraduate Advising Coordinators:
Construction Option: Dr. Arthur W. Grossman
Electronics Option: Mr. Roland Harriston.
Manufacturing Option: Mr. Emanuel Jarasunas.
Quality Assurance Option: Mr. Bud Johnson.
The program in industrial technology is designed for the student who demonstrates the aptitude and promise for high level technical work with related administrative and management responsibility.

Leadership awareness and ability are accomplished through a combination of lectures, seminars, discussions and workshops which expose the student to the real world of industry and the leadership challenges that it offers. Emphasis is placed on the technological as well as the sociological and managerial aspects of modern industry.
This curriculum has been designed to accommodate students who may wish to enter the University in a four-year program, or who may wish to transfer credits earned at other colleges or approved technical or military service schools. It is recommended that prospective students, prior to submitting an application for admission, be advised by a member of the industrial technology faculty to discuss departmental requirements and the admission requirements of the University.
There are four options in industrial technology.
Construction Technology. Prepares graduates for responsible positions in project management, contracting, estimating, cost and scheduling, inspecting, proposals and specification writing, and facilities planning and development in the construction industry.
Electronics Technology. Qualifies a person to serve in methods, planning, facilities, development, production and quality control and specification and proposal writing in areas of the electronic and control industries.
Manufacturing Technology. Qualifies a person to serve in tooling, methods, facilities planning and development, specification and proposal writing and the quality, liaison and management aspects of production in manufacturing industries.

Quality Assurance. Qualifies a person to serve in reliability, quality control, quality assurance, inspection, metrology, configuration management and testing aspects of manufacturing enterprises.
In addition to the aforementioned options, the Industrial Technology Department offers baccalaureate certificate programs in the fields of safety and facilities management. Students desiring to pursue these fields should contact an adviser in the department for further information.

## Industrial Technology Facilities

The multimillion dollar building for industrial technology is designed with laboratories and modern equipment for instruction in foundry and patternmaking, metallurgy and heat treating, metrology, quality assurance, materials testing, structures and environment, modern processes including electro-chemical processes, electronic systems and testing, industrial electricity, plant layout and computers.

## Industrial Technology Advisory Council

The advisory council, composed of leaders actively engaged in areas of technology with which the program is concerned, continually provides information and guidance about industrial developments in methods, materials and techniques so that the program reflects the best of current practices. The members examine various aspects of the program and make recommendations for changes in course content, methods and/or facilities. Present membership in the council is made up of representatives from the following industries or corporations.

Hoffman NavCom Systems
Dept. of Defense McDonnell Douglas Corp. Fluor Corporation Northrop Nortronics Smith Tool Corp Norris Industries, Inc. Certified Alloy Products, Inc Biddle Development, Inc

Bechtel Corporation
Rockwell International
Ford Aeroneutronics Corp.
Hughes Aircraft, Aerospace Group
Long Beach Naval Shipyard
Magnavox Development Laboratories
THUMS, Long Beach
General Motors Corp.
Chrysler Corp.

## Major in Industrial Technology for the Bachelor of Science Degree

A minimum grade of $C$ is required in all major technical courses, calculus chemistry and physics

The Industrial Technology Department has two distinctive curriculum aspects Students enrolled in any of the programs must complete a group of core courses These subject areas cover the broad disciplines and functions of technical management. Option courses are designed to strengthen students in their field of concentration. The core courses together with the option requirements are requisites for the technical management role of the technologist
The lower division general education and core courses for all options are listed as follows: Chemistry 100, Physics 100A and B, Economics 200, Psychology 100, Philosophy 160 or 170 or 270 , Art/Music/Theatre Arts (any three-unit course satisfying the general education requirement), Mathematics 112, 120; History 172 , Political Science 100, English 100, Accounting 202 and Finance 222. Additionally, up to 24 approved technical credits, of grade C or better, may be applied toward the lower division requirements of the degree

The upper division core courses for all options are listed as follows: Industrial Technology 300, 309,311, 315 and Psychology 381. The following additional core courses are required for all options except construction technology: Industrial Technology 301, 307, 312 and 406. Additional core courses pertaining to the construction option only are as follows: Industrial Technology 317,323 and 414. The specific requirements for each option are indicated below:

## Construction Technology Option (code 3-1080)

All general education, lower and upper division core courses and the following upper division option requirements: Industrial Technology 302, 304, 321, 322, 417 $422,423,424,425,427$ and 435 . Field work requirements and electives, selected in consultation with adviser, to total 128 units.

## Electronics Technology Option (code 3-1081)

All general education, lower and upper division core courses and the following upper division option requirements: Industrial Technology 306, 340, 342, 343, 402, 408,445 , and 490 . Field work requirements and electives, selected in consultation with adviser, to total 128 units.

## Manufacturing Technology Option (code 3-1082)

All genteral education, lower and upper division core courses and the following upper division core courses and the following upper division option requirements: Industrial Technology 302, 304, 305, 306, 361, 369, 402, 406, 408 and 470. Field work requirements and electives, selected in consultation with adviser, to total 128 units.

## Quality Assurance Option (code 3-1083)

All general education, lower and upper division core courses and the following upper division option requirements: Industrial Technology 306, 313, 361, 369, 402, 408, 469, 470 and Management 406. Field work and electives, selected in consultation with adviser, to total 128 units

Field Work Requirement. The industrial technology student must be employed by industry or approved government agency in a position equivalent to technician level or higher which allows the student to demonstrate responsibility usually afforded persons who have completed two years of college. This employment must be for a minimum of three months or its equivalent in time for part-time employment. This field work is a graduation requirement and must be certified and approved by the faculty of the Industrial Technology Department.

## Certificate in Facilities Operations

The Certificate Program in Facilities Operations is designed to qualify the graduate to serve in plant engineering, industrial construction coordination, facilities development and design, plant layout, and facilities project management. Examples of the myriad positions available to the graduate of this program are facilities planner, construction supervisor, facilities or plant supervisor, facilities project engineer and facilities design engineer.
This program provides the Industrial Technology graduate with a depth of technical knowledge in facilities-operations-oriented technical courses, as well as the knowledge of behavioral sciences essential for managing technical functions.

## Requirements for the Certificate in Facilities Operations:

1. The Certificate in Facilities Operations may be earned concurrently with or subsequent to the baccalaureate degree.
2. This program is open to all majors who have fulfilled the required prerequisites as stated in item 3 a .
3. The program requires a total of 24 units as specified in items 3 b and 3 c .
(a) The completion of supporting technical courses chosen in consultation with an adviser:I.T. 323, Physics, Chemistry, Algebra and Trigonometry, Accounting, Construction Drafting, and lower division construction requirements.
(b) The following 21 units of facilities-operations-oriented courses are required:I.T. 306, 307,321,322, 402, 407, 408 and 422.
(c) Completion of three units of either Criminal Justice 431, I.T. 405, 403 or 306.
4. Any deviation from this program requires the written permission of the program adviser.

## Certificate in Safety Operations

The Certificate Program in Safety Operations is designed to prepare students for safety positions that require a strong background in the technology of safe industrial environments. Examples of this kind of position are manufacturer's safety representative, manufacturing facilities safety analyst, traffic safety analyst, and representative of California and Federal agencies involving public safety (e.g. OSHA)

This interdisciplinary program provides a student with a depth of technical training in safety, related technical courses, and also provides the student with experiences in human resources management necessary to effectively supervise safety programs.

Requirements for the Certificate in Safety Operations:

1. The Certificate in Safety Operations may be earned concurrently with or subsequent to the baccalaureate degree
2. This program is open to all majors who have fulfilled the required prerequisites as stated in item 3 a .
3. The program requires a total of 24 units as specified in items $3 b$ and $3 c$
(a) The completion of supporting technical courses chosen in consultation with an adviser: Industrial Technology 301, Physics 100A-B or equivalent, Chemistry 100 or equivalent, Accounting 202 or equivalent, and Mathematics 102 or equivalent.
(b) The following 21 units of safety-operations-oriented courses are required: Industrial Technology 301, 307,308,309,310, 369, and 402.
(c) Completion of three units of either Consumer Health, Finance 222, or Human Resources Management 360
4. Any deviation from this program requires the written permission of the program adviser.

## Lower Division

230. Fundamentals of Inspection (3) S Brice, Hayes

Theory and application of inspection procedures, variables and attribute inspection, laboratory inspection exercises. (Lecture 2 hours, activity 2 hours.)
240. Construction Practices (3) F,S Faculty

Principles and practices as applied in contemporary residential and light commercial construction. (Lecture 2 hours, activity 2 hours.)
245. Concrete Construction (3) F,S Faculty

Introductory course in concrete terminology, tools, practices and building codes. Includes concrete form construction, erection and stripping; mixing, placing finishing and curing. Field trips. (Lecture 2 hours, activity 2 hours.)

## Upper Division

## 300. Industrial Communications (3) F,S Brice

Prerequisites: English composition and industrial drawing. Accurate, economical, rapid transmission and interpretation of information.
301. Materials of Industry (2) F, S Kleintjes

Prerequisites: Physics 100A,B, Chemistry 100. Properties and applications of industrial materials. (Lecture 1 hour, laboratory 3 hours.)
302. Industrial Electricity (3) F, S Krauser

Prerequisite: Physics 100B. Current practices in transmission, utilization and application of electrical power in industry. (Lecture-discussion 2 hours, problem session 2 hours.)
303. Foundry Technology (1) F,S Brice

Prerequisite: Industrial Technology 306. Foundry practices and casting techniques used in industry. (Lecture-discussion 1 hour.)

303L. Foundry Technology Laboratory (1) F,S Brice
Prerequisite or corequisite: Industrial Technology 303. Foundry practices and casting techniques used in the industry. (Laboratory 3 hours.)

## 304. Mechanics of Materials (3) F,S Krauser

Prerequisites: Mathematics 122, Physics 100A. Study of the basic laws of statics and dynamics, analysis of failures, stresses and deformation of structural and machine members

## 305. Kinematics and Machine Design (2) F,S Grossman

Prerequisite: Introductory graphics, Physics 100A. Graphical approach to analysis and design of mechanisms through the study of displacement, velocity and acceleration of gears, cams and linkages; fundamentals of hydraulics, pneumatics and power train. (Lecture 2 hours.)

305L. Kinematics and Machine Design (1) F,S Jarasunas
Prerequisite or corequisite: Industrial Technology 305. Laboratory course applying graphical analysis to design of mechanical systems. (Laboratory 3 hours.)

## 306. Processes of Industry (3) F,S Brice

Prerequisite: Industrial Technology 301. Methods used in industrial manufacturing and fabrication. (Lecture-discussion 2 hours, laboratory 2 hours.)

## 307. Industrial Safety (3) F, S Faculty

Industrial safety management and administration, including economic factors such as direct and indirect costs and workmen's compensation; accident investigation; survey of governmental regulations such as the Occupational Safety and Health Act (O.S.H.A.).

## 308. Systems Safety (3) F Faculty

Prerequisite: Industrial Technology 307. Safety assurance as it relates to management policies, work planning, design, manufacturing methods and the implementation of safety procedures.

## 309. Industrial Supervision (3) F,S Kleintjes

Types of industrial organizations and supervisory systems; responsibilities, duties and qualifications of the supervisor.

## 310. Industrial Hygiene (3) S Faculty

Prerequisite: Industrial Technology 307. Detection, analysis and control of health hazards that affect the body and the atmosphere in the industrial environment

## 311. Introduction to Industrial Technology (1) F,S Harriston

Survey of the professional activities and environments of the industrial technologist. Course covers the role of the technologist in American industry, the history of technology and the growth and future of those professionals who hold the bachelor of science degree in industrial technology.

## 312. Statistical Quality Control (3) F,S Hayes, Johnson

Statistical quality control; control chart principles and techniques, sampling procedures; military standards as well as reliability theory and applications are covered. Not open to students with credit in Industrial Technology 471. (Lecturediscussion 3 hours.)
313. Metrology (1) F Faculty

Prerequisite: Industrial Technology 306. Instrument calibration, standards and precision measurement for quality assurance and reliability. (Lecture-discussion 1 hour.)
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## 313L. Metrology Laboratory (1) F Faculty

Prerequisite or corequisite: Industrial Technology 313. Instrument calibration standards and precision measurement for quality assurance and reliability (Laboratory 3 hours.)

## 315. Computer Applications (2) F,S Krauser

Prerequisite: Course in logic. Survey of computer applications to business, manufacturing, research and simulation. Not open to students with credit in Industrial Technology 410. (Lecture-discussion 2 hours.)

315L. Computer Applications Laboratory (1) F,S Krauser
Prerequisite or corequisite: Industrial Technology 315. Applications of computers to solution of problems in business, manufacturing, research and simulation. (Laboratory 3 hours.)

## 317. Construction Safety (3) F,S Faculty

Prerequisites: Lower division construction classes. Terminology, safety functions, accident costs, workman's compensation and liability laws, O.S.H.A., and many other governmental and nongovernmental codes, regulations and field safety methods pertinent to the construction industry. Field trips. (Lecturediscussion 3 hours.)

## 320. Materials Handling (3) S Hayes

Prerequisite: Industrial Technology 306. Work simplification in movement of materials in production.
321. Construction Cost Estimating (3) $S$ Grossman, Faculty

Prerequisites: Lower division construction requirements met or in progress Estimates used by building and specialty contractors. Preparation of cost estimates through evaluation of labor, material, equipment and indirect costs. (Lecture 2 hours, activity 2 hours.)

## 322. Mechanical Equipment for Buildings (3) F,S Kleintjes

Prerequisites: Lower division construction requirements met or in progress. Principles and current practices in water supply, waste disposal, heating, ventilating, air conditioning and fire protection. (Lecture 2 hours, activity 2 hours.)

## 323. Materials for Construction (2) F,S Kleintjes

Prerequisites: Physics 100A-B, Chemistry 100. Properties, applications and economics of materials of specific interest to the construction industry. (Lecture 1 hour, laboratory 3 hours.)

## 324. Industrial Electro-Chemical Processing (2) F,S Faculty

Prerequisites: Industrial Technology 301, 306. Theory and practice in electrochemical processes to include chem-milling, electro-forming, electro-plating and metal coloring. (Lecture 1 hour, activity 2 hours.)
340. Solid-State Electronics I (3) F,S Harriston

Prerequisites: Physics 100A-B, equivalent to Mathematics 116, 16 units of electronics. Analysis and design of solid-state electronic circuits utilizing bipolar, unijunction, field-effect and 4-layer control devices. (Lecture-discussion 2 hours problem session 2 hours.)

## 342. Solid-State Electronics II (3) F,S Harriston, Faculty

Prerequisite: Industrial Technology 340. Analysis and design of solid-state electronic circuits utilizing linear integrated circuits, including operational amplifiers, demodulators, phase-locked loops and timers. (Lecture-discussion 2 hours, laboratory 2 hours.)
343. Electronic Testing and Troubleshooting (2) F,S Faculty

Prerequisite: Industrial Technology 342. Modern testing requirements procedures and instrumentation; logical troubleshooting of industrial electronic circuitry. Not open to students with credit in Industrial Technology 341. (Laboratory included.)

## 344. Machine Tools (1) F,S Brice

Prerequisite: Industrial Technology 306.Operations and use of the conventional and nonconventional machine tools. For electronics and quality options only. (Lecture 1 hour.)

344L. Machine Tools Laboratory (1) F,S Brice
Prerequisite: Industrial Technology 344. Operations and use of conventional and nonconventional machine tools. For electronics and quality options only. (Laboratory 3 hours.)

## 361. Industrial Metallurgy (3) F,S Jarasunas

Prerequisite: Industrial Technology 301; recommended: 369. Current and emergent applications of metallurgy to manufacturing of modern hardware. (Lecture 2 hours, laboratory 3 hours.)
362. Heat Treating (1) $F$ Brice

Prerequisite: Industrial Technology 361. Theory and applications of thermal treatment processes to non-ferrous and ferrous metals with resulting changes in properties as used in current production. (Lecture 1 hour.)

362L. Heat Treating Laboratory (1) F Brice
Prerequisite: Industrial Technology 362. Metallographic study of heat effects of thermal treatments on metals and mechanical properties of metals. (Laboratory 3 hours.)
364. Industrial Tooling (3) F Brice

Prerequisite: Industrial Technology 305. Design and fabrication of tools for production. Typical tooling problems will include working drawings, production plans and tool drawings and hardware. (Lecture-discussion 2 hours, laboratory 2 hours.)

## 369. Quality Assurance I (3) F,S Hayes

Prerequisite: Industrial Technology 306. An overview of quality assurance principles and practices in industry, including management concepts, inspection practices, costs of quality and testing functions. (Lecture-discussion 3 hours.)

## 370. Food, Drug and Cosmetic Quality Control (3) F Hayes, Faculty

Technical disciplines and requirements for the control of quality of foods, drugs and cosmetics; regulatory laws governing these fields as well as the accepted practices of quality control are covered. (Lecture-discussion 3 hours.)

## 375. Industrial Instrumentation (3) S Krauser

Prerequisite: Physics 100B. Techniques in measurement of physical quantities with emphasis on methods and equipment relating to industrial control and processing. Not open to students with credit in Industrial Technology 404. (Lecture 2 hours, laboratory 2 hours.)

## 380. Graphics Tooling (2) $S$ Faculty

Prerequisite: Industrial Technology 315. Introduction of interactive computer devices to establish hard copy documents which implement tool design. (Lecture 1 hour, laboratory 3 hours.)

## 402. Production Analysis (3) F,S Hayes

Prerequisite: Industrial Technology 306. Simplification of manufacturing operations; motion and time study, standards, planning and control; emphasis on operations analyses for optimum production economy.
403. Procurement (3) F Brice, Faculty

Prerequisites: Industrial Technology 301 and accounting. Examination of the acquisition function within the industrial complex. (Lecture-discussion 3 hours.)
405. Plant Planning and Layout (3) S Faculty

Prerequisite: Drafting ( 306 recommended). Planning practices, procedures and requirements for laying out industrial facilities. (Lecture-discussion 2 hours laboratory 2 hours.)

## 406. Proposals and Specifications (3) F,S Johnson

Prerequisite: Industrial Technology 300. Developing the technical knowledge necessary to structure an industrial proposal in logical stages. An analysis of the different forms of letters of transmittal, inquiry, bidding specifications and a diagnosis of the financial, technical and management aspects of a proposal leading to a contract. (Lecture-discussion 3 hours.)

## 407. PERT/CPM (3) F,S Grossman

Prerequisites: Industrial Technology 306 or 425,315 and logic. Project planning scheduling and control by critical path method, work breakdown structure, master and control level schedules and milestone charts. Cost optimization through resource allocation. Computer and noncomputer methods presented. (Lecture 2 hours, activity 2 hours.)
408. System Technology (3) F,S Johnson

Prerequisites: Industrial Technology 402, 406. Management and technology of operating a manufacturing company. System planning and analysis; principles and practices of achieving economic control. (Lecture-discussion 3hours.)
409. Senior Problems in Industrial Technology (1-3) F,S Faculty

Prerequisites: Senior standing in industrial technology, consent of instructor. Advanced work of a technical nature within an area of specialization done on an experimental or research basis. (A) Construction Technology, (B) Electronics Technology, (C) Manufacturing Technology, (D) Quality Assurance.

## 412. Production Costing and Budgeting (3) $F$ Johnson

Prequisites: Accounting, calculus, Industrial Technology 306, 402. Estimation of cost data needed for management planning, decision and control functions Standard cost data for forecasting, scheduling, inventory, quotation. Working plan flexible budget, variance controls. (Lecture-discussion 2 hours, laboratory 2 hours.)
414. Construction Proposals and Specifications (3) F,S Kleintjes

Prerequisites: Industrial Technology 300, Finance 222. Principles and methods for developing the technical knowledge to structure a construction proposal. An analysis of letters of transmittal, inquiry and bidding specifications. (Lecture 2 hours, activity 2 hours.)
416L. Computer Applications-Advanced Laboratory (1) F Krauser
Prerequisite: Industrial Technology 315. Analysis of problems in construction, manufacturing, electronics and quality assurance. Individual and group projects. (Laboratory 3 hours.)

## 417. Construction Planning and Scheduling (3) F,S Grossman

Prerequisites: Lower division construction courses, Industrial Technology 315 321 (may be taken concurrently). Planning, scheduling and control by graphic charts and PERT/CPM networks. Resource allocation and leveling. Manual and computer methods. Field trips. (Lecture 2 hours, activity 2 hours.)

## 422. Electrical Equipment for Buildings (3) F,S Kleintjes

Prerequisite: Lower division construction requirements met or in progress, Industrial Technology 302 (may be taken concurrently). Principles and current practices in the application of electrical equipment and material utilization, sound and signal systems, illumination, vertical transportation and energy management. (Lecture 2 hours, activity 2 hours.)
423. Site Analysis (2) F Kleintjes, Faculty

Prerequisites: Lower division requirements, Civil Engineering 225. Detailed analysis and investigation of construction sites. Economics and feasibility of land development. Field trips. (Lecture-discussion 1 hour, activity 2 hours.)
424. Construction Equipment (2) F,S Kleintjes, Faculty

Prerequisite: Civil Engineering 225. Characteristics, capabilities, limitations, economics and utilization of general building and heavy construction equipment. (Lecture-discussion 1 hour, activity 2 hours.)

## 425. Construction Methods (3) F,S Kleintjes

Prerequisites: Industrial Technology 304, 323 (may be taken concurrently) Current practices in structural design, fabrication, and erection; materials, methods and equipment used in industrial, commercial and heavy construction. Field trips. (Lecture 2 hours, activity 2 hours.)

## 427. Construction Law (3) F,S Faculty

Prerequisites: Finance 222, Industrial Technology 317, senior standing Contractors license laws; mechanics lien laws; real estate and subdivision law public works projects bid and bond requirement, OSHA: administration, enabling legislation and penalties; citations and appeals; current litigation and legal trends in affirmative action and minority subcontractor quotas, design professional's liability. (Lecture-discussion 3 hours.)

## 435. Construction Project Management (3) F,S Grossman

Prerequisites: Lower division construction requirements, Industrial Technology 321, 407 and business law. Theory and techniques of construction management including California Contractors licensing requirements and construction law. (Lecture-discussion 3 hours.)
442. Computer Circuits (2) $S$ Johnson, Krauser

Prerequisites: Industrial Technology 342, Philosophy 170 or 270. Analog and digital computers, with emphasis on digital systems, number systems and computer logic, control, arithmetic and memory devices. (Laboratory included.)

## 443. Electronic Systems (3) $S$ Harriston

Prerequisite: Industrial Technology 342. Block diagram approach to electronic systems, including computers, guidance, process control, data handling, navigation. (Lecture-discussion 3 hours.)

## 444. Advanced Electronic Communications (3) $S$ Faculty

Prerequisite: Industrial Technology 342. Advanced communications, telemetry radio, radar, microwave, navigational and laser systems. (Lecture-discussion 3 hours.)

## 445. Microelectronics (2) $F$ Johnson

Prerequisite: Industrial Technology 342. Design, processing and applications of monolithic and hybrid microcircuits for analog and digital systems. (Lecture 2 hours.)

445L. Microelectronics Laboratory (1) F,S Johnson
Prerequisite: Industrial Technology 342; recommended: concurrent enrollment in Industrial Technology 445. Laboratory experience in the processing of thick-film materials, ultrasonic and thermo-compression wire bonding and laser resistive trimming. Practical application and equipment utilization is emphasized. (Laboratory 3 hours.)

## 466. Welding Metallurgy (1) F,S Brice, Faculty

Prerequisite: Industrial Technology 361. Theory and applications of current and emergent joining processes with consideration of weldability of metals and thermal

## 466L. Welding Metallurgy Laboratory (1) F,S Brice, Faculty

Prerequisite: Industrial Technology 466. Applications of current and emergent joining processes with considerations of weldability of metals and thermal effects on properties. Welding techniques in selected processes exercised in laboratory (Laboratory 3 hours.)

## 469. Quality Assurance II (3) S Hayes

Prerequisite: Industrial Technology 369. Management aspects of quality assurance organizations, planning, controlling, directing and maintaining quality functions. (Lecture-discussion 3 hours.)

## 470. Testing of Materials (2) S Faculty

Prerequisite: Industrial Technology 369. Testing of materials, including both destructive and non-destructive procedures. (Lecture 1 hour.)

470L. Testing of Materials Laboratory (1) S Faculty
Prerequisite: Industrial Technology 470. Laboratory exercises in the use of test equipment both destructive and non-destructive. (Laboratory 3 hours.)

## 490. Electronic Packaging and Design (3) S Harriston

Prerequisites: Industrial Technology 301, 306. An in-depth study of the techniques, processes and materials used in the design and packaging of electronic systems. Covers the fabrication of printed circuit assemblies, conformal coating techniques and materials, automated system assembly of electronic equipment, potting and encapsulating techniques for electronics. (Lecturediscussion 2 hours, laboratory 2 hours.)

## 491. Problems in Production Technology (1-3) F,S Johnson

Prerequisites: Industrial Technology 402, 406; senior standing,recommended industrial experience. Problems in production technology: current problems in industry will be identified, solutions proposed and evaluated and recommendations developed and presented. (Discussion to be arranged.)
492. Advanced Studies in Technology (3) F Faculty

Prerequisite: Consent of instructor. Advanced work done within the area of specialization designed for the industrial technologist who desires upgrading in his or her field of concentration. Covers new information in or related to industrial technology. May be repeated for a maximum of six units provided the subjects are not the same.

## International Programs

## The California State University and Colleges' Year Abroad

The California State University and Colleges (CSUC) offers opportunities for students to pursue their studies at a distinguished foreign university or special program center. Under the auspices of the CSUC Office of International Programs, participants in this program are concurrently enrolled at their home campus, where they earn academic credit and maintain campus residency, and at an overseas institution of higher education.

Cooperating universities abroad include the University of Provence, France; the Universities of Heidelberg and Tubingen, Germany; Hebrew University of Jerusalem in Israel; the University of Florence, Italy; the Universidad Ibero-Americana, Mexico; the Universidad Católica, Peru; the Universities of Granada and Madrid, Spain; the University of Uppsala, Sweden; Lincoln University College of Agriculture and Massey University, New Zealand; and Waseda University of Japan. In the United Kingdom, cooperating universities (which may vary from year to year) include, among others, Aberdeen, Edinburgh, Bangor, Heriot-Watt, Leicester, London, Manchester, Oxford, Liverpool, Lampeter, Sheffield, and Strathclyde. In addition, CSUC students may attend a special program in Taiwan, Republic of China, or an architecture program in Copenhagen, Denmark

Eligibility for application is limited to those students who will have upper division or graduate standing by September, 1980 at a CSUC campus; who have demonstrated the ability to adapt to a new cultural environment; and, who, in the cases of France, Germany, Mexico, Peru and Spain, will have completed at least two years of college level study in the language of instruction at the host university, or possess equivalent knowledge of the language. At the time of application, students must have a minimum cumulative grade point average (g.p.a.) for all college-level work of 2.75, except for the programs in Israel, New Zealand, Peru and the United Kingdom where a minimum g.p.a. of 3.0 is required. Selection is competitive and is based on home campus recommendations and the applicant's academic record. Final selection decisions are made by a statewide committee of faculty members, except for the programs in New Zealand and the United Kingdom where final selections are made by the respective host universities,

The International Programs supports all tuition and other academic and administrative costs overseas for each of its participants to the same extent that such funds would be expended to support similar costs in California. Students assume costs for pre-departure orientation, insurance, transportation, housing and meals. Home campus registration and other fees and personal incidental expenses or vacation travel costs while abroad are also paid by the student. Non-resident students are subject to non-resident fees. 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. International

Programs participants may apply for any financial aid available at their home campuses, except for campus work-study.

Applications for the 1980-81 academic year must be submitted before February 9, 1980, except for New Zealand and the United Kingdom. Applications for the New Zealand program must be submitted by May 11, 1980, for participation during calendar year 1981. (The academic year in New Zealand begins in February and ends in October.) United Kingdom applications must be submitted by January 5, 1980.

Detailed information and application materials may be obtained from the International Education Center, this University; further information may also be obtained by writing to The California State University and Colleges International Programs, 400 Golden Shore, Suite 300, Long Beach, California 90802.

## IS 192. Projects in Study Abroad: (subject)

Open only to students in the California State University and Colleges International Programs. Study undertaken in a university abroad under the auspices ot the callitomins site unvestily anc colleges.

## IS 492. Projects in Study Abroad: (subject)

Open only to students in the California State University and Colleges International Programs. Study undertaken in a university abroad under the auspices of the California State University and Colleges.

## Summer Session at the University of Uppsala

The University sponsors and serves as the administrative center in the United States for an International Summer Session, offered each year by the University of Uppsala in Uppsala, Sweden. This six-week session, scheduled for the second half of June and the full month of July, is open to college graduates and to undergraduates who have completed their college freshman year. Courses are offered in history, marketing, political science, sociology, literature and art, al taught in English by Uppsala and guest European professors. Swedish language instruction is also offered. Each course carries three units of credit. Two courses, or a total of six units, may be taken during the session. For students of this University, all courses have been approved in advance for transfer credit

Tuition and board and room for the six weeks are approximately $\$ 860$. This excludes transportation and personal expenses of the student.

Course descriptions, additional information and application forms are available from the Coordinator of International Programs, International Education Center.

## International Student Programs

International student programs include courses for students whose cultural background is different from that of the United States or for whom English is a second language. There are two types of courses: Foreign Student courses which give general education credit for foreign students who will be returning to their country after graduation and American Language Program courses which give language instruction for both foreign and immigrant students.

For admission requirements, including the Test of English as a Foreign Language (TOEFL), see section on admissions.

## Foreign Student Classes

Courses in American culture and institutions are available for students from foreign countries. Foreign Students 205A-B meets the university's general education requirements in United States history, government and Constitution for students not permanently residing in the United States. Permission to register for these classes is granted by the International Education Center.

## American Language Program

The American Language Program is a series of semi-intensive courses in English as a second language. For further information and course descriptions see the School of Hum anities.

## Foreign Student Courses

## Lower Division

## 105. Introduction to American Higher Education (3) F,S Faculty

Orientation to the American campus and classroom. Review of the American systems of education, including goals and the degree process. Familiarization with contemporary social and educational problems. Limited to students for whom the U.S. is a foreign country and culture.

## 205A-B. Introduction to America, Its History, Government and People

 F,S FacultyDevelopment of the political and social structures of America. Emphasis on the events which have influenced the shape of the United States. Limited to foreign visa students intending to return to their homeland upon graduation. Students must enroll for both semesters for credit.

## Upper Division

305. Introduction to American Higher Education (3) F,S Faculty

Orientation to the American campus and classroom. Review of the American systems of education, including goals and the degree process. Familiarization with contemporary social and educational problems. Limited to students for whom the U.S. is a foreign country and culture

## Foreign Study Programs

Foreign study courses are offered as summer session or as extension classes through the Summer Session Office or the Extended Education Office respectively Particular programs are described in the Summer Session Bulletin Schedule or in Operation Outreach, the Extension schedule, and in separate announcements Each one appears as an offering of the course(s) Foreign Study 100, 200, 300 or 400 (1-6 semester units), with the particular departmental sponsorship specified for each class. Credit earned in a summer session offering of the course is credit earned "in residence". Credit earned in an extension offering of the course is "extension credit". A student may apply no more than 12 units of credit in such foreign study courses toward a baccalaureate degree. Such courses may not be used to meet requirements for a major except with the approval of the majo department. Foreign study courses are separate and distinct from Internationa Programs, The California State University and Colleges "Year Abroad."

## Department Chair: Mr. Ben Cunningham

Emeritus: Robert A. Steffes.
Professors: Bliss, Cunningham, Gayer, Stein, Wells.
Associate Professors: Ferrell, Garvey, Kelly, Stone.
Credential Adviser: Mr. James Bliss.
Academic Advising Coordinator: Mr. Ben Cunningham.
The Journalism Department offers five major programs leading to the bachelor of arts degree: option one for a career in newspaper journalism, option two for magazine journalism, option three for broadcast journalism, option four for public relations and option five for the teaching of journalism. The teaching option meets the requirements for the standard teaching credential with a secondary specialization. It prepares the student to teach journalism and advise studen publications on the secondary school level.

The department produces a daily laboratory newspaper, magazine and contributes news to the campus radio station

The Journalism Department also maintains a placement service to help graduates and alumni find jobs in journalism.

## Major in Journalism for the Bachelor of Arts Degree

## Newspaper Option (code 2-6461)

A minimum of 28 and a maximum of 32 journalism units, of which at least 14 must be upper division. Students will also be counseled into 15 units of study outside of journalism designed to aid in reaching their professional odjectives,
Lower Division: Journalism 110, 120, 222A or B, 230.
Upper Division: Journalism 320, 322A or B, 420, 430 and one or more of the following: $312,315,330,412,418,419,494$ or 498.
Recommended additional courses: Journalism 115, 251, 352, 380, 428, 431, 460 and 490.

## Magazine Option (code 2-6465)

A minimum of 28 and a maximum of 32 journalism units, of which at least 14 must be upper division. Students will also be counseled into 15 units of study outside of journalism designed to aid in reaching their professional objectives.
Lower Division: Journalism 110, 120, 237, 251, 262A or B
Upper Division: Journalism 355, 430 and three or more of the following: 315, 350, 362 A or $\mathrm{B}, 412,418,494$ or 498
Recommended additional courses: Journalism 115, 280, 328,376, 380, 431, 490 and 498

## Broadcast Journalism (code 2-6460)

A minimum of 28 and a maximum of 32 journalism units, of which at least 1 must be upper division.
Lower Division: Journalism 110 and 120 and one of the following: Radio-TV 207, 208 or 210.
Upper Division: Journalism 321,325,382A, 430 and one or more of the following: 312, 315, 412, 418, 494 or 498.
Recommended additional courses: Journalism 115, 320, 382B, 420, 431, 490 and Speech Communication 271.

## Teaching Option (code 2-6836)

A minimum of 24 units and a maximum of 32 units in journalism, at least 12 of which must be in upper division, selected in consultation with an adviser. These must include Journalism 110, 120, 230, 322 A or B , and 460 . Additiona recommended courses include Journalism 115, 270, 280, 312, 320, 422A or B, 430, 431,490 and 499.

To qualify for a credential that will authorize the teaching of journalism in California public schools, a student must complete journalism requirements specified above, in addition to a prescribed program of courses in English and/or comparative literature (about 26 units); education ( 24 units); health science ( 3 units) and speech communication ( 3 units).

## Public Relations Option (code 2-6837)

A minimum of 28 units and a maximum of 32 units in journalism. Journalism units, at least 18 of which must be in upper division, shall be selected in consultation with an adviser. These must include Journalism 110, 120, 270,375, 376, 378,430 and either 470 or 471 . At least one additional course must be chosen from Journalism 312, 412, 419, 460, 494, 498 and 499. Additional recommended courses include Journalism 222, 237, 251, 280, 322,328,355,362,380,382, and 490. Students will also be counseled into 15 units of study outside of journalism designed to aid in reaching their professional objectives.

## Minor in Journalism (code 0-6835)

A minimum of 18 units including:
Lower Division: Six to nine units, which must include Journalism 110 and 120. Additional three units may be selected from Journalism 115, 230, 270 and 280.
Upper Division: Nine to 12 units, which must include a minimum of six units from one option within the journalism major.

## Lower Division

## 110. Introduction to Mass Communications (3) F,S Bliss, Garvey, Kelly, Stone

Origins, development and contemporary role of newspapers, magazines, radio, television, books, and films, and such related fields as advertising and public relations. (Lecture, discussion 3 hours.)

## 115. History of American News Media (3) F,S Wells

American news media from colonial times to the present day. Effects of print and broadcast journalism on political, social and economic life. Progress toward free and responsible news media. (Lecture, discussion 3 hours.)
120. News Writing and Reporting (3) F,S Ferrell, Stein, Wells, Faculty

Prerequisite: Ability to type. Study of news sources, reporting and interviewing methods and news writing; ethics and responsibilities of the reporter. Practical exercises in reporting and writing news and preparing copy for publication.
180. Introduction to Photojournalism (2) F,S Faculty

Photography for the photojournalist, writer or editor. Course covers operational techniques of cameras, films and fundamental approaches to producing pictures for newspapers and magazines. Skills are developed through practical exercises in news coverage with laboratory instruction. Laboratory fee required. (Activity, 4 hours.)

222A,B. NewspaperProduction (1,1) F,S Wells
Prerequisites: Journalism 120, 230, or consent of instructor. Participation in the publication of the University newspaper. The Forty-Niner. Includes reporting, writing, photography, art, copyreading, proofreading, advertising and business. (Laboratory 3 hours.) Maximum credit 2 units.
230. Copy Editing and Makeup (3) F,S Bliss, Wells

Prerequisite: Journalism 120 or consent of instructor. Study of methods and practice in preparing copy for publication, including editing, headline writing and handling wire copy. Editorial aspects of newspaper makeup and design.
237. Magazine Making and Editing (3) F,S Faculty

Fundamental principles of periodical publication and methods of editing, manufacturing and distributing magazines of every type. The course includes practical training and instruction in editorial work, such as editing, writing, proofreading, makeup and headline writing. Attention also is given to production problems of the modern-day magazine.
251. The Feature Article (3) F,S Faculty

Prerequisite: Journalism 120 or consent of instructor. Covers the feature article for both newspapers and magazines and their free-lance markets. Close attention is given to style, organization, human interest, the use of quotes, leads and article ideas. The emphasis is on clear, readable prose. Writing assignments both in and out of the classroom.

262A,B. Magazine Production (1,1) F,S Faculty
Prerequisite: Journalism 237 or 355 . Practical experience in magazine and publications planning, organization, writing, photography, art, layout, advertising and production. Supervised work on the University magazine, UniverCity. (Laboratory 3 hours.)
270. Introduction to Public Relations (3) F,S Gayer

Public relations fundamentals: research, action, communication and evaluation. Study of special publics, the use of public relations tools, planning a public relations program. Not open to students with credit in Journalism 370.
280. Intermediate Photojournalism (2) F,S Kelly

Prerequisites: Journalism 180, Industrial Arts 101 or consent of instructor. Techniques of photojournalism as used in newspapers, magazines and public relations with emphasis on the news and communication values in pictures. Experience with various types of photography equipment. (Lectures, demonstrations, field trips and practical assignments, journalism activity 4 hours.)

## Upper Division

## 312. The Foreign Press (3) $F, S$ Stein

An analysis of the world's news media with emphasis on their structure ownership, social and political roles and the degree of government pressure and control. Particular attention is paid to the position of the media in developing nations. Examination of the methods and problems of the American foreign correspondent.
315. Journalism as Literature (3) S Faculty

Study of "literature under pressure" from 16th century to the present, concentration on works of "New Journalism"' by Norman Mailer, Gay Talese, Tom Wolfe, Larry L. King, et al

## 320. Reporting Public Affairs (3) F,S Wells

Prerequisite: Journalism 120 or consent of instructor. News coverage of police, courts and city, county, state and Federal government. Study and practice in methods of investigative reporting. (Reporting and writing practice 3 hours.)

## 321. Television News Writing (3) F,S Garvey

Prerequisite: Journalism 120 or consent of instructor. Techniques of gathering writing and editing news for television, including practice with wirecopy, field reporting with camera and sound crew and still pictures. Preparation and presentation of newscasts in laboratory.

322A,B. Advanced Newspaper Production (2,2) F,S Wells
Prerequisites: Journalism 120, 230 or consent of instructor. Advanced practice in editing, reporting, feature writing, copyreading, news photography and other journalistic activities through participation in the publication of the University newspaper. (Laboratory 6 hours.)

## 324A,B. Photography for Publication (2,2) F,S Kelly

Prerequisites: Journalism 280 and 380 or consent of instructor. Students with qualifying photo skills will comprise staff of Forty-Niner newspaper. Staffers will be responsible for photographic coverage of campus news and feature events for daily and special edition use. Photographers will practice techniques of newspaper photography through assigned stories as well as personally developed enterprise stories. Individual approach and skills are assessed daily, with staff efforts analyzed at weekly photo conference. Students must provide own camera. (Laboratory 4 hours.)
325. Radio News Writing and Reporting (3) F,S Garvey

Prerequisite: Journalism 120 or consent of instructor. Techniques of gathering, writing and editing news for radio, including practice with broadcast wire copy, tape recorders and beeper telephone. Preparation and presentation of newscasts in laboratory. (Activity 2 hours.)
328. Business and Industrial Writing (3) S Faculty

Prerequisite: Journalism 120 or consent of instructor. Focus on the special areas of writing and editing business and industrial periodicals. Special attention will be paid to the vast number of trade publications.

## 330. Advanced Newspaper Make Up and Editing (3) F,S Wells

Prerequisites: Journalism 120,230. Study of modern techniques of newspaper design and layout. Theory and practice in the use of pictures, headlines and type to produce attractive newspaper pages while using available news space effectively. (Lecture-discussion 1 hour, laboratory 4 hours.)
350. Contemporary Magazines (3) F Faculty

Development of the magazine and its significance in American life. Periodical types, editorial policies and literary stature. Special study of magazines in a field of the student's particular interest. (Lecture, discussion 3 hours.)

## 352. Editorial and Critical Writing (3) S Faculty

Prerequisite: Journalism 120 or consent of instructor. Organization, language and content of editorials, columns and other opinion articles. The course will also deal with critical reviewing.

## 355. Magazine Article Writing (3) F, S Gayer, Stein

Techniques of writing non-fiction articles with a view toward potential sales to magazines, newspaper syndicates and Sunday supplements.

362A,B. Advanced Magazine Production (2,2) F,S Faculty
Prerequisite: Journalism 237 or 355. Advanced magazine editing, writing, photography, art and production. Participation in publishing the University magazine, UniverCity. (Laboratory 6 hours.)
375. Publicity Techniques and Procedures (3) F Faculty

Prerequisites: Journalism 120, 270. Recognizing publicity potentials and writing press releases; how to work with the press and other mass communications media for publicity purposes. Not open to students with credit in Journalism 475.

## 376. Publications for Public Relations (3) F,S Faculty

Prerequisites: Journalism 120, 270. Techniques of writing, editing and publishing newsletters, business newspapers and magazines as communication tools for public relations. Not open to students with credit in Journalism 476.
378. Public Relations for Business and Industry (3) F,S Faculty

Prerequisite: Journalism 270. The use of public relations by business and industry. Application of public relations techniques to the distribution and sale of products and services from the manufacturer to the consumer. Analyzing audiences, creating programs and preparing budgets. Working with the media.

## 380. Advanced Photojournalism (3) $S$ Kelly

Prerequisite: Journalism 280 or consent of instructor. Photographic reporting with a camera. In-depth study of photojournalism with emphasis on creation of photo story ideas, photo essays and feature photos; photo editing and layout as applied to newspapers and magazines.

382A-B. Broadcast News Production (2,2) F,S Garvey
Prerequisites: Journalism 120, 325 or consent of instructor. Reporting, writing and editing of news for broadcast with emphasis on preparation of news copy for the campus radio station (KSUL) and/or other broadcast stations. (Lecture 1 hour, laboratory 6 hours.)

## 412. Theories of Mass Communication (3) F Stone

Prerequisite: Journalism 110 or consent of instructor. Contem porary theories of mass communication. An overview of the development of communication theory as it relates to the mass media. Evaluation of classical and modern theories of the communication process through analysis of the original research upon which the theories were founded. Source, message and audience effects of the communication process.
418. Current Trends in Mass Communication (3) F,S Stone

Discussion of the effects of social trends on the media. A thorough examination of the current state of the mass media in the United States and their relationship to the various political, cultural and social institutions in our society.
419. Precision Journalism (3) $S$ Stone

Prerequisites: Journalism 120 or consent of instructor, junior standing or above Advanced reporting techniques of the modern news reporter and broadcast journalist. Information gathering methods based on social science research skills adapted for the mass media of communications. Team investigation of local public issues through surveys, analysis of public documents, experimental design and content analysis of official reports.
420. Reporting of Urban Problems (3) F,S Ferrell

Prerequisites: Journalism 120 and 320 or consent of instructor. An advanced course in investigative and interpretive reporting. Students will work in an editorreporter relationship with the instructor in researching and writing depth pieces on such complex issues as mass transit, air pollution, city government, poverty, crime, housing and drug abuse. Investigative and interviewing techniques will be stressed

## 422A,B. Senior Media Production (1,1) F, S Ferrell

Prerequisite: Consent of instructor. Advanced work on campus information media. May include writing, editing, photography, layout or news broadcasting.

## 428. Newspaper Management (3) S Faculty

Prerequisite: Nine units of journalism. Management side of newspaper publishing, including newspaper organization, budget, personnel, equipment, business accounting, advertising sales and production, labor relations, postal regulations, legal problems and newspaper management techniques.

## 430. Law of Mass Communications (3) F,S Cunningham

Principles and case studies of the law of the press, radio and television with emphasis on constitutional guarantees, libel, contempt, privacy, copyright privilege and other laws affecting the news media. (Law-case study 3 hours.)

## 431. Ethical Problems of the News Media (3) F,S Cunningham

The study of ethical codes and value systems used in writing, editing, producing and presenting the news in the United States today. Case studies of current ethical problems confronting print and broadcast journalists with emphasis on how the student solves each problem.

## 455. Advanced Magazine Article Writing (3) $S$ Stein

Prerequisite: Journalism 355. Writing of fully developed magazine articles. At least one major, publishable article and at least two other pieces will be required. Heavy stress will be placed on article ideas, research and sophisticated interviewing techniques. Designed especially for students who plan to earn all or part of their income through freelance writing. Professional standards.

## 460. Newspaper Advertising (3) $S$ Faculty

Advertising principles, layout and copy writing as they apply to the professional newspaper. Theory of retail and national display advertising, classified advertising and legal advertising. Practice in the preparation of newspaper advertising.

## 470. Institutional Public Relations (3) $S$ Faculty

Prerequisite: Journalism 270 or 370 . Study of the structure, methods and functions of an internal corporate public relations department either as a separate entity or in association with an external public relations agency.
471. Agency Public Relations (3) F Faculty

Prerequisite: Journalism 270 or 370 . The public relations agency, its structure and its function as a counseling and consulting service in planning and communicating for industry, government and organization clients.

## 480. Advanced Picture Editing (3) F,S Kelly

Prerequisites: Journalism 210, 230 and 280 or consent of instructor. Principles of picture selection for newspaper and magazine publication. Emphasis on preparing material-written and visual-for use as single picture or layout presentation. (Laboratory 9 hours.)
490. Special Topics in Mass Communications (1-3) F,S Cunningham

Topics of special interest in mass communications selected for intensive study. Topics will be announced in the Schedule of Classes. May be repeated for a total of six units.

## 494. Research Methods in Mass Communications (3) S Stone

Prerequisite: Consent of instructor. Basic techniques of research in mass communication and mass media. Overview of theory building and hypothesis testing procedures as applicable to current problems in the mass communication field. Scientific methods, survey and experimental design, field studies, analysis of data.

## 498. Internship (3) F,S Cunningham

Prerequisite: Consent of department chair. Work of an editorial or writing nature at least one full day a week with cooperating newspaper, magazine, broadcast and public relations organizations in the Los Angeles-Orange County area. Work edited and evaluated by supervisors of the participating media firms. Additional oncampus meetings for discussion of progress and problems.
499. Special Projects (1-3) F,S Faculty

Prerequisite: Advance approval of project by the department. Research in the field of journalism in newspaper, magazine, public relations, advertising or other related fields. Open to journalism majors only. Student must meet once a week with the instructor.

## Language Skills

## Director: Mrs. Kakwasi Somadhi

Language Skills 170A and 170 B are courses devoted to helping students improve their use of structural grammar, write well-structured sentences, write well-planned, coherent, unified and detailed paragraphs and, particularly during 170B, learn to write critically analytical papers based on reading material which is an integral part of the two-semester class. Passing of both 170A and 170B is equivalent to the passing of English Composition 100. Student may accomplish this by taking both $170 A$ and $B$ and receiving a passing grade in each, or by successfully passing a special qualifying examination. This examination is administered by the Language Skills Area.

170A. Language Skills (3) F,S Faculty
The first semester course focuses on the intensive development of grammatical skills with some expository writing.

170B. Language Skills (3) F,S Faculty
The second sem ester course focuses on organizational methods and techniques for writing compositional and expository prose, advanced grammar and some critical reading techniques for term papers.

## Latin American Studies

Director: Dr. Robert Harm an (Anthropology).
Professors: Atherton (Economics),Cárdenas (Spanish-Portuguese), DeLong-Tonelli (Spanish-Portuguese), Delorme (Political Science), Dixon (Anthropology), Donahue (Spanish-Portuguese), Inostroza (Spanish-Portuguese), Key (Anthropology), McCorkle (Anthropology), Marin (Spanish-Portuguese), Nichols (History), J.R. Powell (Economics), Sater (History), Svec (History), Trinidad (Spanish-Portuguese)
Associate Professors: Archuleta (Spanish-Portuguese), Bush (Comparative Literature), H. Cannon (Spanish-Portuguese), Debysingh (Geography), J. Gregory (Anthropology), Harman (Anthropology), K. Jones (Art), Osuna (MexicanAmerican Studies), Ramirez (Mexican-American Studies), Sanchez (Mexican American Studies), Schmitt (Spanish-Portuguese).
Assistant Professors: M. Farrell (Economics), Lopez (Mexican-American Studies).
Latin American Studies administers an interdisciplinary program which offers students interested in this field the opportunity to pursue courses leading to a Certificate in Latin American Studies. Courses used to meet this certificate requirement may be counted also, where applicable, toward the General Education requirement and the major and teaching minor requirements of the cooperating departments.

Students interested in pursuing a master's degree emphasizing Latin American studies should read the section in this Bulletin entitled Special Major (Interdisciplinary Studies) and consult the Director of Latin American Studies.

Requirements for the Certificate in Latin American Studies

1. A bachelor's degree with a major in a traditional discipline.
2. 26 units distributed as follows:
(a) Spanish 201A,B $(4,4)$.
(b) Core (required of all students) of 12 units: three units of anthropology selected from Anthropology 323, 324 or 345, three units of geography selected from Geography 321 or 322, three units of history selected from History 162A, 162B, 362, 364, three units of political science selected from Political Science $358,359,459$ or 461.
(c) Electives totaling six units from fields other than the student's major selected in consultation with an adviser from the following (cannot duplicate courses taken in the core): Anthropology 323, 324, 345; Art 393AB; Comparative Literature 440; Geography 321, 322; History 162A,B, 362, 364, 433, 462, 463, 464, 465, 467, 473A; Mexican American Studies 305, 312, 380, 400, 420, 425; Political Science 358, 359, 459, 461; Spanish 312, 313, 314, $337,338,411,440,445,450,451,457$ and courses in Spanish literature as permitted.
Interested students should apply to the Director of Latin American Studies in Psychology 141.

## Legal Studies in the Liberal Arts

## Director: Dr. Albie Burke.

The Certificate Program in Legal Studies in the Liberal Arts is designed to promote an interdisciplinary study of law as a liberal art. The certificate may be earned in conjunction with any baccalaureate degree. It is especially useful to students preparing for careers in government service, business, journalism and education. Courses selected by the student for the certificate may be the same as those used to satisfy major, minor, credential or general education requirements. The program does not duplicate professional legal or para-legal education, nor does it equip a person to practice law. It is not the prescribed prelaw program of the University although prelaw students may elect to earn the certificate as part of a total prelegal program advised by their counselors.
Requirements for the Certificate in Legal Studies in the Liberal Arts

1. A baccalaureate degree.
2. A cumulative grade point average of 3.0 in all courses in the student's approved certification program.
3. Twenty-one units which must include History 489, Political Science 318 or 414 , Philosophy 351 or 352 and at least 12 additional units selected from the secondary and specialized courses listed below. The 21 units must include courses from a minimum of five departments. No more than 12 units may be in the candidate's major.
4. Project paper ( 3 units). To be written ideally upon completion of all course work or during the last semester of the senior year, under the supervision of at least two faculty members participating in the certificate program.
The paper can be either an exploratory project (in which a subject is researched in a detailed and original manner) or an analytic effort (where fewer sources are used but the discussion of the material is developed more fully).
It is strongly recommended that students take required courses first and then elective courses. The choice of electives is unrestricted: they may all be secondary or all specialized courses. The selection of electives should be made in consultation with an adviser who helps prepare a program. Thus the plan of study should have a focus and be directed toward the subject on which the student will write in the research paper.

Secondary courses: Anthropology 303, 403; Economics 430; History 455A,B 479A,B; Political Science 314, 315, Sociology 335 (or Psychology 351), 441 Specialized courses: Criminal Justice 301, 351; Economics 340, 355, 440; Political Science 376, 412, 415, 424; Finance 222, 324, 326, 444
Interested students should apply to the Director, Program for Legal Studies in the Liberal Arts, Dr. Albie Burke, History Department.


## Liberal Studies

## Liberal Studies Major for the Bachelor of Arts Degree (code 2-0410)

## Liberal Studies Program Certificate

Students declaring liberal studies as their major will complete the liberal studies core and one approved concentration. Students declaring any other baccalaureate major offered by the University may complete the core and earn the Liberal Studies Program Certificate. The program is supervised by the Liberal Studies Governing Committee reporting to the Associate Vice President for Academic Affairs Instructional Programs.

CORE: A total of 84 units distributed in four areas: (1) English and American Language and Literature (18-21); (2) Mathematics, Biological and Physical Science (21-24); (3) Behavioral and Social Science (21-24); (4) Humanities, Fine Arts and NonEuropean Cultures (21-24). Completion of the Liberal Studies Core waives the subject matter competency examination for the preliminary multiple subject credential.

CONCENTRATION: A minimum of 24 units in one liberal studies discipline; 15 units must be upper division; 12 units may be used in both the concentration and the core

The core meets all of the University requirements in general education. Courses taken at other colleges that are accepted by the department concerned as equivalent to courses in concentrations and in the core may in all cases be substituted for courses in this program. Core requirements in the area of a student's major or concentration may be replaced by courses more appropriate to that major or concentration, with the approval of the Liberal Studies Governing Committee. All equivalencies, substitutions or waivers of requirements must be approved by the Liberal Studies Governing Committee.

Liberal studies majors may devote all or part of their elective units beyond the concentration and core to such applied programs as the 24 units in professional education required for the multiple subject credential. Although a second concentration is not required, liberal studies majors may elect a second approved concentration or may propose a second concentration that is interdisciplinary, interschool or in other respects tailored to individual objectives.
All liberal studies majors and students planning to earn the Liberal Studies Program Certificate should obtain early advisement in the Academic Advising Center, Library E-106.

## Major in Liberal Studies for the Bachelor of Arts Degree

Students in this degree program must complete the core and one approved concentration. Approved concentrations include:

American Indian Studies
American Studies
Anthropology
Art
Asian American Studies
Bilingual Spanish/English
Blology
Black Studies
Comparative Literature
Economics
English
French
Geography

Geology
German
History
Human Development
Latin American Studies
Mathematics
Mexican American Studies
Music
Philosophy
Psychology
Religious Studies
Sociology
Spanish
Speech Communication
Consult the Liberal Studies advisers about requirements in each concentration and about additional concentrations that may be available.

## 300. Introduction to Liberal Studies (3) F,S Faculty

Introduces students to multidisciplinary studies as included in the liberal studies major. Emphasis on understanding the character of major fields of knowledge and on the interrelationship of language arts, humanities, fine arts, natural and social sciences.

CORE: A total of 84 units distributed as specified in Areas I, II, III and IV following. Note that taking the minimum 18 units in Area I means that 24 units should be taken in at least one other area.

Area I: English and American Language and Literature (18 unit minimum). Required: English 100, and either English 184 or 180. Courses to complete the 18 unit minimum must be selected from the following groups: (A student electing to take 19-21 units in Area I may choose three units from the following listed courses or from other offerings in the English and Speech Communication Departments.)
Group 1. Composition and/or Analysis of Literature
English 205, 206, 300, 310, 317, 405, 406, 407, 415, 481, 482; Black Studies 450; Mexican American Studies 460A,B. No more than one course may count toward the 18 unit minimum .
Group 2. Grammar, Language Structure or Linguistics
Anthropology 170, 414; English 320 or 325, 420, 421, 423, 425, 426; Speech Communication 448; Communicative Disorders 361, 478. English 320 or 325 is required for the Multiple Subject Credential. No more than two courses may count toward the 18 unit minimum
Group 3. Speech Communication
Speech Communication 130, 132, 133,246, 271, 332, 333, 335, 352, 358, 446. No more than two courses may count toward the 18 unit minimum.
Group 4. English and American Literature
American Indian Studies 340; English 250A, 250B, 363, 370A, 370B, 385, 386, 398, 467A, 467B, 468A, 468B, 475, 476, 477A, 477B, 478; Mexican American Studies 205. No more than two courses may count toward the 18 unit minimum.

Area II: Science and Mathematics (21 unit minimum). Required: two courses from each of Groups 1-3, as specified following.
Group 1. Mathematics
Mathematics 110 and 111, or 110 and one from $114,115,116,180$. Advanced mathematics students may take two courses from the 114, 115, 116, 180
sequence. Credential students should complete 110 and 111 before seeking admission to the elementary education professional courses if possible.
Group 2. Biological Sciences
One course from Biology 200, 212, 216. A second course is required and may be selected from biology or microbiology offerings or Geography 442.
Group 3. Physical Sciences
One course from Chemistry 100, 111A, 200; Physics 100A, 104; Geology 102 together with 104 or 105; Geology 103 together with 104 or 105. A second course is required from chemistry, geological sciences or physics offerings (including astronomy) or Geography 140, 440, 444.

## Group 4. Electives

Remaining units toward the 21 unit minimum in Area II may come from appropriate courses in mathematics, biology, microbiology, chemistry, geological sciences, symbolic logic and statistics.
Area III: Behavioral and Social Sciences (21 unit minimum). Required: three courses from Group 1, with at least two disciplines represented; one course from Group 2; one course in U.S. history; one course in U.S. government and constitution. History $162 A, B$ will satisfy both the U.S. history requirement and the following Group 2.
Group 1. Basic theoretical courses showing how social institutions are analyzed and how policy, social and behavioral problems are approached.
Anthropology 100, 120; Economics 200, 201, 300, 368; Geography 100, 160, Political Science 201, 215; Psychology 100, 150; Sociology 100, 142.
Group 2. British, Latin American or European History
History 131A, 131B, 151A, 151B, 162A, 162B.
Group 3. Electives
Additional units toward the minimum 21 in Area III may be selected from appropriate courses offered by Urban Studies, the ethnic studies departments (American Indian Studies, Asian American Studies, Black Studies, Mexican American Studies) or the disciplines listed in Groups 1 and 2 above.

Area IV: Humanities, Fine Arts and Non-European Cultures (21 unit minimum). Required: three courses from Group 1 including one course in art and one in music; two courses in Group 2.
Group 1. Art and Music

## Art 100, 110, 111, 112A, 112B, 300, 302, 400; Music 180, 190, 290, 390.

Group 2. Non-European Cultures
American Indian Studies 100, 101, 320; Anthropology 321, 322, 323, 324, 327, $331,332,336$; Art 113A, 113B; Black Studies 140, 160, 200, 337, 343; Comparative Literature $124,234,325,403$; History 181, 182, 382A, 382B, 383A, 383B, 385A, 385B, 491; Mexican American Studies 380, 420; Music 490; Philosophy 306, 307; Religious Studies 152, 331, 341, 343, 351; History/Religious Studies 481.
Group 3. Electives
Additional units toward the 21 units required in Area IV may be selected from above listed courses or from the Art, Comparative Literature, Music, Philosophy, Theatre Arts, Dance, Religious Studies or foreign languages departments.

## Linguistics

## Director and Graduate Adviser: Dr. Janet B. Sawyer.

Professors: Cardenas, Inostroza, Key, McCone, Penalosa, Sawyer, Thomas, Trinidad.
Associate Professors: Borowiec, Hertz, Ross, Smith.
Assistant Professors: Harman, McCullough.
Course offerings in linguistics are designed to serve students desiring to work in the field professionally as well as those desiring to utilize linguistic know'edge and skills in connection with some other occupation or profession, sucn as teaching or administration.

The curriculum in linguistics is interdisciplinary in nature, the separate courses being offered by various academic departments. Many courses in linguistics for the bachelor of arts degree in the Departments of English and Anthropology are available. The bachelor of arts degree in linguistics is not offered at present.

In addition, students may choose linguistics as their field of concentration for the bachelor of arts degree in liberal studies, or have a personally designed special major for the bachelor of arts degree which is focused upon linguistics.

The program for the M.A. degree in linguistics is designed along interdisciplinary lines within the School of Humanities to accommodate a broad range of student interest in the field of linguistics. The degree program provides for students who are seeking teaching credentials and for those preparing for further graduate work elsewhere. A Handbook for the Master's Degree in Linguistics is available from the director, Dr. Janet B. Sawyer, HOB-408.

Graduate assistantships are sometimes available to qualified students.

## Master of Arts Degree with a Major in Linguistics (code 5-6833) <br> Prerequisites

1. A bachelor's degree which must include upper division units in the following categories:
a. Nine units in linguistics (descriptive linguistics, historical or comparative linguistics, dialectology, ethnolinguistics, psycholinguistics, sociolinguistics).
b. Six units in a foreign language.
c. Nine units of additional Group I Linguistic Courses, Group II Language and Language Related Courses and/or Group III Supporting Courses.
2. Students whose undergraduate prerequisites are inadequate will be required to fulfill these deficiencies before advancement to candidacy. These deficiencies will be determined by the director.

## Advancement to Candidacy

1. Satisfaction of the general University requirements for advancement to candidacy.
2. Approval of the candidate's graduate program by the director

## Requirements for the Master of Arts

1. A minimum of 30 units of approved upper division and graduate courses with at least 24 units in linguistics and in language and language related courses Eighteen units must be approved linguistic courses from Group I
2. Eighteen units of $500 / 600$ level courses with a minimum of 12 fromer Linguistics. The 500/600 level courses must include the following:
a. Six units of descriptive linguistics selected from Anthropology 570, 597, 630; English 525, 620, 623; Linguistics 697
b. Three units of historical linguistics selected from English 521; Spanish 505, 515; Linguistics 697.
C. No more than three units of Linguistics 697 may be used to satisfy degree requirements.
3. A maximum of six units of Group III Supporting Courses may be selected with approval of the director
4. A comprehensive examination is required of all students. The student may elect to write a thesis in addition to this comprehensive examination

## Upper Division and Graduate Level Courses Acceptable

## or the Master's Degree

## Group I Linguistic Courses

## 414. Lingyistic Anthropology (3)

470. Linguistic Methodology (3)
471. Structure of Modern English: Phonology (3)
472. Guided Studies in Linguistics (13)
473. Core Course, Linguistics (3)
474. Directed Readings in Linguistics (3)
475. Seminar in Anthropological Linguistics (3)

## French

414. French Phonetics (3)

## German

303. German Linguistics (3)

## Mexican American Studies

402. Bilingual Linguistics (4)
403. Dialectology of the Southwest (3)

## Psychology

438. Psycholinguistics (3)
439. Structure of Modern English: Morphology and Syntax (3)
440. Topics in English (Linguistics) (1-4
441. Historical Linguistics (4)
442. Analytical Phonology (4)
443. Seminar in Special Topics Linguistics (4)
444. Seminar in Dialect Study (4)

## Spanish

425. Spanish Phonetics and Phonology (3)
426. Spanish Morphology and Syntax (3)
427. Contrastive Analysis of Spanish English (3)
428. History of the Spanish Language (3)
429. Romance Linguistics (3)

## Linguistics

697. Directed Research (1-3)
698. Thesis (2-6)

Group II Language and Language Related Courses
Approved sequence of foreign language courses (other than linguistics).
Anthropology 354. Communications Across Cultures (3)
Anthropology 440. Symbols, Cognition and Culture (3)

English 423.
English 426
English 428.
English 429. English 528. Philosophy 470 Philosophy 484 Psychology 434 Psychology 455.
Sociology 435
Sociology 485

## Semantics (3)

History of the English Language (3)
Applied Linguistics (3)
Language Strategies for Bilingual-TESL Classrooms (3) Current Issues in English as a Second Language (4) Symbolic Logic II (3)
Philosophy of Language (3)
Cognition (3)
Psychology of Persuasion (3)
Symbolic Behavior (3)
Sociology of Language (3)
Group III Supporting Courses (listed under department)

1. Cultural anthropology and English literature courses.
2. Communication and interpretation courses in psychology, sociology and speech.
3. Logic and epistemology courses in mathematics and philosophy
4. Education courses that include the application or practice of linguistic training.

Graduate course descriptions are found in the departmental listings in which they are offered.

## Graduate Courses

697. Directed Research (1-3) F,S Faculty

Prerequisite: Consent of graduate committee. Research in linguistics on an individual basis.
698. Thesis (2-6) F,S Faculty

Prerequisite: Consent of graduate committee. Planning, preparation and completion of a thesis in linguistics.

## Mathematics

## Department Chair: Dr. Arthur P. Gittleman.

Department Vice-Chair: Dr. M. Shafqat Ali.
Professors: Afflack, Ali, Austin, Bachar, Cohen, Fatt, Foster, Gittleman, James, McCullough, McLeod, Manheim, Mardellis, Margulies, Martinez, Schwartz, Seewerker, Sexauer, Smith, Smoke, Verdina, Warner
Associate Professors: Albert, Baugh, Beckwith, Black, Conroy, Councilman, Dorn Eylar, Froyd, Harvey, Lu, Maltz, Stein, Turner, Wilson.
Assistant Professors: Lax, Wayman.

## Credential Adviser: Ms. Ruth H. Afflack

Undergraduate Advising Coordinator: Dr. Carl H. Dorn.
Graduate Adviser: Dr. Howard J. Schwartz.
Math Student Association Liaison: Dr. Carl H. Dorn.
Students wishing to major in mathematics may work either for the bachelor of arts degree, or for the bachelor of arts degree with one of the formal options described below. The bachelor of arts degree without an option is the most flexible program, in which the greatest number of mathematics electives may be chosen by the student. Elective upper division mathematics courses are available which meet the needs of students preparing for a variety of goals, including: (1) mathematician in industry and government, (2) secondary teaching, (3) graduate study in mathematics.

In addition to the basic bachelor of arts degree, the mathematics major who wishes to have a strong concentration of mathematics courses in one of the following applied areas and to have this concentration stated on the degree may elect one of three formal options: option in applied mathematics, option in computer science and mathematics or option in statistics. These options have a greater number of specifically required courses in mathematics and related departments. The option in applied mathematics is designed to prepare students for careers as applied mathematicians or for graduate study in applied mathematics. The option in computer science and mathematics is designed to prepare students for careers in the computer field or for graduate study in computer science and/or mathematics. The option in statistics is designed to prepare students for careers as statisticians or for graduate study in theoretical or applied statistics.

In addition the mathematics program includes a variety of lower division and upper division courses designed for the non-mathematics major.

The Department of Mathematics offers graduate study leading to the master of arts degree. The candidate is urged to observe the general requirements stated in this Bulletin, as well as the specific departmental requirements stated below.

17-79140

A number of teaching assistant positions are available to qualified graduate students working for the master's degree in mathematics. Teaching assistants usually teach two classes a semester under the supervision of a faculty member Applications for a position should be made to the Chair of the Department of Mathematics.

## Major in Mathematics for the Bachelor of Arts Degree (code 2-6666)

Lower Division: English 100 and English 101 or 300 or 317; Mathematics 122, 123, 224, and 170 ( 2 units) or 270, and any one of the following sequences: Physics 100A,B, or Physics 151 and 152; or Philosophy 170 and 270; or eight units of a foreign language.
Upper Division: A minimum of 30 units of approved upper division mathematics courses selected in consultation with major adviser to include Mathematics 346, 361 A-B, 364 A and 444 but not 370A or B.
To achieve flexibility, only 15 of the required 30 units are specified. Students should, therefore, discuss career goals and plan a program with an adviser. For additional information and to secure an adviser contact the Mathematics Department office.

## Option in Applied Mathematics (code 2-6608)

Suboption I: Area of application in science and engineering
Lower Division: English 101 or 317; Mathematics 122, 123, 171, 224, 270, 272; Physics 151, 152; Physics 153 or Electrical Engineering 210 or Civil Engineering
205. 205
Upper Division: Mathematics 323, 324, 346, 361A, 361B, 364A, 364B, 375, 444, 470, 485,461 or 382 A or $380 \mathrm{~A}, 421$ or 476 A or 442 . A minimum of 11 units from one of the following three groups:
A. Physics 310, 311, 340A, 340B, 410, 450.
B. Electrical Engineering 310, 320, 370, 401, 462, 471, 482.
C. Civil Engineering $335,359,437,438,458,494$, Mechanical Engineering 371, 373, 437.
Suboption II: Area of application in management
Lower Division: English 101 or 317; Mathematics 122, 123, 171, 224, 270, 272; Economics 200, 201, or Economics 300.
Upper Division: Mathematics 324, 346, 361A, 361B, 380A, 382A, 444, 485: Quantitative Systems 460; Economics 333.
A minimum of 12 units from the following courses: Mathematics 364A, 380B 382B, 463; Quantitative Systems 463.

A minimum of 15 units of which nine units must be in Management from the following courses: Management 300,402,406,407,422, 426; Quantitative Systems
$442,445,466$; Economics 486 .

## Option in Computer Science and Mathematics (code 2-6667)

Lower Division: English 100, 101 or 317; Mathematics 122, 123, 224, 270, 272; and any one of the following: (a) Physics 100A-B, (b) Physics 151, 152, (c) Philosophy 170,270 , or (d) eight units of a foreign language.
Upper Division: Mathematics 323, 325, 326, 346, 361A, 364A or 380A, 444; Electrical Engineering 442, 444; and at least nine units to be selected from one of the following groups: (a) Mathematics 324, 343, 421, 476A,B, 485; or (b) Mathematics $343,361 \mathrm{~B}, 364 \mathrm{~B}, 380 \mathrm{~B}, 382 \mathrm{~A}, \mathrm{~B}, 442,470$; or (c) Mathematics 273, 321, 425.

## Option in Statistics (code 2-6008)

Lower Division: English 100 and either English 101 or 317. Mathematics 122, 123, 224, 270; and any one of the following: Physics 100A,B, or Physics 151 and 152; or Philosophy 170 and 270 ; or eight units of a foreign language, or six units in a field in which approved upper division statistics courses are also taken.

Upper Division: A minimum of 30 units of approved upper division mathematics courses to include Mathematics $323,346,361$ A, 380A-B, 382B and three units of Mathematics 495 or 497 taken after completion of Mathematics 380A. Mathematics 382A and 361 B are recommended. Six additional units must be taken in fields outside mathematics; these must be approved by a mathematics adviser. In addition, any student planning to do graduate work in mathematics should take Mathematics 444 and other courses selected in consultation with his/her adviser.

## Minor in Mathematics (code 0-6666)

Requirements for the minor in mathematics include Mathematics 122, 123 and 12 units of upper division mathematics.

## Placement Test

The Mathematics Placement Test may be used, at the option of the student, as a substitute for the formal course prerequisites, for the following courses: Mathematics $100,101,102,114,115 \mathrm{~B}, 115 \mathrm{~S}, 117$ and 180. Testing dates are announced in the Schedule of Classes. To schedule a Placement Test a student must pay a fee at the Business Office and take the receipt to the Testing Office to sign up for the test.

## Master of Arts Degree with a Major in Mathematics (code 5-6666) <br> Prerequisites

1. A bachelor's degree in mathematics from an accredited college or university (deficiencies will be determined by the adviser after consultation with student and study of transcript records), or:
2. A bachelor's degree with a minimum of 24 upper division units in mathematics.
3. Courses must include Mathematics 346, 361A-B, 364A and 444.

## Advancement to Candidacy

The student must pass a written, qualifying examination covering work normally studied in Mathematics 346, 361A-B, 364A and 444.

## Requirements for the Master of Arts

1. A minimum of 24 graduate and approved upper division units in mathematics including:
a. One of the sequences Mathematics $530 A-B, 540 A-B, 550 A-B, 561 A-B$ 562A-B, 580A-B or two courses from 570,575, 590.
b. Two additional courses selected from Mathematics 540A, 550A, 561A or 562A.
C. A minimum of 15 units of graduate courses in mathematics not including either Mathematics 697 or 698.
2. Six units of approved upper division or graduate electives to total 30 units for the degree.
3. Fulfill the requirements in either Option A or Option B.
a. Option $A$ - pass a comprehensive written examination.
b. Option B-subject to the approval of the Graduate Committee of the Department of Mathematics, write a thesis in mathematics and defend it orally.

## Lower Division

100. Intermediate Algebra (3) F,S Faculty

Prerequisite: One year of high school algebra or its equivalent (e.g., elementary algebra at a two-year college). Study of linear and quadratic equations, factoring, fractions, exponents, radicals, variation and logarithms. Not open to students with credit in Mathematics 102, 104B, 112, 117 or 122.

## 101. Trigonometry (2) F,S Faculty

Prerequisite: Mathematics 100 or two years of high school algebra Trigonometric functions and applications. Complex numbers. Not open to students with credit in Mathematics 112, 117 or 122 . Nomplex numbers. Not open to students

## 102. Unified Algebra and Trigonometry (4) F,S Faculty

Prerequisite: One year of high school algebra or its equivalent (e.g., elementary algebra at a two-year college). Content course covering algebra and trigonometry. Not open to students with credit in Mathematics 100, 101, 104B, 112, 117 or 122.

## 103. Liberal Arts Mathematics (3) F,S Faculty

Nontechnical course for general education emphasizing the ideas and concepts puzzles and games, Will include topics such as number patterns, binary arithmetic, credit/no credit basis only credit/no credit basis only.

104A-B. Intermediate Algebra (3,3) F,S Faculty
Prerequisite: Consent of instructor. Mathematics 104A is a prerequisite for Mathematics 104B. Development of mathematics skills with emphasis on application through word problems. Topics to include algebra of signed numbers, real number properties, linear and quadratic equasions and inequalities, fractions, polynomials, exponents, radicals and logarithms. The completion of Mathematics 104A and B is equivalent to Mathematics 100. Not open pletion of Mathematics Mathematics 100, 102 or 122.

## 105. Business Calculus Review (1) F,S Faculty <br> \section*{Prerequisite: Mathematics 115B. Corequisite. Es}

concepts of differential calculus as the Corequisite: Economics 333. Review basic of several variables. (Lecture 3 hours per week in economics. Introduce calculus Credit/No Credit only.)

## 109. Math Ideas for Teachers (1) F,S Faculty

Topics in mathematics applicable to teachers. Through the use of manipulative materials, games, mathematical activities and puzzles, students will explore mathematical concepts in a creative, open environment
110. Mathematics for Elementary Teachers I (3) F,S Faculty
Prerequisites: One year of high school algebra,

Theory of the structure, arithmetic and algebra year of high school geometry Designed for prospective elementary teachers. Not of the real number system majors.

## 111. Mathematics for Elementary Teacners II (3) F,S Faculty <br> Prerequisite: Mathematics 110. Elements of logic F, S Faculty

informal geometry; introduction to trigonometry and the basic concepts of mathematics majors.

## 112. College Algebra (3) F,S Faculty

Prerequisite: Mathematics 102 or both Mathematics 100 and 101 or two years of
high school algebra including quadratic equations and systems; matrictry. Study of algebra including linear and polynomial, exponential and logarithmic fund determinants; theory of equations and probability. Designed for students majoring ins and their graphs; permutations to students with credit in Mathematics 117 or 122 in a life or social science. Not open
113. Mathematics of Investment (3) F,S Faculty

Prerequisite: Mathematics 100 or equivalent. Simple interest and discount depreciation, capitalization, perpetuities.
114. Finite Mathematics (3) F,S Faculty

Prerequisite: Mathematics 100 or 102 or two years of high school algebra. Elementary set theory. Combinatorial techniques and introduction to probability. Vectors, matrices, equations of lines and systems of linear equations.

115B. Calculus for Business (3) F,S Faculty
Prerequisite: Two years of high school algebra, or Mathematics 100, or the equivalent. Real numbers and functions, differentiation of functions of one and several variables. Applications to the business sciences. Integration of functions of one variable. Emphasis on problem-solving techniques rather than theory. Not open to students with credit in Mathematics 115, 115S, 120 or 122.

## 115S. Survey of Calculus I (3) F,S Faculty

Prerequisite: Mathematics 112 or its equivalent. Real numbers and functions limits and continuity; differentiation and integration of functions of one variable with applications to physical, life and social sciences. Emphasis on problemsolving techniques rather than theory. Not open to students with credit in Mathematics $115,115 \mathrm{~B}, 120$ or 122.

## 116. Survey of Calculus II (3) F, S Faculty

Prerequisite: Mathematics 115 or 115S. Further topics in differentiation and integration of functions of one variable including numerical integration, use of tables and improper integrals; introduction to calculus of several variables and elementary differential equations. Not open to students with credit in Mathematics 123 or 224.
117. Precalculus Mathematics (4) F,S Faculty

Prerequisites: At least $3 /$ years of high school mathematics including at least 2 years of algebra and / year of trigonometry, or Mathematics 101 or 102. Properties of elementary functions, binomial theorem, matrices and determinents, conic sections and selected topics. Not open to students with credit in Mathematics 122 (Lecture 3 hours, problem session 2 hours.)
120. Calculus for Technology (4) F,S Faculty

Prerequisite: Mathematics 102 or both 101 and 100 . Real numbers and functions; limits and continuity; differentiation and integration of functions of one variable Introduction to calculus of several variables. Applications to science and technology. Not open for credit to students with credit in Mathematics 115, 115B 115 S or 122. (Lecture 3 hours, problem session 2 hours.)

## 122. Calculus I (4) F,S Faculty

Prerequisite: A grade of $\mathbf{C}$ or better in Mathematics 117 or four years of high school mathematics including two years of algebra, one year of geometry, one-half year of trigonometry and one additional senior-level course. Analytic geometry of the plane. Notion of limit. Differentiation and integration of elementary functions and applications. (Lecture 3 hours, problem session 2 hours.)

## 123. Calculus II (4) F,S Faculty

Prerequisite: A grade of $\mathbf{C}$ or better in Mathematics 122. Extension of work in analytic geometry. Differentiation and integration of transcendental functions. (Lecture 3 hours, problem session 2 hours.)
170. Introduction to Programming (1-2) F,S Faculty

Introduction to computing using a conversational on-line computing language. Flowcharting and elementary computer programming with several exercises to be run on a computer (no particular mathematics background assumed), with project chosen according to the student's background. Credit/no credit basis only.

## 171. Computer Calculus (1) F,S Faculty

Prerequisite: Concurrent registration in a calculus course. Introduction to computin, with applications involving calculus, using a conversational on-lin 170. Not open for credit to students with credit in Mathematics

## 180. Elementary Statistics (3) F,S Faculty

Prerequisite: Mathematics 100 or 102 or two years of high school algebra. Nature normal distribution assumption and its cription of sampled data. Random sampling estimation; correlation, regression, analysis of varices; tests of hypotheses and (Lecture 3 hours.)

## 207. Math Without Fear (3) F,S Afflack

The course will help students strengthen their problem solving abilities while covered with emphasis covered with emphasis being placed on recognizing patterns, analyzing problems and generalizing concepts. Not open for credit to mathematics majors.
224. Calculus III (4) F,S Faculty

Prerequisite: A grade of C or better in Mathematics 123. Solid analytic geometry and introductory vector analysis in three dimensions. Functions of two and more variables. Partial derivatives and multiple integrals. Introduction to infinite series and linear differential equations. (Lecture 3 hours, problem session 2 hours.)

## 246. Elementary Linear Algebra (3) $S$ Faculty

Prerequisite: Mathematics 114 or Mathematics 117 or consent of instructor Vectors. Matrices: Matrix operations, rank, determinant and similarity. Methods for inverting a matrix and solving systems of linear algebraic equations. Methods of obtaining eigenvectors of matrices. Applications in business and in natural and social sciences. Emphasis on computational methods rather than theory
270. Introduction to Computing (3) F,S Faculty

Prerequisite: Mathematics 117 or consent of instructor. Computers and algorithms. Programming in machine, assembly and higher level languages, Computer solution of numerical and nonnumerical problems using these
languages.

## 272. Techniques of Programming (4) F Faculty

Prerequisite: Mathematics 270. Elements of programming style, structured programming and algorithmic analysis. Computer projects to illustrate these concepts. (Lecture 3 hours, problem session 2 hours.)
273. COBOL Programming (3) F,S Faculty

Prerequisite: A previous course in computing, such as Mathematics 270 or Quantitative Systems 240. Fundamentals of the computer programming language COBOL. Data division, input and output file handling for tapes and disks. Computer hours.)

## 297. Directed Study (1-3) F, S Faculty

Prerequisite: Consent of instructor. Designed for students who wish to undertake special study, at the lower division level which is not a part of any regular course, under the direction of a faculty member. Individual investigation, studies or

## Upper Division

310. History of Mathematics (3) S Baugh, Gittleman

Prerequisites: Mathematics 116 or 123. Designed to trace the continuous growth and development of mathematical thought and practices from the primitive origins to the present. Fundamental concepts, methods and developments are studied; evolution of areas in mathematics is traced. Recommended for all mathematics majors and minors preparing to teach.

## 311. Topics of Enrichment in Mathematics for the Elementary

 Teacher (3) F AfflackPrerequisites: One year of high school algebra, one year of high school geometry and possession of a valid teaching credential or consent of instructor. Enrichment topics in mathematics for the elementary teacher, such as theory of arithmetic, numeration systems, elementary logic, mensuration, metric system, topological equivalence, probability and statistics and network theory. Not open for credit to mathematics majors.
317. Introduction to Abstract Mathematics (3) F,S Faculty

Prerequisite: Mathematics 123. Introduction to topics which form a background for the study of abstract mathematics with emphasis on methods of developing and writing proofs. Topics will include set theory, complex numbers and abstract algebra. Not open for credit to anyone with a grade of C or better in Mathematics 444.
321. Information Systems Using COBOL (4) $F$ Seewerker

Prerequisite: Mathematics 273. Study of information systems based on COBOL. Review of basic COBOL programming and introduction to advanced features with emphasis on advanced file handling techniques and organization. Data base management systems. Several computer projects in the design and implementation of information systems. (Lecture 3 hours, problem session 2 hours. This course may not be counted toward the 30 upper division units required for the B.A. in mathematics.) Same course as Computer Studies 321.
323. Programming in Analysis (4) $F$ Cohen, Lax, Lu

Prerequisites: Mathematics 224, 270. Recommended: Mathematics 364A. Application of computer programming to obtain numerical solutions of problems in analysis to include roots of a single nonlinear function by iteration, integration, solution of differential equations, interpolation. (Lecture-discussion 3 hours, problem session 2 hours.)
324. Programming in Algebra (4) $S$ Cohen, Lax

Prerequisites: Mathematics 123, 270. Recommended: Mathematics 246 or 346. Application of computer programming to obtain numerical solutions of problems in algebra to include the exact and iterative solutions of simultaneous linear equations, calculation of characteristic values, matrix inversion and transformations, least squares data smoothing. (Lecture-discussion 3 hours, problem session 2 hours.)
325. Computer Systems and Programming (4) F,S Margulies, Seewerker

Prerequisite: Mathematics 270. Machine language, machine organization, computer systems, information structures and programming languages. Emphasis will be on machine-oriented languages. (Lecture 3 hours, problem session 2 hours.)

## 326. Operating Systems (4) S Margulies,Seewerker

Prerequisite: Mathematics 325 or consent of instructor. Input-output, interrupt handling, operating systems, macros and macro processing, time-sharing, virtual memory and paging and further topics. Several computer projects will be done. (Lecture 3 hours, problem session 2 hours.)

## 330. Introduction to Mathematical Logic (3) F Beckwith, Mardellis, Turner, Wilson

Prerequisite: Mathematics 115 S or 122 . Symbolic methods of propositional calculus, general theory of inference, transition from formal to informal proofs, theory of definition, elementary set theory and axiomatic method.

## 340. Theory of Algebraic Equations (3) $S$ Albert

Prerequisite: Mathematics 116 or 123. Complex numbers, general theorems on algebraic equations, the discriminant, location and approximation of roots of equations, solution of the cubic and quartic equation; determinants and their application to simultaneous linear equations, symmetric functions.
343. Discrete Structures and Combinatorics (3) F Baugh, Wayman

Prerequisites: Mathematics 123 and one of Mathematics 170, Wayman Engineering 241. Topics in combinatorics includingtics 170, 270 or Electrical graphs, trees, permutations and inatorics including undirected and directed functions and enumeration algorithms. Bita, recursive relations, generating computing and discrete probability.

## 346. Linear Algebra (3) F, S Faculty

Prerequisite: Mathematics 224. Matrices and matrix algebra. Vector spaces theorem. Similarmatrices, diagonalization characteristic values, Cayley-Hamilton theorem. Similar matrices, diagonalization and triangularization of matrices. Linear
transformations. Introduction to inner rer transformations. Introduction to inner product spaces.
350. Projective Geometry (3) $S$ Verdina

Prerequisite: Mathematics 224 or consent of instructor. Homogeneous coordinates. Projectivities. Collineations and correlations. Polarities. Projective properties of conics. Linear and quadratic transformations. Introduction to
differential geometry.
352. Introduction to Topology (3) F Faculty

Prerequisite: Mathematics 224. Introduction to the basic concepts of point set topology such as topological spaces, continuous functions, compactness and analysis or differential geometry.
355. College Geometry (3) F Verdina

Prerequisite: Mathematics 116 or 123. Transformations, motions, similarities geometric objects, congruent figures, the axioms of geometry, and selected topics

361 A. Introduction to Mathematical Analysis I $\begin{array}{ll}\text { (3) F,S Faculty }\end{array}$
Prerequisite: Mathematics 224. Rigorous study of calculus and
Structure of the real number system. Sequences calculus and its foundations continuity and differentiability of functions of and series of numbers. Limits students with credit in Mathematics 460A.

361B. Introduction to Mathematical Analysis II (3) F,S Faculty
Prerequisite: Mathematics 361A. Rieman integration, Faculty
the real number line. Sequences of functions introduction ical properties of several variables. Not open to students with credit introduction to the calculus of保
364A. Ordinary Differential Equations I (3) F,S Faculty
Prerequisite: Mathematics 224. General theory of linear differential equations, variable coefficients.
*364B. Ordinary Differential Equations II (3) S Fatt, McLeod
Prerequisite: Mathematics 364A. Fundamental existence theorems, systems of equations, general theory of first order equations, special functions defined by

## 370A. Applied Mathematics I (3) F,S Faculty

Prerequisite: Mathematics 224. Ordinary differential equations, functions of several variables, algebra and geometry of vectors, vector field theory. Not open for credit to mathematics majors

## 370B. Applied Mathematics II (3) F,S Faculty

Prerequisite: Mathematics 370A. Applications of partial differentiation, Taylor's formula, infinite series, complex variables. Not open for credit to mathematics majors.

## 375. Vector Analysis (3) S Faculty

Prerequisite: Mathematics 224. The algebra and calculus of vectors; applications to geometry. Vector and scalar fields; gradient, divergence, and curl. Applications in mechanics and electromagnetism. Introduction to tensor analysis.

## 380A-*B. Mathematical Statistics (3,3) F,S Black, Cohen, Maltz, Martinez, Smoke

Prerequisite: Mathematics 224. Sample space, random variable, distribution function. Empirical and theoretical distributions of one variable. Elementary sampling theory for one variable. General principles for testing hypotheses and for estimation. Small sample distributions. Correlation and regression. Goodness of fit tests. Design and analysis of experiments. Non parametric methods.

382A-*B. Introduction to Probability and Random Processes ( 3,3 ) F, S Albert, Black, Foster, James
Prerequisite: Mathematics 224. Discrete probability. Basic concepts of combinatorial analysis. Axioms for a general probability space. Random variables Distribution functions. Density functions. Expectation and variance. Dependent and independent events. Conditional probability and limit theorems. Recurrent events and the renewal equation; discrete parameter Markov chains; elementary time-dependent stochastic processes.
*421. Artificial Intelligence (4) S Gittleman
Prerequisites: Mathematics 270, 272, and one of Mathematics 317,330, 346 or 444. Selected topics from heuristic programming, pattern recognition, learning systems, problem solving systems and formal symbol manipulating systems. (Lecture 3 hours, problem session 2 hours.)
*425. Information Structure and Files (3) S Seewerker
Prerequisite: Mathematics 272 or 325. Basic concepts of the nature and use of data as related to the computer. Trees, graphs, computer storage systems, file organization, manipulation and data retrieval. Several computer projects illustrating these concepts.
*430. Mathematical Logic (3) S Turner, Wilson
Prerequisite: Mathematics 330 . Introduction to formal logical systems. Formal proofs in propositional and first order predicate calculi. Completeness theorems and problems related to consistency and decidability.
*435. Introduction to Set Theory (3) F Faculty
Prerequisite: Six units of upper division mathematics or consent of instructor Axioms for set theory; relations and functions, orders; proof and definition by induction; well-ordered sets; transfinite induction and recursion; ordinal and cardinal numbers; Axiom of Choice, well-ordering principle, Zorn's Lemma and their equivalents; continuum hypothesis; ordinal and cardinal arithmetic.

## 440A. Number Theory I (3) F Baugh, Eylar, Gittleman

Prerequisite: Mathematics 224. The sequence 440A-B covers divisibility congruences, primitive roots, continued fractions, algebraic numbers, partitions.

440B. Number Theory II (3) S Baugh, Eylar, Gittleman Prerequisite: Mathematics 440A. Continuation of Mathematics 440A
*442. Introduction to Algebraic Coding Theory (3) S Ali
Prerequisite: Mathematics 246 and 317 or an equivalent Ali
modern algebra. The coding problem; the the tinear and decoding; binary repetition problem, the Hamming metric; maximum likelihood construction of finite fields line, basic properties of vector spaces of $n$-tuples Muller codes; encoding and decoding in Reluding Hamming codes and Reed time permits.

## 444. Introduction to Higher Algebra (3) F,S Faculty

Prerequisite: Mathematics 224. Recommended: Mathematics 317. Groups subgroups, cyclic groups, symmetric groups, Lagrange's theorem, quotient groups. Homomorphisms and isomorphisms of groups. Rings, integral domains, deals, quotient rings, homomorphisms of rings. Further topics in groups, rings and fields as time permits. Not open to students with credit in Mathematics 344
451. Differential Geometry (3) F Baugh, Fatt, Margulies, Stein

Prerequisite: Mathematics 364 A or 370 A (either can be taken
Structure of curves and surfaces in space (either can be taken concurrently). curves; frame fields and connection forms; geometry of surface formulas of space space; Geodesics and connections with ; geometry of surfaces in Euclidian three with general theory of relativity
*461. Complex Variables (3) S Faculty
Prerequisite: Mathematics 361A. Theory and applications of complex variables Analytic functions, integrals, power series and applications

## *463. Multivariable Calculus (3) F Faculty

derivatives. Derivatives as lines 346, 361B. Topology of Euclidian spaces. Partial derivatives. Derivatives as linear transformations. Inverse and implicit function problems
*470. Introduction to Partial Differential Equations (3) F Fatt, Lu, Margulies Prerequisite: Mathematics 370A, or 364A and 375. Linear first and second order Introduction characteristics, elliptic, hyperbolic, and parabolic equations and initial value problems of mathematical physics.

## *472. Fourier Series (3) F McLeod, Warne

Prerequisite: Mathematics 364A or 370A. Theory of Fourier series and its
pplication to boundary value problems,
473. Laplace Transform (3) S James, McLeod
application to linear problems in electrica. Theory of the Laplace transform and its , mechanical and thermal systems.
Prerequisites: Analysis (3) S, F Cohen, Lax, Lu
Advanced numerical methods. Introduction; Mathematics 346 recommended. stability of numerical algorithms.
*485. Mathematical Programming (3) F James
Prerequisites: Mathematics 346 and senior sames
programming: simplex methods, duality theory standing. Linear and nonlinear theory, gradient methods and dynamic programming theory of graphs, Kuhn-Tucker
*491. Secondary School Mathematics Seminar (1) S Dorn
Prerequisite: Concurrent enrollment in Education (1) S Dorn
possession of a valid California Credential Study Single Subject 470A or 470B or mathematics curriculum as it applies to mathe content of the secondary classroom techniques, performance evaluation. mathematics teaching problems
*495. Topics in Modern Mathematics (3) F, S Faculty
Prerequisite: Consent of instructor. Topics of current interest from mathematics literature.

## 497. Directed Studies $(1-3)$ F,S Faculty

Prerequisites: Junior or senior standing and consent of instructor. Readings in areas of mutual interest to student and instructor which are not a part of any regular course. A written report or project may be required. May be taken for a maximum of three units of credit.

## Graduate Division

530A. Foundations of Mathematics I (3) F Turner, Wilson
Prerequisite: Consent of instructor or Mathematics 330 or equivalent Introduction to the logical foundation of mathematics; a treatment of various propositional calculi and first order logics. Decidability, consistency, independence, minimality and completeness (The Godel Completeness Theorem) and applications to various first order theories.

530B. Foundations of Mathematics II (3) S Turner, Wilson
Prerequisite: Mathematics 530A. Continuation of Mathematics 530A.
540A. Higher Algebral (3) F Ali, Beckwith, Sexauer
Prerequisite: Mathematics 444 (Mathematics 346 is recommended). Groups, rings, fields. Galois fields and related topics.

## 540B. Higher Algebra II (3) S Ali, Beckwith, Sexauer

Prerequisite: Mathematics 540A. Continuation of Mathematics 540A.
550A. Topology I (3) S Councilman, Eylar, Lu
Prerequisite: Mathematics 361A.(Mathematics 352 is recommended.) Study by analytic methods of geometric properties that are invariant under bicontinuous transformations.

550B. Topology II (3) F Councilman, Eylar, Lu
Prerequisite: Mathematics 550A. Theory of singular homology groups, relative homology groups; simplicial homology; cohomology; applications of the methods of algebraic topology to problems in analysis.

561A. Real Analysis I (3) S Bachar, Margulies, Schwartz
Prerequisite: Mathematics 361B. Point set theory, metric spaces, Baire category theorems, measures as set functions, Lebesgue, Baire and Borel measures, Fubini's theorem and Radon's theorem.

## 561B. Real Analysis II (3) F Bachar, Margulies,Schwartz

Prerequisite: Mathematics 561A. Measures as linear functionals, Riesz representation theorem, Banach spaces, Lp-spaces, Hilbert spaces, algebras of continuous functions, Banach algebras and spectral theory.

562A. Theory of Functions I (3) F Cohen, McCullough
Prerequisite: Mathematics 361B. (Mathematics 461 is recommended.) Axiomatic development of real and complex numbers; elements of point set theory; differentiation and analytic functions, classical integral theorems; Taylor's series, singularities, Laurent series, calculus of residues.

## 562B. Theory of Functions II (3) S Cohen, McCullough

Prerequisite: Mathematics 562A. Multiple valued functions, Riemann surfaces; analytic continuation; maximum modulus theorem; conformal mapping, with applications, integral functions; Gamma function, zeta function, special functions.
570. Advanced Applied Mathematics (3) F Lu, McLeod, Margulies

Prerequisites: Mathematics 460A and B. Topics in applied mathematics such variations ansform techniques, applications of conformal mapping, calculus

## 575. Calculus of Variations (3) S Lax, McLeod

Prerequisites: Mathematics 364A or 370A, 460A. Classical theory. Necessary and Applicatiens conditions for extreme of multiple integrals. Hamilton-Jacobi theor principle. Principle of optimality

## 580A-B. Advanced Mathematical Statistic

Prerequisite: Math $(3,3)$ F,S Cohen, Smoke emma; uniformly most powerful, the general decision problem ; Neyman-Pearson general linear hypothesis. Principles of sufficiend similar tests; invariant tests, properties of maximum likelihco tolerance regions. Non likelihood estimates; variance bounds; confidence region tolerance regions. Nonparametric methods
590. Theory of Approximation (3) S Cohen

Prerequisite: Mathematics 460B. Recommended: Mathematics 476 B and 561A Approximation with the Least squares and Chebyshev approximation Approximation with the $L_{\text {p }}$ norm. Harmonic analysis. The weierstrass .

## 695. Seminar in Mathematics (3) F,S Faculty

work, including original research by factorentation and discussion of advanced work, including original research by faculty and students. Topics to be announced in the Schedule of Classes. May be repeated for credit
997. Directed Studies (1-3) F,S Faculty

Topic for study to be approved department.
698. Thesis (2-4) F,S Faculty

Prerequisite: Completion of at least one 500 and/or 600 level mathematics course. Formal report of research or project in mathematics.

## Mediaeval and Renaissance Studies

## Director: Dr. J. Charles Jernigan (Comparative Literature)

Professors: Abou-El-Haj (History), Axelrad (English), Boutelle (History), Cardenas (Spanish-Portuguese), Crane (English), Knafel (English), Lerner (Physics), Lipski (History, Religious Studies), Lindgren (History), McKay (German, Russian, Classics), Marin (Spanish-Portuguese), Peccorini (Philosophy), Thomas (FrenchItalian), Rayner (Music).
Associate Professors: Abrahamse (History), Bartenbach (German, Russian, Classics), Bell (English), Eisenman (Religious Studies), Guerriere (Philosophy), Gosselin (History), Jernigan (Comparative Literature), Kessler (French-Italian), Martel (Art), Spangler (Philosophy), Yperman (French-Italian).
Assistant Professors: Battaglia (Religious Studies), Forney (Music), Greer (Art), Scott (Political Science).

The Center for Mediaeval and Renaissance Studies has established an interdisciplinary program which offers students interested in these periods the opportunity to pursue a course of study leading to a Certificate in Mediaeval or Renaissance Studies. Courses which are used to meet the certificate requirements may be counted, where applicable, toward the general education requirements, the major and teaching minor requirements.

It is the objective of the center to act as a base where scholarly activity in mediaeval and Renaissance periods may be encouraged and supported on all academic levels through on-campus courses, field research and an active program of European research on the Continent, in Scandinavia and in England. The center sponsors summer institutes of innovative, interdisciplinary courses and a regular academic-year program of faculty colloquia, guest lectures and a student research seminar.

The center is associated with the Mediaeval Academy of America (CARA Division), The Mediaeval Association of the Pacific, the Early English Text Society, SATF (the French mediaeval text organization), the France-American Society, the American Historical Association and other scholastic and honorary groups relevant to contemporary research.

Interested students should apply to the Director, Dr. J. Charles Jernigan, Comparative Literature Department, HOB-513, or to members of the supporting faculty for further information.

## Requirements for the Certificate in Mediaeval or Renaissance Studies

1. A bachelor's degree with an approved major. (Certificate may be completed prior to the completion of the B.A. requirement or while in the process of working toward an advanced degree.)
2. Consultation and approval of the program with a faculty adviser
3. Intermediate level language proficiency on the college level, including a course in mediaeval or Renaissance literature of the language. It is expected that the language selected will be Latin, but with the consent of the adviser, Anglo-Saxon, French, German, Italian, Spanish or Greek may be substituted.
4. Twenty-four units selected from the following courses. Students should elect to concentrate in either the mediaeval or Renaissance period
a. Required courses (12 units): one of the following sequences for six units: History 316,317 , or 317,332 , or 332,333 . One of the following literature courses for three units: Comparative Literature 431, 432; English 451, 452. One of the following art history courses for three units: Art 313A, 313B, 314A, 314B, 314C.
b. Nine units selected from the following courses: Art (history) 311, 313A,B 314A,B,C, 499Q $\dagger$; Comparative Literature $349 \dagger, 422,430,431,432,449 \dagger$ 450t; English 426, 431, 451, 452, 462, 463, 468A, 469 $\dagger$; French 470, 471; German 315; Greek 490t, 499 $\dagger$; History $301 \dagger, 316,317,318 \mathrm{~A}, \mathrm{~B}, 332,333$ 341 A, 353, 411, 431, 432, 490 $\dagger, 494,495 \dagger$, $499 \dagger$; Latin $490 \dagger$, $499 \dagger$; Music 360 Political Science 301, 302; Religious Studies 314, 331, 471, 472, 490 $\dagger$, 494 $\dagger$ $495 \dagger$; Spanish 474; Theatre Arts 321, 422, $490 \dagger$.
Graduate courses: Art $611 \dagger$; English 550, 551, 652, 661, 681; French 604 685; German 511; History 510t, 611, 631t, 651; Music 561; Philosophy $630 \dagger, 690 \dagger$; Spanish $505,535,538$; Theatre Arts $621 \dagger$.
c. Three units of directed research on a mediaeval or Renaissance topic in any of the following courses: Art (history) 497, Com parative Literature 499, English 499, French 499, Germ an 499, Greek 499, History 498, Religious Studies 490, Philosophy 499, Spanish 499, Theatre Arts 498. Graduate courses: Art (history) 697, English 697, French 697, Germ an 652, 697, History 697, Philosophy 697, Spanish 697, Theatre Arts 694.

## Mediterranean Studies

Director: Raymond McKay (German, Russian \& Classics).
Professors: Greer (Art), Hood (History), Hubble (Comparative Literature), Jernigan (Comparative Literature), Markman (Comparative Literature), McKay (German, Russian \& Classics), Plourde (English), Trombetas (Political Science).
Associate Professors: Abrahamse (History), Guerriere (Philosophy), Spangler (Philosophy).

Mediterranean studies offers an interdisciplinary approach to the classical world which combines history, language, philosophy and literature.

Since the program draws upon a variety of traditional disciplines, the student will be exposed to diverse courses designed to present various aspects of the classical world. Specifically, this program is designed to serve the interests and goals of (1) classics, history, philosophy, English and comparative literature majors who wish to broaden their own knowledge about the ancient world, (2) students who plan to teach about this period or teachers already in the field who need to update their own knowledge, (3) the general student who wishes to explore a further educational dimension by focusing on the roots of the Western tradition.

Students pursuing any approved degree or credential program of the University may at the same time earn a Certificate in Mediterranean Studies. Courses taken to meet the requirements may also simultaneously be used, where applicable, to meet general education requirements or the degree or credential requirements of cooperating departments. Certification of successful completion of requirements will be issued upon the recommendation of the Director of the Certificate in Mediterranean Studies program. Interested students should apply to the Director, Professor Raymond McKay (HOB-813), or to members of the supporting faculty for further information.

## Requirements for the Certificate in Mediterranean Studies:

Twenty-three semester units are required for a certificate, which normally may be completed in one year.

1. A bachelor's degree with a traditional major. (Certificate requirements may be completed prior to completion of the B.A.)
2. A minimum of two semesters of either Greek 221-222 or Latin 221-222 and History 231.
3. Fifteen units chosen from four of the disciplines listed below chosen in consultation with the student's adviser. No more than six units of any one discipline shall apply towards the certificate, excluding the requirements in
[^9]No. 2.
4. Cumulative GPA of 2.50 in all courses in the student's approved certification program.

Mediterranean Studies Courses:
A. Greek 331, 332, 342, 351, 490 $\dagger, 499 \dagger$
B. Latin $331,332,351,352,490 \dagger, 499 \dagger$.
C. History $313,314,318 \mathrm{~A}, 490 \dagger, 495 \dagger$.
D. Philosophy 203, 421, 422, 491.
E. Art 310, Classics 360, 370, Comparative Literature 421 (same course as Theatre Arts 421), 452 $\dagger, 499 \dagger$, English 431, 499 $\dagger$, Political Science 415.

## Mexican American Studies

## Department Chair: Dr. Genevieve M. Ramirez.

Associate Professors: Hidalgo, Osuna, Ramirez, Sanchez.

## Assistant Professor: Lopez

## Undergraduate Adviser: Dr. Genevieve M. Ramirez

Mexican American studies courses are designed to provide a general knowledge of the history and culture of the Chicanos in the United States. The department offers programs to serve the interests and goals of (1) those entering a variety of occupations including urban studies, government, journalism, social work, school administration, business, criminology, law, foreign service and other related areas, (2) teachers, counselors, administrators, (3) majors in other fields such as history, sociology, psychology, literature, anthropology, who wish to include additional scope to their field of study.

## Major in Mexican American Studies

## for the Bachelor of Arts Degree (code 2-8817)

Lower Division: A minimum of 16 units distributed as follows: 13 units from Mexican American Studies 100, 103A,B, 104A,B, 203 and three units selected from Mexican American Studies 205 or 230.
Upper Division: A minimum of 24 units distributed as follows: 12 units of core requirements: one course selected from Mexican American Studies 405,420 or 425, and any three of the following: Mexican American Studies 300, 310, 350, 443; nine units selected from one of the three groups: Group I (Humanities)-Mexican American Studies 305, 312, 402, 403, 405, 420, 425, 460A-B; Group II (Social Science)-Mexican American Studies 300, 304, 310, 350, 360, 375, 380, 400, 415 443, 450, 480, 490; Group III (Education)-Mexican American Studies 340, 442, $443,444,445$ and three elective units from any group or Mexican American Studies 499.
Social and Behavioral Sciences Requirement: The student will select six units of coursework in the Social and Behavioral Sciences from the options listed below according to the area of concentration selected within the major. These courses shall be in addition to courses selected to fulfill the requirements of any General Education Category. Group I (Humanities): American Indian Studies 340, Asian American Studies 380, Black Studies 340, Sociology 485, Women's Studies 410 Group II (Social Sciences): American Indian Studies 312, Anthropology 323, Asian American Studies 345, Black Studies 400, Economics 444, History 364,

Geography 470, Political Science 359, Sociology 445, Social Work 370, Urban Studies 493, Women's Studies 401. Group III (Education): American Indian Studies 337, Asian Am erican Studies 310, Anthropology 467, Black Studies 420.
Departmental Requirement: Two years of Spanish and the successful completion of a Spanish proficiency examination are required of all majors. (If the student is proficient in Spanish the two years' requirement may be met by successfu completion of the proficiency examination.)

## Minor in Mexican American Studies (code 0-8817)

A prerequisite to taking this minor is successful completion of two Spanish courses, recommendation by the Mexican American Studies Department or the successful completion of a Spanish proficiency examination.

## Requirements for the Minor:

A minimum of 24 units distributed as follows: 12 units of core requirements: three units from Mexican American Studies 405, 420 or 425 , and nine units from the following: Mexican American Studies 300, 310, 350, 443; nine units selected from one of the three groups: Group I (Humanities)-Mexican American Studies 305, 312, 402, 403, 405, 420, 425, 460A-B; Group II (Social Science)-Mexican American Studies $300,304,310,350,360,375,380,400,415,443,450,480,490$; Group III (Education)-Mexican American Studies 340, 442, 443, 444, 445; and three elective units from any group of Mexican American Studies 499.

## Certificate in Mexican American Studies

In addition to the bachelor of arts degree in Mexican American Studies, the department offers a certificate in Mexican American Studies. Courses used to meet this certificate requirement may be counted also, where applicable, toward the General Education requirements and the major and teaching minor requirements of the cooperating departments.

## Requirements for the Certificate in Mexican American Studies:

1. A bachelor's degree with a major in a traditional discipline.
2. A minimum of 24 units distributed as follows: 12 units of core requirements three units from Mexican American Studies 405, 420 or 425 , and nine units from the following: Mexican American Studies 300, 310, 350, 443; nine units selected from one of the three groups: Group 1 (Humanities)-Mexican American Studies 305, 312, 402, 403, 405, 420, 425, 460A-B; Group II (Social Science)-Mexican American Studies 300, 304, 310, 350, 360, 375, 380, 400, $443,450,480,490$; Group III (Education)-Mexican American Studies 340, 442, $443,444,445$; and three elective units from any group of Mexican American Studies 499.

## 103B. Bilingual Communication Skills-Spanish Faculty

Prerequisite: Placement test or completion of Mexican American Studies 103A. Designed for those students from a Spanish speaking background who have an oral-aural communicative skill in the language. Students completing this course may enroll in Mexican American Studies 203.

104A. Bilingual Communication Skills-English (3) F,S Osuna, Ramirez, Faculty
Prerequisite: To be taken concurrently with Mexican American Studies 103A or B Basic fundamentals of English communication for students of bilingual background.

104B. Bilingual Communication Skills-English (3) F,S Osuna, Ramirez, Faculty
Prerequisite: Mexican American Studies 104A or placement test, to be taken concurrently with Mexican American Studies 103A or B. Advanced fundamentals of English communication for students of bilingual background. (Fulfills English 100 requirements.)
203. Spanish for the Native Speaker (3) F,S Osuna, Ramirez, Faculty

Meets the needs of bilingual students whose cultural background has prepared them for special forms of accelerated Spanish instruction. The successful completion of this lower division course will enable the student to enter upper division classes in Spanish.
205. Introduction to Chicano Literary Studies (3) F,S Osuna, Ramirez

Introductory survey course in Mexican and Chicano literature covering traditional and contemporary literary styles and forms from selected translated Mexican and Chicano readings
230. Chicano Community Organization (3) F,S Lopez, Faculty

Analysis of Chicano community groups; emphasis on development of community organizational techniques.

## 280A-B. Bilingual Skills for Health Sciences (3) F,S Osuna, Ramirez, Faculty

An oral-aural Spanish language course for individuals in the health sciences and others working in related areas in the Spanish-speaking community. Sociological and psychological aspects of language and culture will be discussed.

## Upper Division

300. History of the Chicano in the Southwest (3) F,S Sanchez

Chicano's role in the settlement and development of the Southwest and in contemporary U.S. society; Chicano experience as a U.S. minority group; emerging civil rights movement of La Raza.

## 304. Mass Media and the Barrio (3) S Lopez, Faculty

Impact of American mass media on Chicano community life from the 19th Century to the present

## 305. Mexican Literature in Translation (3) S Osuna, Ramirez

Prerequisite: Completion of Mexican American Studies 205 or any other lower division literature course. Survey of Mexican literature, with emphasis on the contemporary trends, authors and works which have most greatly influenced the Chicano writers of today. Not open to students with credit in 305A and/or 305B
310. Chicano Thought (3) F,S Sanchez

Study of the ideas, philosophies and events affecting Chicano life; identification and examination of the Chicano world view, of a Chicano reality.
312. Mexican Thought (3) F Sanchez

Inquiry into the nature of Mexican thought and a critical examination of Mexican world views and views about the nature of morality, beauty, society, religion and intellect.

## 340. The Chicano and Education (3) F Hidalgo, Sanchez

Analysis of the failure of school systems to meet the needs of Chicano students evaluation and consideration of the changes in philosophy, curriculum methodology and testing and guidance procedures that must be made,

## 350. Sociology of the Barrio (3) F, S Faculty

Analysis of social institutions in the Chicano community. Survey of educational political, religious, economical and social systems. Field work will be required to provide relative experiences

## 360. Justice and the Chicano (3) F, S Lopez

Study of the administration of justice as it relates to the barrio and the Chicano examination of police-community relations, administrative procedures, courts and jury systems and their relationship to Chicanos. Analysis of civil rights legislation and its effectiveness on the Chicano community.

## 375. The Chicano in the Penal System (3) F,S Lopez

Examines via discussion and observation rehabilitational, educational and the Chical grative to the Chicano. Selected field trips will be scheduled throughout the semester.
380. Chicano Roots in Precolumbian Mexico (3) F Sanchez, Faculty

History of Meso-America from prehistoric times to the Spanish conquest, emphasizing the study of the societies and the religious and intellectual life of people of ancient middle Am erica.
400. Chicano Roots in Modern Mexico (3) S Sanchez, Faculty

Effects of the political and cultural evolution of modern Mexico on the Chicanos of the Southwest as demonstrated by the conquest, War of Independence, the revolution and contemporary times.
402. Bilingual Linguistic Studies (4) F Osuna

Prerequisite: Two years of college level Spanish. Study of the Spanish and English linguistic patterns of the Chicano, specifically in the southwestern United States. Class will include use of the language laboratory
403. Dialectology of the Southwest (3) S Osuna

Prerequisite: Mexican American Studies 402 or equivalent. Analysis of the Spanish and English dialects of the Chicano, specifically in the Southwest United States. Students will complete field work projects.
405. Chicano Literature (3) F Osuna, Ramirez

Prerequisite: Reading and listening comprehension of Spanish language plus any upper division literature class. In-depth study and analysis of the history development, themes and genres of the literature of the Chicano and by the
415. La Chicana (3) $S$ Nieto, Faculty

This course is designed to survey the historical and sociological impact of the Chicana feminist movement on the Chicano community. Class work will include the analysis of the unique factors of Chicana feminism as compared to the national and
420. Chicano Heritage in the Arts of Mexico and the Southwest (3) $S$ Faculty Historical and philosophical analysis of Indian Mestizo and Chicano plastic arts, music and dances with a view to understanding the Chicano heritage.

## 425. Mexican and Chicano Folklore (3) F,S Osuna

Prerequisite: Mexican American Studies 103B or equivalent. Study of folklore with special reference to the folkloric contribution of Mexico and the Southwest to the United States. Emphasis on narrative genres of folklore employing a humanistic and cultural approach. Field work and recording of materials. Reading and oral comprehension of Spanish required.

## 430A-B. Ballet Folklorico (2,2) F,S Faculty

History and practice of traditional Mexican dances from Pre-Columbian to contemporary time. (Lecture 1 hour, dance activity 3 hours per week.)
442. Counseling Chicanos (3) F Hidalgo, Johnson

Prerequisite: Upper division standing in Mexican American Studies or consent of instructor. Present day theories of counseling, theoretical issues and special problems encountered in counseling Chicanos. Goals, processes and techniques of counseling.
443. Psychology of the Chicano (3) F Johnson

Prerequisite: Mexican American Studies 100 or consent of instructor Significance of the "psi" phenomena and its related variables on the cognitive and conative development of the Mexican American in the segregated barrio and integrated suburban environments. Will deal with basic physiological and psychological theories, principles and practices relative to the individual's personality dynamics. Included will be a comparison of Mexican and Western methodology in educational and psychological research endeavors.
444. Chicano Community-School Relations (3) S Hidalgo, Johnson

Comparative study of the pressing issues facing the school and the barrio; development of functional school-barrio relationships based on barrio expectations and educational practices.

## 445. Reading for Chicano Bilingual Children (3) F,S Olguin, Faculty

Prerequisites: Elementary Education 450 or Secondary Education 457, minima command of Spanish. Analysis of and practice in the teaching of reading to the Spanish speaking and the limited English speaking. Comparison of techniques in English and Spanish reading. Required for those pursuing the Bilingual/Cross Cultural Specialist Credential and for those in the Bilingual Multiple Subjects Program in Elementary Education.
453. Chicano Folk Psychology and Mental Health (3) $S$ Johnson

Prerequisite: Consent of instructor. Comprehensive look at the sociopsychological folk mental health techniques of Mexican Americans in the barrio. Historical and theoretical foundations of curanderismo, its presuppositions, basic concepts and categories of illness. Field work will be required.

## 460A-B. Chicano Creative Writing Workshop (3) F,S Osuna, Ramirez, Sanchez

Prerequisites: Mexican American Studies 203 or equivalent, six upper division units of Mexican American Studies. A workshop allowing maximum independence for the pursuit of creative work in the genre of one's choice while investigating works by accomplished Chicano writers. Use of Southwest Spanish dialects.

## 480. Chicano Political Systems (3) F Lopez

Attempts by Chicanos to work within, and outside of, the United States political system from 1836 to 1910 , and including contemporary political ideology.

## 490. Special Topics in Chicano Studies (1-3) F, S Faculty

Prerequisite: Consent of instructor. Topics of current interest in Chicano studies selected for intensive development. May be repeated for a maximum of six units Topics will be announced in the Schedule of Classes.

## 499. Directed Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Preparation of research reports on selected topics relating to the Chicano. May be repeated for a maxim um of six units.

## Microbiology

## Department Chair: Dr. Frank E. Swatek.

Professors: Anselmo, Carlberg, Fung, Kazan, Kim, Raj, russell, Swatek
Assistant Professors: Geesey, Itatani

## Lecturers: Brosbe, Buggs.

Undergraduate Adviser: Dr. Frank E. Swatek
M.S. Graduate Adviser: Dr. David Carlberg.
M.P.H. Graduate Adviser: Dr. Betty Kazan.

The curricula in microbiology leading to a bachelor of science degree are designed to satisfy the needs of four basic groups: (1) the general microbiology degree is of a broad nature and is designed to meet the needs of those preparing for careers in medical or industrial research, industry, public or private laboratories or graduate study; (2) laboratory technology to give the student background and specific instruction in this area. This study is designed to qualify the student for field work and State license. $\dagger$ This type of career offers opportunities in hospitals, city, county, state and national public health and private laboratories; (3) the preprofessional option is one designed to prepare the student for medical, dental, pharmacy or veterinary school; and (4) a major in microbiology can also be utilized for a junior college credential when taken in conjunction with the proper education courses.

All four patterns have basic courses in common. A program desired in any of the four can be arranged through counseling by advisers in the departm ent.

The master of science degree is available to qualified students preparing for professional careers in the fields of the paramedical sciences, industry, government and teaching or preparing for further studies at the doctoral level. A special emphasis is available for those students seeking to fulfill the requirements of the bioanalyst. Students must qualify physically as well as academically to participate in this degree program. Inquiries concerning the graduate program in microbiology should be directed to the department graduate adviser.
Requests for application forms for graduate admission in the department should be directed to the department graduate adviser. Preference will be given to applicants filing applications before March 15 for the fall semester and before October 15 for the spring semester. All applicants are urged to submit their applications, transcripts and three letters of recommendation to the graduate adviser before the above dates.
Teaching assistantships and graduate assistantships are available to qualified individuals within the resources of the department. Requests for application forms should be directed to the graduate adviser.

[^10]
## Major in Microbiology for the Bachelor of Science Degree

## General Microbiology Option (code 3-7654)

Lower Division: Chemistry 111A-B, 251; Mathematics 102 or 115S; Physics 100A-B Microbiology 210; Biology 216.
Upper Division: Biology 342; English $317 \ddagger$; and a minimum of 36 units including the following: Microbiology $320,330,360,452,471$; Microbiology 450, 451, or Biology 370; Chemistry 327, 441A-B; and a minimum of 6 units in microbiology to b selected in consultation with the major adviser from upper division microbiology courses

## Medical Microbiology Option (Laboratory Technology) (code 3-7655)

Lower Division: Chemistry 111A-B, 251; Mathematics 102 or 115S; Physics 100A-B Microbiology 210, Biology 216.
Upper Division: Biology 342; English $317 \ddagger$; and a minimum of 36 units including the following: Microbiology 320,322,323,330,360,452; Chemistry 327; and 448M, 447; or 441A-B, 447; and a minimum of 6 units in microbiology to be selected in consultation with the major adviser from upper division microbiology courses.

## Preprofessional Microbiology Option

(pre-medical, pre-dental, pre-pharmacy, pre-veterinary):
The preprofessional option follows either the general microbiology or the medical microbiology options.

The elective units are selected (in consultation with the major adviser) to satisfy the specific course requirements of the professional school to which the student seeks admission

## Minor in Microbiology (code 0-7654)

A minimum of 21 units which must include:
Lower Division: Microbiology 210, 211
Upper Division: Microbiology 320,330, 471 and any one of the following four unit sequences: (a) Microbiology 322 and 496 or (b) 360 or (c) 452 and 453.

## Master of Science Degree with a Major in Microbiology (code 6-7654)

## Prerequisites

1. A bachelor's degree with a major in microbiology from this University with a GPA of 3.0 or better, or:
2. A bachelor's degree with a major in microbiology, bacteriology or related fields from an accredited institution, with a GPA of 3.0 or better on the condition of completing deficiencies, if any, in the upper division course work as required of a microbiology major at this University as described in no. 3, or:
3. A bachelor's degree in any academic area from an accredited institution with an undergraduate overall grade point average of 3.0 or better, on the condition of completing a minimum of 24 units of upper division courses in microbiology or related fields before starting the full graduate program. These courses must be comparable to those required of a major in microbiology at this University, and should include but not be limited to medical bacteriology, immunology and serology, organic chemistry and biochemistry (two semesters). A course in general microbiology if taken as an upper division course may apply towards the 24 units. Deficiency units will not apply to the graduate program, or:
4. A student whose overall undergraduate GPA is less than 3.0, but who shows promise in all other respects, may be given a special consideration for admission.
$\ddagger$ Subject credit waived by the department for a student with 6 or more units in English composition and who demonstrates high proficiency in grammar as shown by an English Proficiency Test.

Following admission to the University and tentative acceptance by the department, each student will be interviewed by the Department Graduate Committee or the graduate adviser to formalize the acceptance by the department, determine the student's overall caliber for graduate studies, evaluate transcript records to detect any scholastic deficiencies and counsel in the chosen discipline. A qualified student is thus admitted to the graduate degree curriculum in microbiology with conditionally classified graduate standing.

## Advancement to Candidacy

The sequential steps leading to the advancement to candidacy are:

1. The completion of all scholastic deficiencies, if any, satisfactorily by maintaining a 3.0GPA.
2. As soon as possible each graduate student will choose a thesis adviser who will establish the student's Thesis Committee of at least three members (thesis adviser and at least one other member of this department) with expertise specific to the student's chosen and related field of interest in microbiology.
3. The Thesis Committee will formulate the student's graduate degree program (a minimum of 30 units) and forward it to the Dean of Graduate Studies for final approval. This should be done at least one year before graduation.
4. Upon evidence of satisfactory progress and completion of a comprehensive written examination, the Thesis Committee may recommend the student to the Dean of Graduate Studies for advancement to candidacy. This should take place at least one semester before graduation. Upon approval by the Dean, the student has officially attained classified graduate standing.

## Requirements for the Master of Science

1. A minimum of 30 units of upper division and graduate courses of which a minimum of 20 units must be in the Microbiology $500-600$ series courses. All students must complete Microbiology 450, 471, 694A,B and 697; other courses in related subject matter must be approved by the candidate's Thesis Committee.
2. A reading knowledge of German, French or other foreign language may be required, depending upon the candidate's program of study as recommended by the candidate's Thesis Committee,
3. Thesis, Microbiology 698.
4. Final oral examination-A final comprehensive oral examination including the defense of the thesis will be administered by each candidate's Thesis Committee. It will be open to all faculty and to the public.

## Master of Public Health

## General Information

The master of public health degree is designed for professionals who have already had experience within a health-related field. It is designed to be completed in 12 months of full-time study. There is a core curriculum and two options. Field experience and a comprehensive examination, rather than a thesis, are required. The program has few elective courses.

## Medical Laboratory Supervisor Option (code 7-7657)

This option provides advanced instruction necessary for laboratory personnel to advance to senior laboratory and supervisory positions.

## Nurse Epidemiologist Option (code 7-7656)

This option provides advanced instruction for bachelor degree nurses who wish to be practicing epidemiologists in hospital and related environments.
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*424. Advanced Hematology (3) F,S Faculty
Prerequisites: Medical technology license or a "B" or better in Microbiology 323 Investigation into blood cell formation in bone marrow and the reticuloendothelium system. Response of these cells to disease processes. (Lecture and demonstration 3hours.)
*425. Public Health Microbiology and Diagnostic Procedures (2) F,S Russell Prerequisites: Microbiology 320 and concurrent enrollment in either Microbiology 426 or 427. Diagnostic procedures for bacterial, mycobacterial, spirochaetal, viral and rickettsial agents of public health importance. Standard methods for the examination of food, water and dairy products. (Lecture 2 hours.)
*426. Laboratory Methods in Public Health Microbiology (2) F,S Russell
Prerequisite: Concurrent enrollment in Microbiology 425. Laboratory course for studying diagnostic procedures for infectious agents of public health importance and examination of food, water and dairy products. (Laboratory 6 hours.)
*427. Public Health and Diagnostic Procedures Laboratory (2) F,S Russell
Prerequisite: Concurrent enrollment in Microbiology 425. Laboratory course in the techniques for studying those microbes involved in hospital and other institutionally acquired infections. Not available for credit for microbiology majors. (Laboratory 6 hours.)

## *441. Marine Microbiology (3) F,S Faculty

Prerequisites: Microbiology 210, Chemistry 441A or consent of instructor. Survey of the interaction of micro-organisms in the sea. Emphasis on elements, cycles and metabolic conversion of environmental materials. (Lecture 1 hour, laboratory 6 hours.)
*450. Microbial Genetics (2) F,S Carlberg
Prerequisites: Microbiology 210, Chemistry 441A, consent of instructor. Biochemical and cytological bases of microbial genetics; nature, replication, modification and transfer of genetic material. (Lecture 2 hours.)
*451. Microbial Genetics Laboratory (2) F,S Carlberg
Prerequisites: Microbiology 450 (may be taken concurrently), consent of instructor. Laboratory study of microbial genetics. (Laboratory 6 hours.)
*452. Viruses (2) F,S Faculty
Prerequisites: Microbiology 210, Chemistry 327. Consideration of principles in virus diseases of man and animals; virus-cell interactions. (Lecture 2 hours.)

## *453. Virology Laboratory (2) F,S Faculty

Prerequisites: Microbiology 320, 452 (may be taken concurrently), consent of instructor. Laboratory study of the bacterial and animal viruses. Techniques for growth, titration of infectious units, cytopathological changes produced by the viruses. Physical and chemical prospectus of the viruses studied. (Laboratory 6 hours.)
*470. Bacterial Anatomy and Cytochemistry (3) F,S Raj
Prerequisites: Microbiology 320, Chemistry 441A (may be taken concurrently) Morphogenesis, fine structure and chemical composition of bacterial cells. (Lecture-demonstration 3 hours.)
*471. Bacterial Physiology (3) F,S Raj
Prerequisites: Microbiology 320, Chemistry 441A, consent of instructor. Cellular physiology at the molecular level as related to bacterial growth, reproduction, nutrition, metabolism and ecology. (Lecture 3 hours.)
*472. Bacterial Structure and Physiology Laboratory (2) S Raj
Prerequisites: Microbiology 470 or 471 , consent of instructor. Laboratory echniques used in the study of bacterial structure and physiology. (Laboratory 6 hours.)
*473. Industrial Microbiology (3) F,S Kim
Prerequisites: Microbiology 210, Chemistry 441A or consent of instructor. Role of micro-organisms in selected industrial processes; emphasis on bacteria, yeasts and molds. (Lecture 2 hours, laboratory 3 hours.)
480. Proseminar in Microbiology (2) F,S Faculty

Prerequisites: Senior standing in microbiology, consent of instructor. Faculty and student presentation and analysis of current topics in microbiology.
496. Investigations in Microbiology (1-3) F, S Faculty

Prerequisite: Consent of instructor. Research in a specific subject in microbiological sciences to be approved and directed by a faculty member. The one unit course involves library research. The two and three units courses involve ibrary and experimental research. Special projects may include experience with such techniques as ultracentrifugation, electron microscopy, radio tracers, tissue culture, etc.

## Graduate Division

513. History of Microbiology (2) S Faculty

Prerequisite: Graduate standing in microbiology. Systematic survey of the Prerequisite: Graduate standing from past to present time. (2 hours weekly.)
514. Microbiological Instrumental Methods and Analysis (3) S Carlberg

Prerequisites: Microbiology 471, Chemistry 441A. Theory and appration instrumental methods in microbiological problems. (Lecture 1 hour, laboratory 6 hours.)
526. Biochemical Diagnostic Procedures in Microbiology (3) F Faculty

Prerequisites: Microbiology 330, Chemistry 441A-B, 447. Medical laboratory experience is recommended. Theory and application of diagnostic procedures for the clinical microbiology research laboratories. (Lecture 1 hour, laboratory 6 hours.) 546. Clinical Diagnosis by Laboratory Methods and Quality Control
(4) S

Faculty
Prerequisite: California Clinical Laboratory Technologist licensed or equivalent Prerequin Correlation of laboratory tests in relationship to with consent of instructor. Results of laboratory measurement of alterations in normal physiology. Restrointestinal, renal and endocrine systems pathologies of the cardiovascular, gastrointest evaluation of these diseases. This will be interpreted in relationship to laboratory evalests. Students must already be course does not study techniques of laboratory laboratory tests.
550. Experimental Microbiology

Detailed study of selected topics in microbiology, with emphasis on laboratory approaches to the problem. (A) Microbial Ecology, (B) Immuno-chemistry, (C) Microbial Metabolism, (D) Eumycetes, (F) Medical Parasites, (G) Schizomycetes, (H) Viruses. May be repeated for credit with different topics. (Lecture 1 hour, laboratory 6 hours.)
A. Microbial Ecology (3) S Faculty (3icrobial populations as they naturally Prerequisites: Microbiology 320; 461. Microblt with credit in Microbiology 542. occur and their interactions. Not open to students with credit in Microbiology 542.
B. Immunochemistry (3) S Faculty

Prerequisite: Microbiology 431. The chemical bases of the immune response as well as the use of precise, sensitive and specific immunochemical methods for the characterization and study of various biological processes and materials. Not open to students with credit in Microbiology 532.

## C. Microbial Metabolism (3) F Raj

Prerequisites: Microbiology 471, Chemistry 441B (may be taken concurrently), consent of instructor. Advanced concepts of microbial physiology with emphasis on their chemical activities and metabolic pathways. Not open to students with credit in Microbiology 575.
D. Eumycetes (3) F Faculty

Prerequisites: Microbiology 360 or 461 and 471 . Detailed study of the yeasts and fungi with special emphasis on their biochemical life processes. Single sport slide culture and hyphal fusion techniques will be utilized to investigate the physiological state of both the haploid and diploid stages. Effects of the physical and chemical environment on growth, reproduction and biosynthesis of metabolites. Not open to students with credit in Microbiology 562.

## F. Medical Parasites (3) S Kazan

Prerequisites: Microbiology 322, 330; Biology 314. Medical protozoa, Helminthes special emphasis on cultural procedures and special cytological staining techniques. Not open to students with credit in Microbiology 527.
G. Schizomycetes (3) S Faculty

Prerequisite: Microbiology 471. Detailed study of the bacteria; special emphasis on the heterotrophic and the autotrophic forms. Not open to students with credit in Microbiology 574.
H. Viruses (3) F Faculty

Prerequisites: Microbiology 320,453, 471, consent of instructor. Detailed study of virus elemental particles; special emphasis on the physical and chemical structure of virus particles. Tissue culture, chick embryo cytopathological techniques and special biochemical procedures are studied as they relate to viruses. Not open to students with credit in Microbiology 554.
691. Supervised Independent Study (1-4) F,S Faculty

Advanced independent study in the field of the candidate's option for the master of public health degree. The subject of the study may be different from the field training in the option.

## 694A,B. Seminar in Principles and Theories of

## Microbiology (1,1) F,S Faculty

Prerequisite: Graduate standing in microbiology. Presentation and discussion of advanced work in special fields including original research of faculty and graduate students. (Weekly meetings.)
695. Seminar in Immunogenetics (2) S even years Carlberg, Fung

Prerequisites: Microbiology 330, 450; Microbiology 431 and Biology 370 are recommended. Discussions and critical evaluations of selected topics from current literature in the field of immunogenetics. Graduate student and faculty participation. (2 hours weekly.)
696. Field Experience in Medical Laboratory Supervision (2-4) S Faculty

Field experience in hospitals and other health-related facilities is required for all candidates for the master of public health degree.
697. Directed Research (1-3) F,S Faculty

Prerequisite: Consent of instructor. Laboratory work supervised on an individual basis.
698. Thesis (1-6) F,S Faculty

Prerequisite: Consent of instructor. Original research in microbiology carried out under supervision of the faculty on an approved topic of mutual interest and the formal report of this research.


## Military Science

## Air Force ROTC

Through arrangements with the University of Southern California (USC), the Tiversity of California at Los Angeles (UCLA) and Loyola Marymount University University of California at Los Angere Reserve Officers Training Corps (AFROTC) (LMU) two, three and four-year Air Force programs are available to all qualified students at alifornanted as elective credits Beach. Academic units earned in this program are couTC programs leads to a toward graduation. Successful completion of the AFROTC progranse. Four-year commission as a second lieutenant in the Air Force Reserve. Four-year cholarships must be applied for before December 15 in the calenda yoar prior to scholarships must be appling fall. Three and two-year scholarships are available to entering college the following fall. Three and wo ters those already in college. All scholarship recipients and books and $\$ 100$ a month. All students during the school year. All qualified program receive an allowance of $\$ 100$ a mont during their final year in the program cadets are provided 25 hours of flying training du For additional information contact the Office of Career Pla Dr. Gene Simonson, Economics Department, at California State Universis, Long Beach or the Department of Aerospace Studies (AFROTC), University of Southern California, California 90007, phone (213) 741-2670, the Departm ent o Aerospace, Los Angel California 90024 , Loyola (213) 825-17421743 , California 90045, phone (213) 642-2770

## General Information

The Department of Aerospace Studies offers programs of instruction leading afficer in the United States Air Force. To obtain this directly to a commission as an ond an commission, qualified male and female students mororan of instruction and aptitude test, a physical examination, complete ere pree. Those male students concurrently receive or possess an undergradualot Training will be given flight who qualify for and plan to enter Air Force Pilot Highly qualified students may instruction as part of their last year in the program. Highly qualified students may compete for full-tuition assistance

## Two-Year Program

This program is available to any student having two academic years remaining either aduate or summer field training course followed by two years or 12 semester hours). Application for (AS300 and AS400, totaling 18 quarter hours or 12 semer preceding the summer field this program sh
training course.

## Four-Year Program

This program consists of four years ( 24 quarter hours or 16 semester hours) of aerospace studies courses plus a four-week summer field training course. Enrollment in the first two years of Aerospace Studies (AS100 and AS200) is accomplished in the same manner as in any other course of instruction at USC, UCLA or LMU. Application to enroll in the last two years (AS300 and AS400) must be made while enrolled in AS200.

## Curriculum

The AFROTC curriculum consists of the following series of courses (semester hours at USC, quarter hours at UCLA and semester hours at LMU):

## AS100 (Freshman year).

These courses examine the role of the Air Force in the contemporary world by studying the total force structure, strategic offensive and defensive forces, general purpose forces and aerospace support forces. (Lecture 1 hour, laboratory 1 hour per quarter/semester.)

## AS200 (Sophomore year).

These courses include the study of the development of air power from balloons and dirigibles through the peaceful employment of U.S. power in relief missions and civic action programs in the late 1960s and also the air war in Southeast Asia (Lecture 1 hour, laboratory 1 hour per quarter/semester.)

## AS300 (Junior year).

These courses examine military professionalism and existing patterns of civilmilitary relations; analyze the international and domestic environments affecting U.S. defense policy; examine the post World War II development of defense strategy and the methods of managing conflict; and study the manifold variables involved in the formulation and implementation of national security policy. (Lecture 3 hours, laboratory 1 hour per quarter/sem ester.)

## AS400 (Senior year).

These courses study management from the point of view of the Air Force junior officer. Within this framework the subjects of military leadership and military law have been integrated. Attention is devoted to the progressive development of communicative skills needed by junior officers. (Lecture 3 hours, laboratory 1 hour per quarter/semester.)

## Field Training Course

This course is conducted during the summer months at selected Air Force installations within the continental limits of the United States. Successful completion is required to be eligible for a commission. For those students enrolling in the two-year program the summer course is six weeks long and includes study of the academic subjects covered in Aerospace Studies 100 and 200. The six-week camp pays $\$ 524.00$. Students enrolled in the four-year program take a four-week summer course which is normally scheduled between the Aerospace Studies 200 and 300 years. The four-week camp pays $\$ 322.00$.

## Army ROTC

The Army Reserve Officers Training Corps (AROTC) program is available to California State University, Long Beach students through the Extended Education Office of CSULB. All classes are conducted on campus with the Army ROTC office located in Psychology 433 or call 597-1853 or 831-7463.

Four-, three- and two-year programs leading to a commission as a second lieutenant in the U.S. Army or Army Reserve are offered. Participants must be physically qualified full-time students at the undergraduate or graduate level

Courses consist of two academic hours once a week, plus a four-hour leadership laboratory once a month. Academic credits earned in the program may be counted as electives within degree requirements. All students enrolled in the final two years of the program receive an allowance of $\$ 1000$ during the school year.

The normal four-year program consists of the basic and advanced courses. The basic course (Military Science I and Military Science II) is normally taken in the freshman and sophomore years, with no military obligation. The advanced course (Military Science III and Military Science IV) covers the final two years and includes a summer advanced camp with pay and travel expenses.

The three-year program enables a student with three academic years remaining in college to complete the program by taking two military science courses (half courses) per term the first year plus a one-hour weekly laboratory

The two-year program (advanced course only) is available to students who have two years remaining toward a baccalaureate or graduate degree. The student attends a six-week basic camp, with pay, the summer before enrolling in the advanced course, with application by April of that year. Camp attendees are under no obligation and may compete for two-year scholarships during basic camp.

Veterans may qualify to enter the advanced course without basic camp. They are eligible to receive the $\$ 100$ per month allowance as well as GI Bill benefits to which they are entitled.

Prerequisite to commissioning, the advanced camp is conducted at Fort Lewis, Washington, normally between the first and second years of the advanced course. Leadership development is emphasized during the six-week summer practicum.

Scholarships are available competitively to all students, in addition to the monthly allowance for all advanced course students. Scholarship recipients receive full tuition, required fees and books and $\$ 100$ per academic month for the term of the scholarship. High school seniors must apply by December 1 of the year preceding college entrance for four-year scholarships; recipients must attend an institution offering the four-year Army ROTC program. Three-, two-and one-year scholarships are available to students regardless of whether they are enrolled in Army ROTC or not. Students cross enrolled while attending other institutions are also eligible.

## Military Science Curriculum

## MSI (First Year)

X101. The U.S. Defense Establishment |
X102. The U.S. Defense Establishment II
Evolution of Defense Department and the military services with emphasis on U.S. Army; military institutions, other elements of national policy/strategy. Theory, nature, causes and elements of warfare; evolution of weapons/tactics.

## MS II (Second Year)

X201. U.S. Military History
X202. U.S. Military History
In-depth study of U.S. military history from 1755 to present. Emphasis on leaders, actions, opposing strategies and related considerations.

## MS III (Third Year)

X301. The Psychology of Leadership (with Military Applications)
X302. Theory of Learning Applied to Teaching (with Military Applications)
Concepts in behavioral sciences for leadership/management; problems in directing and controlling. Learning theories, application of learning theories to teaching, lesson planning, testing, evaluation, student teaching.

## MS IV (Fourth Year)

X401. Decision-Making and Society (with Military Applications)
X402. Military Legal System and Societal Relations

Decision-making process, optimizing decisions, information/systems management, operations research. Military law and legal systems. U.S. Army as professional organization, relationship to society, professional ethics, social problems.

For additional information contact the Department of Military Science, CSULB Psychology Building, Room 433, phone 597-1853 or 831-7463.

## Music

## Department Chair: Dr. Gerald R. Daniel

Emeriti: Nadyne C. Gibson, Sanford M. Helm, Russel N. Squire, Gerald Strang, Henri Temianka.
Professors: Anderson, Becker, Curtis, Dallin, Daniel, Lampl, Musafia, Pooler, Rayner, Sindelar, Stroud, Tyndall, Winslow.
Associate Professors: Andrus, Crockett, Matthews, Norman, Prince, Roskam,
Sindelar, Thompson.
Assistant Professors: Forney, Wilson.
Credential Adviser: Dr. Robert Anderson.
Undergraduate Adviser: Dr. Gerald Daniel.
Graduate Adviser: Ms. Dora J. Wilson
Graduate Committee: Anderson, Dallin, Lampl, Pooler, Wilson.

## General Information

The undergraduate music curriculum provides programs for (1) the student who wishes to become a professional musician; (2) the student who plans to enter the teaching profession; (3) the student for whom music is part of a general education (4) the student intending to pursue an advanced degree in music

All entering freshmen and transfer students are required to take a group of
All entering freshmen and transfer students armally administered in May and placement tests and auditions weistration week. Each entering student should December and at the beginning of registration w
inquire at the Music Office for dates and details.

Each music major must deciare a specialization in some performance area (voice, per instrument), develop ability in this area, appear in student recitals and demonstrate progress to the satisfaction of the faculty.

Since keyboard facility is important to every music major, each student is urged to meet keyboard proficiency requirements in the lower division, regardless of the performance area.

Participer or without credit, in of the principal performance Panization (Chimphony Orchestra or Band) is required of each music major each semester.

A satisfactory senior project is a prerequisite to graduation.
The Music Department holds membership in of arts and master of arts Schools of Music. The bachelor of music, bachel
degrees in music are accredited by the association. leading to the master of arts
The Department of Music offers graduate study leadment office for counseling. degree. The candidate should arrange with the department orelidate qualifications Special placement examinations or aud requirements of the University must be met for graduate work in music. All general required below.

## Major in Music for the Bachelor of Arts Degree (code 2-5820)

Lower Division: Music 020 (four semesters), 100 (four semesters), 141A-B, 142A-B 241, 260, keyboard com petency equivalent to 220B.
Upper Division: At least 24 units of upper division music courses, including: Music 300 (four semesters), 341, 342, 360, 429 (four semesters), 428. Undergraduates carrying more than 6 units are required to take Music 020 every semester except the sem ester of the senior project.

## Major in Music for the Bachelor of Music Degree

A minimum of 72 units including the core and one area of concentration is required, which should include at least 24 upper division units. Concentrations include history and literature, composition, instrumental music, choral-vocal music and individual performance. Admission to the concentration is determined by audition and approval of the chairperson of the department. Application for admission to concentration must be submitted no later than the beginning of the junior year, and significant progress must be demonstrated during the remaining two years. A bachelor of music degree requires a total of 132 units which must include a minimum of 40 upper division units.
Core: Music history and literature (Music 160, 260, 360); music theory (Music 141A. B, 142A-B, 241, 341, 342); music performance (Music 100, 300-one unit each semester in residence); keyboard proficiency (equivalent to Music 220B); semester recital (Music 020-each semester in residence); senior project (Music 423).

Choral-Vocal Music Option (code 4-5821)
(This option is intended for teaching credential candidates.) Music 429 or $\times 429$ (must be taken each semester in residence); Music 320 or 322, 327, 328, 421, 422, 426, 465, 483A-B; individual instruments, Music 125/325, 1 unit in each family of instruments (may be waived in whole or part upon passage of proficiency exam).

## Composition Option (code 4-5822)

Required: performance level of junior on major performance medium, Music 200 or 400 (must be taken twice), 429 or $X 429$ (must be taken twice), 441, 442, 444, 445 (may be taken three times), 446; six units to be selected from Music 422, 425B, 443, 491, 499. One course from Music 393, 460, 461, 462, 463, 464, 465, and 469.

## History and Literature Option (code 4-5824)

Required: performance level of junior on major performance medium, 3 units of library resources and research elected as Music 499 by advisement. Elect 18 units from Music 393, 460 (may be taken twice), 461, 462, 463, 464, 465, 469, 495; Music 400 (Collegium Musicum - must be taken three times). Recommended courses outside music: English 101, foreign language (preferably German) equivalent of 201A, history, art history, theatre history.

## Instrumental Music Option (code 4-5826)

(This option is intended for teaching credential candidates.) Music 429 or $\times 429$ (must be taken each semester in residence); Music 425A-B, 442, 465, 480, 481, 482A. B, 485; 10 units of individual instruments, Music $125 / 325$, to be distributed by advisement over brass, woodwinds, strings and percussion, with at least two semesters each in brass, woodwinds and strings (may be waived in whole or part upon passage of proficiency exam).

## Performance Option (code 4-5828)

Individual instruction (Music 429 or X429) required each semester in residence with an achievement of senior level on major performance medium. Music 335 may be substituted for this requirement in certain concentrations when offered and advised by the department. Junior project (Music 323) required of all students during their junior year.

Piano: Music 200/400 (4 units); Music 321, 326A-B, 431, 433, 461; Music 335 ( 8 units in lieu of 429 or X429 when available).

Organ: Music 421, 424A-B, 442, 444, 460 or 461, 484.
String Instruments: Music 200/400 (4 units); Music 425A-B, 464; Music 335 ( 8 units in lieu of Music 429 or X429 when available).
Wind Instruments: Music 200/400 (4 units); Music 425A-B, 464
Voice: Music 328, 332, 421, 426, 432A,B, 462.
Opera: Music 328, 332, 421, 463; Theatre Arts 231; 3 additional units selected from Theatre Arts 242, 244, 246; Music 130/330 allowed for 4 units of activity credit. Piano Accompanying: Music 200/400 (4 units); Music 321, 326A-B, 328, 332, 421, 431 A-B, 433, 462.
Commercial Music: Music 200/400 (at least 4 units, 1 of these in New Music Ensemble); Music 271, 370, 371, 372, 393, 442, 446, 474. (Two units of Music 429 or X429 must be taken on doubles for reed majors.)

## Certificate in Music Therapy

Requirements for the Certificate in Music Therapy

1. A bachelor of arts degree in music.
2. Thirty-five units distributed as follows:

Lower Division: Music 122A or 125,250 A-B
Upper Division: Music 325, 350, 381, 386, 421 or 425 A, 450, 451, 452; Educational Psychology 301, 305, 350, 451.

## Master of Arts Degree with a Major in Music (code 5-5820)

## Prerequisites

1. A bachelor of arts with a major in music or bachelor of music degree, or:
2. A bachelor's degree with a minimum of 24 units of upper division courses in music comparable to those required of a major in music at this University

## Advancement to Candidacy

Approval of a graduate program by the department graduate adviser (and by the student's graduate committee when one is required by the nature of the program), the chair of the Music Department and the Dean of Graduate Studies.
2. The student must satisfactorily pass a screening examination. All prospective candidates are expected to take the examination during the first semester in which they are registered for courses applicable to the degree (or the first time it is offered thereafter).
3. The candidate may file for advancement to candidacy after filing a transcript f credits (form), removing all deficiencies, and completing all prerequisites.

## Requirements for the Master of Arts

1. Completion of a minimum of 30 units of approved upper division and graduate courses with at least 24 units in the major. (The program may not include more than six units of transfer graduate credit.)
2. Up to six units of upper division or graduate courses may be taken outside the major with the approval of the student's graduate committee or the graduate adviser.
3. A comprehensive examination administered by the department graduate adviser or Music 698-consisting of a thesis, recital or project supervised by the student's graduate committee. 600 series in music including Music
4. A minimum of 15 units in the 500 and/or 600 series in music including Music $541,542,696$ and two courses chosen from in
Music 696 should be taken the first time it is offered.

## Teaching Credentials:

See Instrumental Music and Vocal-Choral Music options under B.M. degree.
Sentials:

## Music Performance

Opportunities to participate in various instrumental and vocal ensembles are available to all students. Before enrolling in a performing group students should apply to the director of the organization in which they wish to participate. Music performance courses may be repeated; up to 8 units of credit in Music 100 or 300 may be counted toward a bachelor's degree. Simultaneous enrollment in more than one section is permitted

## Lower Division

## 020. Semester Recital (0) F,S Faculty

Recital attendance and performance on principal instrument or voice. Required of undergraduate music majors each semester.
100. Performance (1) F,S Faculty

Prerequisite: Consent of instructor. Major performance groups, including University choir, Forty-Niner Chorus, men's chorus, women's chorus, band, orchestra, etc. (See note on music performance.)
101. Marching Band (2) F Curtis

Performance in the University Marching Band, half-time shows and other special marching events. Required attendance at all performances (see note on music performance).

## 120A-B. Class Piano (1,1) F,S Faculty

Technique, tone production, rhythm, sight-reading, interpretation and keyboard facility. Meets piano requirement for music majors and minors

122A-B. Class Voice (1,1) F, S Faculty
Fundamental technique of singing, tone production, voice placement, breathing, diction. Repertoire and song interpretation
125. Instruments (1) F, S Faculty

Prerequisite: Limited to music majors and minors. Class instruction in applied music. Areas include: flute, oboe, clarinet, bassoon, horn, trumpet, trombone, baritone, tuba, percussion, violin, viola, 'cello, bass, or groups such as woodwinds, brass, strings. May be repeated for credit.
130. Opera (1) F,S Lampl

Preparation, rehearsal and public performance of traditional and contemporary opera. May be repeated for credit.

## 140. Basic Music Theory (3) F, S Faculty

Notation and reading of music. Written, aural and performance experience with scales, intervals, chords, and melodies. Provides essential background for more advanced courses in music theory. (Lecture-discussion 3hours.)

## 141A-B. Musicianship (2,2) F,S Faculty

Prerequisite: Music 140 or a satisfactory score on a placement examination Music 142A-B to be taken concurrently. Sight singing, keyboard harmony, melodic and harmonic dictation through chromatic harmony and modulation.

## 142A-B. Harmony (3,3) F,S Faculty

Prerequisite: Music 140 or a satisfactory score on a placement examination. Music 141A-B to be taken concurrently. Traditional harmony: chord choice, part writing and analysis.

## 160. The Arts and Society (3) F,S Daniel

Examination of the nature of the arts, the creative process, the materials and media, and its changing role in history and in society.
180. Exploring Music (3) F,S Faculty Fundamentais of music
singing and playing music
190. Listener's Approach to Music (3) F,S Faculty majors. Materials, forms Nontechnical course open to all students and styles of music with extensive listening.

## 200. Performance (1) F,S Faculty

Prerequisite: Consent of instructor. Specialized performance groups, such as Prequal singers, chamber music, brass or woodwind ensembles, string quartet, etc.

220A-B. Class Piano ( 1,1 ) $\mathrm{F}, \mathrm{S}$ Faculty Continuation of 120A-B
222A-B. Class Voice $(1,1) \quad F, S$ Faculty Continuation of 122A-B
241. Counterpoint (3) F,S Faculty

Prerequisites: Music 141B
250A. Introduction to Music Therapy (2) F Roskam
Prerequisite: General Psychology. An overview of the field for students considering music therapy as a career.

250B. Introduction to Music Therapy (2) S Roskam
Prerequisites: Official acceptance into the music therapy program, Music 250A Biology 107. Formal orientation to various uses of music in therapy with a variety of patient populations.
260. History of Music (3) F,S Wilson

Primarily for music majors and minors, but open to others who scene. Selected Chronological study of music from 1750 to the
71 Improvisation Techniques I (2) F Prince
Basic techniques in improvisation, beginning with simple question and answer hrases and progressing to extended solos. Detailed and applied knowledge of chord progressions.
290. Music in General Culture (3) F,S Stroud the contemporary scene with Artistic and socio-economic bases of music in the majors.

## Upper Division

300. Performance (1) F,S Faculty Major performance groups, including Prerequisite: Consent of instructor. Major performance women's chorus, band, University choir, Forty-Niner Chorus, men's
orchestra, etc. (See note on music per
301. Marching B and (2) F Curtis Band, half-time shows and other special Performance in the university marching events. Required attendance at performances (see note on music performance).
302. Intermediate Piano (2) F,S Faculty

Prerequisite: Music 220B or consent of instructor.

## *321. Theory of Piano Technique (2) F Musafia

Prerequisite: Consent of instructor. Physiological mechanics and psychology of piano playing; theory of fingering; memorization; teaching, with reference to graded materials.

322. Intermediate Voice (2) F,S Faculty<br>Prerequisite: Music 222B or consent of instructor.

## 323. Junior Project (1) F,S Faculty

Recital of the standard literature for solo instrument or voice in the performance option in the bachelor of music degree. Enrollment restricted to music majors passing the qualifying examination.

## 324. Introduction to Organ Technique (2) F,S Stroud

Prerequisite: Music 220B or consent of instructor. Acquaints pianists with organplaying technique; registration, pedal technique, repertoire; performance of simple compositions, accompaniments and hymns.

## 325. Instruments (1) F,S Faculty

See Music 125. May be repeated for credit.
*326A,B. Piano Accompanying (2,2) F,S Crockett
Prerequisite: Piano major or consent of instructor. Instruction and training in the art and the techniques of accompanying for singers, instrumentalists and ensembles. Students with credit in Music 228 or 326 may enroll only in 326B (Lecture 1 hour, activity 3 hours.)

## 327. Techniques of Choral Singing (2) F,S Pooler Vocal and aural training of the choral musician.

## 328. Diction for Singers (2) F Neiswender

Prerequisites: Music 122A-B or equivalent. Principles of pronunciation and enunciation of English, German, French and Italian texts, with special emphasis on the rhythmic and dramatic aspects of articulation. Use of international phonetic alphabet.
*330. Opera (1) F,S Lampl
Preparation, rehearsal and public performance of traditional and contemporary opera. May be repeated for credit.

## 332. Opera Repertoire (2) S Lampl

Prerequisites: Two years of voice study or equivalent and consent of instructor. Study and musical preparation of representative opera excerpts (arias, ensembles, and entire roles). Vocal interpretation as function of the dramatic action.
*335. Advanced Performance (2) F,S Musafia
Prerequisite: Consent of instructor. Advanced study in a performance medium with equal emphasis on concert repertoire and technique. Includes special training for a performing career. May be repeated for credit to a maximum of 8 units.

## 341. Musical Form (3) F,S Faculty

Prerequisites: Music 142B, 241. Small, large, multimovement, variation, and contrapuntal forms in instrumental and vocal music:
*342. Materials of Modern Music (3) F, S Faculty
Prerequisites: Music 142B, 241. Melodic, harmonic, rhythmic and contrapuntal materials of 20th Century music. Analysis of representative compositions and writing in typical contemporary styles.
350. Influence of Music on Behavior (3) $S$ Roskam

View of historical and contemporary uses of music to influence behavior.
360. History of Music (3) F,S Rayner Primarily for music majors and minors, but 1750 . Selected readings, recordings mively
370. Recording and Electronic Techniques (2) S Prince

Technique of the preparation and recording of music and the study of electronic recording and musical equipment.
371. Improvisation Techniques II (2) $S$ Prince

Continuation of Music 271.
372. Jazz Harmony and Analysis (3) $F$ Prince . harmony.
381. Foundations of Music Education (3) F,S Faculty

Prerequisite: Music 386. Analysis of the nature of music experiences and their development through the use of elementary and junior high school music literature. Psychological principles, processes and sequences involved in the acquisition of musical skills, understandings and attitudes and their interrelationships. Open to music majors, music minors, music therapy majors and candidates for the liberal arts degree with a concentration in music. Required for elementary student teaching in music.
*382. Children's Literature in Music (2) F, S Winslow
Music materials designed for children's listening and
principles of presentation.
386. Music for Early Childhood (3) F,S Faculty Prerequisite: Music 180 or consent of instructor.
music materials and activities suitable for early chidhood.
390. Music in Western Civilization (3) F,S Rayner
Music from the Renaissance to the present; lectures, readings and listening. Not open to music majors.
*393. Jazz, An American Music (3) F, S Faculty Studies from recordings, readings and live up to the present. Musical style in influences of jazz and its historical development concepts of form in art. jazz compared to that of other music and to other concepts of form in art

## 400. Performance (1) F,S Faculty

 Prerequisite: Consent of instructor. Specialized per ensembles, string quartet, madrigal singers, chamber music, brass or woodwind ensembles, string quartet, etc.421. Choral Conducting (2) F,S Pooler, Thompson Prerequisite: Music 327 or consent of instructerpretation of choral materials, choral conducting and organization. Study and interpretation
using the class as a laboratory group. Three perrod per witeratur (2) S pooler
*422. Advanced Choral Conducting and Literature (2) S Pooler Prerequisite: Music 421 or consent of instructor. Cince the 16th Century; interpretation; choral schools and composers contemporary secular and sacred choral compositions. Class used as laboraty group.
422. Senior Project (1) F,S Faculty

An individual recital of the standard literature for solo instrument or voice or a written project in certain options in the bachelor of music degree. Enrollment restricted to music majors passing the qualifying examination. Not open to students with credit in Music 428.
*424A-B. Advanced Organ (2,2) F, S Stroud
Prerequisite: Music 324 or consent of instructor. Technique, registration, repertoire. Recitals, workshop and field trips to outstanding organs.
*425A-B. Instrumental Conducting (2,2) F,S Curtis, Lampl
Three hours weekly. (425A not open to students with credit in Music 420.)
*426. Vocal Pedagogy (2) Faculty
Prerequisite: Consent of instructor. Theory and techniques of teaching voice.
*429. Individual Instruction for Music Majors (1) F,S Faculty
Open to music majors only. Private lessons in their major performance medium. Application must be made to the chairman of the Music Department during the semester prior to registration. Registration is subject to his approval. May be repeated for credit.
*431A,B. Score and Sight Reading (2,2) F, S Musafia
Prerequisite: Consent of instructor. Instruction in reading piano music at sight and in reducing vocal and instrumental scores at the piano. Studies in transposition.
*432A,B. Song Repertoire (2,2) F, S Faculty
Prerequisite: Voice major or consent of instructor. Selecting and preparing song literature for public performance. Coaching in languages, musical style and vocal techniques.

## 433. Piano Repertoire (2) $S$ Crockett

Prerequisite: Music 360 or 390 or consent of instructor. Survey of music for the piano, emphasizing compositional and stylistic characteristics of specific periods and composers.
*441. Studies in Musical Analysis (2) F Faculty
Prerequisite: Music 341. Intensive individual and class analysis of representative compositions of various periods and styles.
*442. Instrumentation (3) F,S Faculty
Prerequisites: Music 142B, 241. Range, characteristics, technical capabilities and limitations of orchestral and band instruments. Scoring for string, woodwind, brass and percussion ensembles.
*443. Scoring and Arranging (3) F,S Faculty
Prerequisite: Music 442. Scoring and arranging for orchestras of various sizes for band and symphonic wind ensemble, and for voices.
*444. Composition I (2) F, S Faculty
Prerequisite: Music 341 or consent of instructor. Students wishing to compose in the electronic medium must complete Music 446 as a prerequisite.
*445. Composition II (2) F,S Faculty
Prerequisite: Music 444 or consent of instructor. May be repeated to a maximum of 6 units. Students wishing to compose in the electronic medium must complete Music 446 as a prerequisite.
*446. Electronic Music Composition (3) $S$ Andrus
Prerequisite: Music 342 and/or consent of instructor Introduction to electronic music studio techniques and literature, with instruction in composing using music stronic devices.
450. Psychology of Music (4) F Roskam

Introduction to the physical aspects of music with emphasis on psychological and perceptual responses to music. Primarily for music therapy majors.
451. Music in Therapy (2) S Roskam

Prerequisite: Music 250B. Continued development of methods and materials used in music therapy. Clinical responsibilities expanded.
452. Clinical Experience (1) On demand Roskam

Prerequisite: Music 451. Supervised clinical experience within one area of disability for the duration of the semester. May be repeated once for credit.
*460. Studies in Performance Practices (3) F Forney
Prerequisite: Music 360 or consent of instructor. Surveys problems of vocal and instrumental performance in music of the Middle Ages, Renaissance and Baroque.
*461. Studies in Keyboard Music (3) S, 1980 and alternate years Rayner
Prerequisite: Music 360 or consent of instructor. Survey of the evolution of keyboard music including the clavichord, harpsichord, piano and organ from the 13 th century to the present
*462. Studies in Vocal Music (3) F,1979 and alternate years Faculty
Prerequisite: Music 360 or consent of instructor. A studies course in vocal music mich history and covering a minimum of two of five categories: solo song small ensemble-sacred, small ensemble-secular, large ensemble-sacred and large ensemble-secular.
463. Music of the Theater (3) $F$ Lampl

Prerequisite: Music 360 or Music 390 or consent of instructor. History and Proment 1600 to the present, its conventions and styles. Analysis of representative masterworks.
*464. Studies in Instrumental Music (3) S, 1980 and alternate years Faculty Prerequisite: Music 360 or consent of instructor. A studies course in instrumental music spanning at least three epochs of music history and covering a mord chamber music, orchestral/symphonic and orchestral/concerto.
*465. Studies in Ethnomusicology (3) F Wilson
Prerequisite: Music 360 or consent of instructor. Emphasis on theory and methodology of ethnomusicological study. Investigation of music of particular nonwestern cultures or areas. For music majors only.
*469. Music in the Humanities (2) $S$ Even years Daniel
Prerequisites: Music 160, 260, 360. Exploration of the nature of the musical medium and its logic in relation to various philosophical, artistic and esthetic frameworks, past and present. Required of all music literature majors.
474. Commericial Arranging (3) S Prince

Arranging and scoring for the various types of commercial ensembles in the styles demanded by contem porary performance practices.
*480. Marching Band Techniques (2) F Norman
Marching fundamentals, charting formations, precision drills, parade technique and half-time pageantry.
*481. Instrumental Organization and Literature (3) $S$ Norman
Procedures for organization and development of instrumental programs and literature for performing groups.

482A,B. Instrumental Music Laboratory (1,1) F,S Norman
Laboratory experience in performance on secondary instruments of elementary and junior high level music materials.
*483A,B. Choral Repertoire (1,1) F, S Thompson
Traditional and contemporary choral repertoire for public school teachers and church choir directors.
484. Church Music Practicum (2) S Faculty

Prerequisites: Music 421, 483A or consent of instructor. Basic approaches and techniques in the organization and function of church choirs (children, youth, adult) within the context of the liturgies and services of worship of the major denominations. Techniques in the selection and preparation of repertoire for these various situations

## 485. Teaching Strings (2) $S$ Faculty

Prerequisites: Two semesters of string classes, Music 125 or 325 or equivalent. Teaching string classes effectively; beginning and intermediate levels; dealing with separate and mixed classes (violin, viola, cello and bass combined); correc methods of playing and practice; applied musicianship; motivating the young string player.

## 489. Special Topics in Music Education (1-3) F, S Faculty

Prerequisite: Consent of instructor. Topics of interest in the various areas of music education selected for special presentation and development. May be repeated for a maximum of six units. Topics will be announced in the Schedule of repeated
Classes.

## 490. Musical Cultures of the World (3) F,S Musafia

Musical cultures of the world (excluding Western art music); the role of music in society and its relationship to other arts. Scale structure, instruments, musical forms and performance standards. For music majors or non-music majors
*491. Acoustics of Music (3) S Thompson
Prerequisites: Music 342, Physical Science 102, or consent of instructor. Nature and propagation of sound; acoustics of musical instruments; tuning and temperament; behavior of sound in enclosed spaces, acoustics of music rooms acoustical aspects of sound recording and reproduction.
*495. Special Topics in Music (1-3) On demand Faculty
Prerequisite: Consent of instructor. Topics of current interest in the various fields of music selected for special presentation and development. May be repeated for a maximum of six units. Topics will be announced in the Schedule of Classes.

## *499. Special Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Individual research or group investigation of selected topics. May be repeated for a maximum of six units of credit.

## Graduate Division

520. Advanced Conducting (3) $S$ Lampl, Pooler

Prerequisite: Consent of instructor. Advanced baton technique, interpretation, securing proper sound, organizing routine and program making.
541. Studies in Homophonic Music (3) $S$ Andrus, Dallin

Prerequisites: Music 341, 441, or equivalent. Intensive analysis and synthesis of and techniques with emphasis on those of the twentieth century
Studies in Polyphonic Music (3) F Becker, Sindelar
Prerequisites: Music 241, 341 and 441 or equivalent. Intensive analysis and Presis the forms and techniques of polyphonic music from the Middle Ages to the present
560. Music of the Middle Ages (3) F,1979 and every third semester Rayner

Prerequisites: Music 341, 360, or consent of instructor. Survey of medieval music from the beginnings of polyphony to approximately 1450 . Both monophonic and polyphonic will be covered.
561. Music of the Renaissance (3) F Rayner Prerequisites: Music 341, 360, or consent of to notation, sources, bibliography, and editions.
562. Music of the Baroque Period (3) S Rayner Prerequisites: Music 341, 360
563. Music of the Classic Era (3) S Helm

Prerequisites: Music 341, 360, or consent of instructor. Music from the Rococo to Prerequisites. Music style.
564. Music of the Romantic Era (3) S Helm

Pron the end of the nineteenth century.
565. Twentieth Century Music (3) F Rayner

Prerequisites: Music 341,360 , or consent of instructor. Stylistic analysis and music; aesthetic and socioeconomic problems of contemporary music, survey of new music.
581. Studies in Elementary School Music (3) S Gibson

Prerequisite: Limited to music majors and minors. Consideration of current ractices, curriculum, trends and issues in elementary school music. Selection of various topics appropriate to the needs of individual class members. Oral and written reports.
645. Seminar in Advanced Composition (3) F,S Andrus, Dallin, Sindelar

Prerequisites: Music 443, 444, 445, or equivalent. Free composition in the more extended forms for various combinations of instruments including full orchestra and band.
660. Seminar in the History of Music (3) S Wilson the present.
680. Seminar in Instrumental Music Teaching (3) F Curtis

Prerequisite: Consent of instructor. Principles, procedures, and materials used in the public schools. Special attention given to methods and materials used in instrument classes.
681. Seminar in Choral Music Teaching (3) $S$ Pooler

Prerequisite: Limited to music majors and minors. Research and analysis of principles, procedures, curricula and materials used in choral music performance and composition at all levels of teaching.
695. Reading and Research Seminar (3) $S$ Faculty Prerequisite: Consent of the graduate adviser.

## 696. Research Methods (3) F,S Anderson, Rayner

Bibliography; approaches to contemporary problems in music; demonstration of competence. Required of all master's degree candidates in music.
698. Thesis (2-6) F,S Wilson

Planning, preparation, and completion of a thesis or project related to this field. Limited to graduate students who have taken or are taking Music 696.

## Natural Science

## Upper Division

301. Science in the Elementary School (3) F,S Ritz

Prerequisites: Six units of natural science. Survey of the broad fields of science. Covers basic topics in elementary school science. Not open to science majors or minors. (Lecture 2 hours, demonstration 2 hours.)
302. Elementary School Science Workshop (2) SS Faculty Program in carrying out science activities gron (Workshop 4 hours.)

Torkshop in Environmental Education (3) F,S Ritz
Interdisciplinary workshop/seminar course intended for teachers of all grade , Current environmental issues, field excursions evels or subject specialticular materials and development of nvolvement with innovare 2 hours, workshop 2 hours.)
490. Special Topics in Science Education (1-3) F,S Faculty

Prerequisite: Consent of instructor. Selected topics in science education. Course隹 consent of instructor.
496. Directed Studies in Science Education (1-3) F,S Faculty

Prerequisite: Consent of instructor. Supervised study of current topics in science education. May be repeated for credit.

## Nursing

## Department Chair: Dr. Joan Cobin.

Emeritus: Dorothy L. Walsh.
Professors: Bullough, Cobin, Hoffman, Kaufman, Koehler, Lackey, Pentecost, Sucher.
Associate Professors: Ford, Mayberry, Meisenheimer, Moore, Nelms, Roberts, Siegel.
Assistant Professors: Jasmin, Mullins, Sakamoto, Schwartz, Timpke, White.
Lecturers: Brady, Child, Conway,Deitch, Field, Hanson, Hill, Khoiny, McCarthy, Morgan, Murphy, Owens, Ryan, Sater, Smith, Sparks, Watts, Wroblewski.

## Academic Advising Coordinators:

Basic Students: Ms. Elaine White
R.N. Students: Ms. Sylvia Jasmin

Graduate Students: Ms. Colleen Sparks

## Bachelor of Science in Nursing

The baccalaureate program offers courses that prepare the student to become a professional nurse. Two distinct categories of students are eligible for admission The "basic student" who enters the University without having completed a first The "basic student" who enters the University student" who, having completed a level nursing program and the "registered nurse study to expand her or his nursing course of study at the first level, desires further study category of student enters at capabilities to the professional level. Though each cale different levels, the terminal objectives of the nursing program arses is eligible to both groups. The "basic student" upon comple as a registered nurse. All graduates write the examination for licensure to practice public health nurse in the State of are recommended for certification as a public healta State Board of Registered California. The program is accredited by the
program in nursing is to prepare
The purpose of the bachelor of science program ary care role in a variety of graduates to function as a professional nurse in the primary cations for continuing settings. Graduates are exp

The curriculum is formulated to help the student develop understanding of self and others, intellectual curiosity and ability to work with colleagues to identify and resolve the health problems of individuals and families in a changing society. The professional nurse, while able to assess and intervene where health deviations exist, is committed to the role of maintaining health and preventing illness in self and others

## Requirements for Admission

Students must apply for admission to the University as a nursing major. The number of applicants to nursing exceeds the number that can be accepted. For this reason nursing applicants are subject to criteria in addition to those required for admission to the University. Those accepted with nursing as a major are admitted subject to the approval of the Nursing Department faculty. The "basic student" may apply as a new or transfer student.

## Basic Student

Once admitted to the University basic students are required to do the following prior to acceptance into the nursing program.

1. Earn a G.P.A. of 2.5 or better for all prerequisite courses
2. Complete a series of tests that assess their ability for logical thinking and problem solving
3. Have a personal scheduled interview with a designated nursing faculty member.
4. Have transportation available for travel to extended campus clinical facilities.
5. Obtain malpractice insurance (available through membership in Student Nurse Association, SNAC)
6. Submit transcripts of any previous college work to Nursing Department as well as to the Admissions Office.
Further information regarding admission to nursing courses is available to nursing majors upon acceptance into the University from their assigned nursing adviser.

## Registered Nurse Student

To be admitted to the University Registered Nurse Program, applicants are required to do the following:

1. Hold a current license to practice nursing in California.
2. Have 56 transferable units (it is recommended that General Education requirements be completed).
3. Obtain malpractice insurance.
4. Have completed two social science courses (Psychology and Sociology) and six units of natural science courses with a grade of $C$ or better in each.
5. Complete a series of tests for critical thinking and problem solving by appointment with Testing Office.
6. Attend a group counseling session for R.N. students and complete a student profile.
7. Submit transcripts of any previous college work to the Nursing Department as well as to the Admissions Office.
Further information regarding admission to nursing courses is available to nursing majors upon acceptance into the University from their assigned nursing adviser. Graduates of diploma schools of nursing are urged to seek information/admission to a community college that offers the opportunity to earn credit for diploma nursing course of study.

## Course of Study

The student must have an overall G.P.A. of 2.0 at the time of application for the nursing program.

A specific combination of general education, prerequisite, nursing and elective courses totaling 128 units are required for graduation.

All courses in the nursing program must be taken in sequence. In general the number assigned to each nursing course indicates where it occurs in the sequence. Admission to the first course is by application which will be accepted upon successful attainment of the criteria listed above. The last date to file course applications for each semester will be available in the Nursing Department. Progress in the nursing major requires that students maintain a cumulative 2.0 grade point average on all units attempted and attain a minimum of a C grade in
each of the nursing courses as well as all required support courses. The student who earns less than a grade of " $C$ " must repeat that course prior to being admitted to the next course in sequence. A nursing course may be repeated one time. The nursing sequence of courses requires a minimum of six semesters for the "basic student" and four sem esters for the "R.N. student."

All courses offered by the Nursing Department are letter graded unless otherwise specified in writing by the instructor(s) during the first class meeting.

## Basic (code 3-1072)

Required Support Courses
Chemistry 200t, 300t; Biology 208t, 209t, 345; Microbiology 210t, 345, two social sciencest (Psychology 100 and Sociology 100); and an upper division statistics course.
Required Nursing Courses
Nursing 200,200L 201, 250, 250L, 252, 252L, 300, 300L, 302, 302L, 307, 350, 350L, 352, 352L, 357, 400, 400L, 402, 402L, 450, 450L, 452, 452L.

## R.N. (code 3-1072)

Prerequisites: Completion of 56 transferable units and California R.N. license. Completion of general education requirements is advised.
Required Support Courses
Chemistry 300, Biology 345, Microbiology 345, an upper division statistics course.
Required Nursing Courses
Nursing 305, 305L,, 307, 355, 355L, 357, 400, 400L, 402, 402L, 450, 450L, 452, 452 L .

## Master of Science in Nursing

The master of science degree is available to qualified students preparing for professional careers in various clinical areas

The philosophy of graduate nurse nursing is constantly changing as health needs and health delivery systems nursing cooperatively with other disciplines and community services to promote health.
The focal point in this curriculum is the nursing process with strong components of clinical medical knowledge complemented by behavioral science concepts. Courses are interdependent and have been structured to provide clinical depth in the area of student's choice.

The graduate will have the knowledge andily areas. Nursing research skill and or clinical specialist in one of several specialty areas. Nursing the curriculum.
application to nursing theory and practice is a majo official transcript of all college
Each applicant should request a copy graduate adviser of nursing in addition to course work be sent to the department graduate adviserds.

## Master of Science Degree in Nursing (code 6-1072)

## Prerequisites

A bachelor's degree in nursing from an accredited school of nursing
Current license to practice as a registered nurse in California.
Admission to graduate standing in nursing at the University.
4. An upper division or graduate course in statistics. practice in physica
. An approved course, which includes clini assessment.
6. Biology 345 or an equivalent course.
7. An upper division public health nursing course.
t Course is a prerequisite to Nursing 200.
8. An overall grade point average of 3.0 or better; an upper division nursing grade point average of 3.0 or better and a science grade point average of 3.0 or better. Students who fall below these averages on a single parameter will be evaluated on an individual basis.

Students who have graduated from schools of nursing without the principles of physical assessment may take such a course through continuing education Competence in this area is a prerequisite to Nursing 660, 680 and 680 L.

## Advancement to Candidacy

1. Satisfy the general University requirements for advancement to candidacy
2. Completion of all undergraduate deficiencies.
3. Successful completion of the CSULB Advanced Writing Test or English 300, Advanced Composition, with a grade of B or better.
4. Approval of the department graduate adviser and Director of Graduate Studies and Research, School of Applied Arts and Sciences.

## Requirements for the Master of Science

1. Completion of a minimum of 36 units in upper division and graduate courses
2. Completion of Nursing 680 (six units), 680 (six units), 660 (six units) and 696 .
3. An overall grade point average of 3.0 or better in all courses.
4. Completion of an approved thesis.

## Certificate as a Nurse Practitioner

Admission to the program is by application to the Department of Nursing.
The certificate program consists of a one-year course of study for the preparation of nurse practitioners. The clinical courses focus upon the assessment and management of common illnesses. The program includes integrated classroom and clinical experiences.
All practitioner students take the same academic courses; their clinical course requirements, however, are met in a variety of ambulatory care settings. Thus they are prepared as pediatric nurse practitioners, geriatric nurse practitioners, family nurse practitioners, adult nurse practitioners or mental health nurse practitioners. The completion certificate will designate the graduate's clinical expertise.

## Prerequisites for the Certificate Program are the same as admission to the graduate program.

## Requirements for the Certificate as a Nurse Practitioner

1. Completion of the following 18 units: Nursing 660A and B, 680A and B, 680L (two sem esters). For designated support courses see department adviser.
2. An overall grade point average of 3.0 or better in all courses.

All courses offered by the Nursing Department are letter graded unless otherwise specified in writing by the instructor(s) during the first class meeting.

## Lower Division

150. Explorations in Nursing (2) F,S Faculty

Prerequisite: Consent of instructor. Discussion of current issues in nursing with the student's identification of personal learning needs and goals. Investigation of the evolution of nursing, areas in which nursing is involved, and the impact of culture, ethnicity and society upon nursing today. Evaluation on Credit/No Credit basis.

150L. Explorations Laboratory (1) F,S Faculty
200. Basic Health Theory and Nursing Skills (4) F,S Meisenheimer 300, 300,

Prerequisites: Sophomore standing, Biology 208, 209, Chemis (six units), Microbiology 210, one psychology course and one sociology course (six units), consent of instructor. Co-requisites: Nursing 200L, 252, 252L. Development of concepts of high level wellness and self-care. Introduction to physical and social science principles which provide the basis for beginning level nursing theory and practice. Introduction to the nursing process as the framework for nursing theory. (Lecture-discussion 4 hours.)

200L. Health Skills Laboratory I (2) F,S Meisenheimer
Prerequisites: Biology 208, 209, Chemistry 200, 300, Microbiology 210, one psychology course and one sociology course (six units), consent of instructor. Co requisites: Nursing 200, 252, 252L. Guided utilization of beginning level theory and skills in a simulation and clinical laboratory utilizing the concepts of the nursing process in patient care delivery. (Laboratory 6 hours.)
201. Legal Aspects of Health Care (2) F,S Mayberry

Prerequisites: Nursing 200, 200L, 252, 252L, consent of instructor. Co-requisites: Nursing 250, 250L. Legal duties and responsibilities of nurses and other professional health care personnel in the delivery of health services. Professional lemphasized. (Lecture discussion 2 hours.)
250. Intermediate Health Theory and Nursing Skills (4) F,S Meisenheimer

Prerequisites: Nursing 200, 200L, 252, 252L, consent of instructor. Co-requisites: Nursing 201, 250L. Development of intermediate level theory of physiological and psychos wellness and accountability. Application of recognized physical and social science principles and current research findings to intermediate level nursing theory and skills essential to the actualization of the nursing process. (Lecture-discussion 4 hours.)

250L. Health Skills Laboratory II (2) F,S Faculty
Prequisites. Nursing 200, 200L, 252, 252L, consent of instructor. Co-requisites: Prerequisites: Nursing 200, 200L, $252,252 \mathrm{~L}, \mathrm{Co}$ to assist the student to synthesize Nursing 201, 250. Guided laboratory experien selected nursing process activities in simulation and indirect patient care. (Laboratory 6 hours.)
252. Human Awareness in the Health Professions (2) F,S Faculty

Prerequisite: Consent of instructor. Co-requisites: Nursing 200, 200L, 252L. introduction to understanding the individual and the psychosocial and cultural actors which influence his responses to his environment. Primary focus is on the health profession and on the health professional-client interaction.

## 252L. Human Awareness in the Health Professions

## Laboratory (1) F,S Faculty

Prerequisites: Consent of instructor. Corequisites: Nursing 200, 200L, 252. Reality-oriented projects in simulated and direct client contact provide opportunities for application of theory presented in Nursing 252.
300. Nursing Process I (2) F,S Deitch, Hanson, Wroblewski

Prerequisites: Nursing 250, 250L, 201, consent of instructor. Co-requisites: Nursing 300L, 302 302L, 307. Microbiology 345. Exploration of psychosocial concepts, cultural and environmental influencing factors relative to wellnessillness of individuals and family groups. Group interaction is directed toward development of self awareness as well as development of professional role. (Lecture-discussion 2 hours.)

300L. Nursing Process Laboratory I (6) F,S Deitch, Hanson, Wroblewski Prerequisites: Nursing 250, 250L, 201,consent of instructor. Co-requisites Nursing 300, 302, 302L, 307, Microbiology 345. Experience in using established nursing interventions to assist man to manipulate a moderate number of overt and covert variables which interfere with his adaptation on the health-illness continuum. The use of some alternative nursing interventions will be encouraged (Laboratory 18 hours.)

## 302. Clinical Studies I (2) F,S Deitch, Hanson, Wroblewsk

Prerequisites: Nursing 250, 250L, 201, consent of instructor. Co-requisites Nursing 300, 300L, 302L, 307, Microbiology 345. Group interaction concerned with synthesis of knowledge and experience comparing and contrasting trends in nursing interventions in a variety of situations and clinical settings. (Lecture discussion 2 hours.

## 302L. Clinical Studies Laboratory I (1) F,S Schwartz

Prerequisites: Nursing 250, 250L, 201, consent of instructor. Co-requisites Nursing 300, 300L, 302, 307, Microbiology 345. Study of basic techniques of history taking and physical assessment which are used by the nurse in identification of patient problems. Includes demonstration and practice of physical assessment methodology. (Laboratory 3 hours.)

## 305. Nursing Assessmentl (2) F,S Hill, Jasmin, N. Smith

Prerequisites: Admission to the University as a nursing major and consent of instructor. Co-requisites: Nursing 305L, 307, Chemistry 300, Microbiology 345. Use of concepts and theory to structure assessment and intervention with emphasis on the psychosocial modes of adaptations. Included are selected concepts of communication, psychosocial assessment, influencing factors, therapeutic relationships, nursing process and expanded role of the nurse. (Lecture-discussion 2 houti.)
305L. Nursing Assessment Laboratory I (2-5) F,S Hill, Jasmin, N. Smith
Prerequisites: Admission to the University as a nursing major and consent of instructor. Co-requisite: Nursing 305. Guided assistance to help the student identify and continue development of individual strengths and competence in nursing practice. Emphasis is on communication skills both individual and groups and psycho-social assessment. (Laboratory 6-15 hours.)

## 307. Human Life Cyclel (3) F,S Nelms

Prerequisites: Junior standing, consent of instructor. Co-requisite: Nursing 300 or 305 , or R.N. admitted as a nursing major. Study of the physiological, social, intellectual and emotional development of persons as individuals and as family members from conception through adolescence. (Lecture-discussion 3 hours.)
350. Nursing Process II (2) F,S Child, Ford, Murphy

Prerequisites: Nursing 300, 300L, 302, 302L, 307; Microbiology 345, consent of instructor. Co-requisites: Nursing 350L, 352, 352L, 357; Biology 345. Group interaction drawing on knowledge and experience from a variety of situations and clinical settings. Content is focused on the nursing process and includes the decision making process, group dynamics and leadership skills. (Lecture discussion 2 hours.)

## 350L. Nursing Process Laboratory II (6) F,S Child, Ford, Murphy

Prerequisites: Nursing 300, 300L, 302, 302L, 307; Microbiology 345, consent of instructor. Co-requisites: Nursing 350, 352, 352L, 357; Biology 345. Application of theory to clinical practice assisting individuals of various cultural and age groups to manipulate multiple variables that interfere with basic physiologic and psychosocial needs. Anticipation of nursing problems, assessment and nursing diagnosis, implementing and evaluating nursing interventions, is the framework for this laboratory. Emphasis is on student responsibility for own learning and behavior including dependent and interdependent relationships with other healthteam members. (Laboratory 18 hours.)
352. Clinical Studies II (2) F,S Child, Ford, Murphy

Prerequisites. Nursing 300, 300L, 302, 302L, 307; Microbiology 345, consent o instructor. Co-requisites: Nursing 350, 350L, 352L, 357; Biology 345. Theory base fo assessment of an individual's position on the wellness-illness continuum by objective description of behaviors and identification of overt and cover biopsychosocial variables. The emphasis will be acute pathological changes across various cultural and age groups. (Lecture-discussion 2 hours.)

352L. Clinical Studies Laboratory II (1) F,S Schwartz
Prerequisites: Nursing 300, 300L, 302, 302L, 307; Microbiology 345, consent of instructor Co-requisites: Nursing 350, 350L, 352, 357; Biology 345. Advanced study of basic techniques of history taking and physical examination which are used by the nurse in identification of patient problems: Includes demonstration and practice of physical assessment methodology. (Laboratory 3 hours.)
555. Nursing Assessment II (2) F,S Hill, Jasmin, N.Smith

Prerequisites: Nursing 305, 305L, Chemistry 300, Microbiology 345, consent of Pructor Corsisites. Nursing 355L, 357, Biology 345. Role of the nurse in acilitating adaptation toward optimum health for individuals and families. Particular emphasis on physical and psychosocial assessment, and exploration of expanded role of the nurse. (Lecture-discussion 2 hours.)

355L. Nursing Assessment Laboratory II (2-5) F,S Hill, Jasmin, Smith
Prerequisites: Nursing 305, 305L, consent of instructor. Co-requisite: Nursing 355. Guided learning experiences to develop individual strengths and competence in physical and psychosocial assessment of patients, based on an integration of psychosocial and physiological concepts. (Laboratory 6-15 hours.)
357. Human Life Cycle II (3) F,S Pentecost

Prerequis Nursing 350 or 355 or R.N admitted as a nursing major. Study and application to nursing of the physiological, social, intellectual and emotional development of persons as individuals and as family members from young adulthood through old age. (Lecture-discussion 3 hours.)
400. Nursing Process III (2) F,S Lackey, Watts, White 345, (Nursing 355, 355L

Prerequisites: Nursing 350, 350L, 352, 352L, 357, Biology 34, (N. of instructor. Co or R.N.'s in place of Nursing 350,350L, 352 and 352 L) and requisites: Nursing 400L, 402, 402L. Study of the economs Emphasis is upon less well defined problems and their causes, more original and Emphasis is upon less well defined more in-depth study of the involvement of families and problems and care. (Lecture-discussion 2 hours.
400L. Nursing Process Laboratory III (1) F, S Lackey, Watts, White
Prerequisites: Nursing 350, 350L, 352, 352L, 357; Biology 345, (Nursing 355, 355L for R N 's in plat of Nursing 350, 350L, 352, 352L, 402L) and consent of instructor Co-requit. Nursing 400, 402, 402L. Experience in assisting individuals, families and communities to make positive adaptations to complex health problems involving multiple variables and posing many possible nursing interventions Emphasis on planning and implementing appropriate nursing interventions, seath care systems, and creating new approath (Laboratory 3 hours.)

## 02. Clinical Studies III (2) F,S Lackey, Watts, White

Prerequisites: Nursing 350, 350L, 352, 352L, 357; Biology 345, (Nursing 355, 355L or R.N 's place of Nursing 350,350L, 352 and 352L) and consent of instructor. Co equisites: Nursing 400,400L,402L. Group interaction which focuses associated and/or permanent interruptions in the health-illness continumes. Emphasis on the nursing care in non-acute institutions and comm. (Lecture-discussion 2 hours.)

402L. Clinical Studies Laboratory III (4) F,S Lackey, Watts, White
Prerequisites: Nursing 350, 350L, 352, 352L, 357; Biology 345, (Nursing 355, 355 for R.N .'s in place of Nursing 350, 350L, 352 and 352L), consent of instructor. Co requisites: Nursing 400, 400L, 402. Evaluating multiple and diversified health problems (both temporary and permanent) of individuals, families and communities representing a variety of life styles with emphasis on care outside of acute care institutions. Experience will be provided to evaluate indicated and creative nursing interventions in a variety of settings. (Laboratory 12 hours.)

## 450. Nursing Process IV (2) F,S Moore

Prerequisites: Nursing 400, 400L, 402, 402L, upper division statistics, consent o instructor. Co-requisite: Nursing 450L. The relationship of the nursing process using research methodology, teaching and learning theory in selected clinical settings. (Lecture-discussion 2 hours.)

## 450L. Nursing Process Laboratory IV (1) F,S Kaufman, Roberts

Prerequisites: Nursing 400, 400L, 402, 402L, upper division statistics, consent of instructor. Co-requisite: Nursing 450. Completion of a research design in a clinical area selected by the individual student. (Laboratory 3 hours.)
452. Clinical Studies IV (2) F, S Brady, Kaufman, Roberts, Sucher

Prerequisites: Nursing 400, 400L, 402, 402L, upper division statistics, consent of instructor. Co-requisite: Nursing 452L. Exploration of didactic and experimental material specific to an area of concentration selected by the student. (Lecture discussion 2 hours.)

452L. Clinical Studies Laboratory IV (4) F,S Brady, Kaufman, Roberts, Sucher
Prerequisites: Nursing 400, 400L, 402, 402L, upper division statistics, consent of instructor. Co-requisite: Nursing 452. Experience in developing expertise by using the nursing process in the student's area of clinical concentration. (Laboratory 12 hours.)
*490. Independent Study (1-3) Ondemand Faculty
Prerequisite: Consent of any nursing faculty. Students who have made prior arrangements with a faculty adviser for appropriate learning objectives may enroll. Students will carry out the research process under the supervision of a faculty member in the investigation of an appropriate interest. May be repeated up to a maximum of six units.

## *499. Special Topics in Nursing (1-3) On demand Faculty

Prerequisite: Consent of instructor. Topics consistent with contemporary nursing or curricular trends will be announced each semester. Credit may be earned for course each time a new topic is offered.

## Graduate Division

## 555. Critical Issues in Nursing (2) $F$ Bullough

Current major issues in nursing and health care within their sociological and historical context

## 556. Theoretical Concepts in Nursing <br> (2) S Cobin, Timpke

Theories of learning and systematic curricular planning. Application of these theories to nursing education and clinical instruction.

556L. Theoretical Concepts of Nursing Education Laboratory (1) F,S Cobin Co-requisite: Nursing 556. Individualized practium for the application of theories learned in Nursing 556.
557. Nursing Interaction with the Elderly (3) F,S Hoffman

Prerequisites: Graduate standing, consent of instructor. Study of the psychosocial development, needs and problems of the elderly and related nursing intervention
558. Nurse Advocate and the Elderly Client (3) F,S Pentecost

Emphasis is upon the enhancement of the nurse advocate's ability to relate the major social problems and the status of current/pending legislation to the elderly clients' needs, the health care delivery system and the health care the nurse practitioner provides.
559. Nursing Administration (3) F,S Faculty

Theories, issues and application of techniques pertaining to management applicable to nurses in the clinical setting.
660A,B. Clinical Nursing Seminar (3,3) F,S Bullough, Hoffman, Moore,
Mullins, Nelms, Siegel
Prerequisites: Biology 345, Physical Assessment. Seminars related to the assessment and management of clinical nursing problems. Various sections will focus on different areas of clinical interest.

680A,B. Extended Nursing Roles $(3,6)$ F,S Faculty
Prerequisites: An acceptable course (including laboratory practice) of Physical Assessment, Biology 345. Content is primarily medical science, directed toward clinical area of interest. Each student will have a supervised practicum.

680C. Theories for Extended Nursing Practice (3) F,S Faculty
Prerequisites: An acceptable course (including laboratory practice) of physical assessment and Biology 345. Normal and pathological conditions and the management theory base applicable for the role of nurse practitioner in clinical areas of concentration.

680L. Clinical Studies in Nursing (3,3) F,S Faculty co-requisite: Nursing 680. A laboratory settings to prepare the student for advanced nursing practice.
696. Research Methods (3) F,S Bullough, Koehler

Prerequisite: Upper division course in statistics. The research process in nursing including the use of theory, study design, data collection, data analysis and interpretation of findings.
698. Thesis (1-4) F,S Faculty

Prerequisites: Advancement to candidacy and consent of department graduate adviser completion of a thesis in clinical nursing.


## Ocean Science Studies

## Center for Ocean Science Studies

Director: Dr. Murray D. Dailey.
The Southern California Ocean Studies Consortium (SCOSC) provides opportunities for undergraduate and graduate studies in the coastal environment. Special courses designed to be offered by the consortium are designated as ocean studies courses while other courses normally offered by participating presentmember schools may be used as appropriate with the approval of the Consortium Director. While permanent facilities are being constructed, the SCOSC is quartered in Room 246,925 Harbor Plaza, Long Beach.

Room 246, 925 Harbor Plaza, Long Beach. R.V. Nautilus, a 50 -foot vessel. The Nautilus is the property of the SCOSC and its use is scheduled through the office of the SCOSC Director.

The participating State University and College institutions are Dominguez Hills, Fullerton, Long Beach, Los Angeles, Northridge and Pomona.

## Upper Division

412. Ocean Science Workshop (3) SS Faculty

The physical chemical and geological properties, the biological and engineering chare emphasis on the Santa Monica and San Pedro basins. May be repeated for credit to a maxim um of six units. (Lecture 2 hours, laboratory 3 hours.)
499. Special Problems in Ocean Studies (1-3) F,S,SS Faculty

Prerequisite: Consent Research in a specific aspect of biology, water quality, geology, microbiology or ocean engineering. This course is designed to quality, geology, microw stud acces to additional material through allow students working on specific topics access utilization of the research vessel Nautilus. Individuals using the vessel would do so maximum of three units.

## Philosophy

## Department Chair: Mr. William M. Johnson.

Professors: Bonis, Kim, McGowan, Massey, Maue, Peccorini, Quest, Ringer, Strickler.
Associate Professors: Andre, Clark, Guerriere, Johnson, Spangler
Undergraduate Adviser: Mr. William M. Johnson.
Graduate Advisor: Dr. Shane Andre.
The undergraduate philosophy curriculum is designed for two purposes: (1) To make available to students the opportunity of meeting the general education and upper division courses are en education of the student. They are intended a俍 and opportunity is given for understanding of representative approaches to their solution. Appropriate emphasis is placed upon practical and current problems. (2) To make available to students the opportunity of meeting the requirements for a major in philosophy. To this end, in addition to generic courses, specialized courses are designed to acquaint the student with the history of philosophy and related areas. These courses are intended for those who are seeking a liberal arts degree and/or those who plan to teach philosophy, for pre-professional students in such areas as theology and law, and as a foundation for graduate studies in the reas of library scial science, diplomacy, theoretical physical science, and specialized historical studies.
The Department of Philosophy offers graduate studies leading to the master of arts degree. The candidate is responsible for observing the general requirement stated in this Bulletin as well as the specific departmental requirements available from the Philosophy Department.

Prospective candidates should see a faculty adviser in order to plan a tentative program.
Although there is no formal language requirement, the Philosophy Department may require the student to demonstrate a foreign language proficiency whenever - at the department's discretion - a language proficiency is appropriate to the area of study.

Graduate assistantships and departmental reader positions are sometimes available for qualified persons. The graduate assistant works closely with a member of the gation for these por the graduate faculty, bur of the Philosophy Department.

## Major in Philosophy for the Bachelor of Arts Degree (code 2-6807)

A minimum of 36 units in philosophy divided as follows:

Lower Division: A minimum of 12 units in philosophy, including Philosophy 100 or 160,170 or 270,203 and 204.
Upper Division: A minimum of 24 units in philosophy, including Philosophy 442463 , 482; and at least 6 units chosen from $413,414,421,422,423,424$; and at least 3 units chosen from $312,313,316,419$. The required 6 units remaining are to be selected from philosophy courses with the advice and consent of the student's departmental adviser.

## Minor in Philosophy (code 0-6807)

The minor in philosophy provides a structured yet flexible program for the student majoring in a different discipline, but who is interested in philosophy either as an adjunct to the degree major or as a foundation for the student's future intellectual life.

A minimum of 21 units in philosophy, of which at least 15 are upper division and include: (a) at least three units chosen from Philosophy 442, 463, 482; (b) at least three units chosen from Philosophy $413,414,421,422,423,424$; (c) at least three units selected from the list given in (b), but in addition to the units required in (b), or selected from Philosophy 312, 313, 316, 419.

## Master of Arts Degree with a Major in Philosophy (code 5-6807)

## Prerequisites

1. A bachelor's degree with a major in philosophy, or:
2. A bachelor's degree with a minimum of 24 units of upper division courses in philosophy. These courses must be comparable to those required of a major in philosophy at this University.
3. Deficiencies will be determined by the graduate adviser after consultation with the student and after study of transcript records.

## Advancement to Candidacy

1. The graduate student will be expected to demonstrate proficiency in the areas of epistemology, metaphysics, ethics and symbolic logic. A grade of $B$ in a semester course in each of these areas would constitute evidence of such proficiency.
2. The graduate student who expects to become a candidate for the master of arts degree in philosophy will be required to pass a basic qualifying examination. Normally, the student will be expected to complete this examination early in her/his graduate work.
3. The student's graduate program must be approved by the faculty adviser, the graduate adviser and the Dean of Graduate Studies.

## Requirements for the Master of Arts

1. The student's graduate program must consist of not less than 30 units of acceptable upper division and graduate courses, of which at least 24 units must be in philosophy. The remaining six units must be chosen in conference with the student's faculty adviser, and may be taken either in philosophy or in another field of study closely related to the candidate's educational objectives. The program must include a minimum of 15 units of graduate courses, with a minimum of six units from the 600 series. Philosophy 697 and 698 may not count toward fulfillment of the 600 series minimum requirement.
2. A thesis or comprehensive examination.

## Lower Division

100. Introduction to Philosophy (3) F,S Faculty Scope, basic principles and a brief analysis of the major problems of philosophy.
101. Life and Death in Eastern and Western Philosophy (3) F Lipski, Peccorini
Exploration of the evolution of ideas on life and death through the ages, as expressed in eastern and western philosophy. Same course as Religious Studies 110.
102. Introductory Ethics (3) F,S Faculty

Concepts of right and wrong, good and bad, and the application of moral principles to problems of everyday life.
170. Elementary Logic (3) F,S Faculty

Elements of clear, straight, orderly and valid thought, including deductive and inductive reasoning and the accurate use of language. This course explores practical applications of logic.
203. History of Early Philosophy (3) F,S Faculty

From Thales to the Renaissance including the systems of Socrates, Plato and Aristotle, and their influence on European philosophy through the medieval period.
204. History of Modern Philosophy (3) F, S Faculty

From the Renaissance to the 20th Century, including the development of modern scientific processes, and the philosophical systems of empiricism, rationalism, idealism, etc.
270. Symbolic Logic I (3) F,S Faculty

Introduction to the formal techniques of evaluating arguments.

## Upper Division

## Early Philosophy

*306. Philosophies of China and Japan (3) S Kim
Historical and critical study of the philosophical thought of China and Japan.
*307. Philosophies of India (3) F Kim
Historical and critical survey with emphasis on basic ideas and traditions.
*421. Plato (3) F Guerriere, Spangler, Strickler
Prerequisite: Three units of philosophy. Close study of Plato's thought, based primarily on readings from his works.
*422. Aristotle (3) S Guerriere, Spangler, Strickler
Prerequisite: Three units of philosophy. Close study of Aristotle's thought, based primarily on readings from his works.
*490A. Special Topics-Early Philosophy (3) F,S Faculty
Detailed and intensive study of figures, periods or issues in ancient or medieval philosophy. Specific issues, period or figures will be announced in the Schedule of Classes. Sample titles: Pre-Socratic Philosophy, Post-Aristotelian Philosophy, Medieval Philosophy. May be repeated for credit to a maximum of nine units with different topics. Graduate students must also enroll in one unit of Philosophy 599.

## Modern Tradition

*413. Continental Rationalism (3) F Bonis, Clark, Massey
Prerequisite: Three units of philosophy. Close study of such major figures as Descartes, Spinoza and Leibniz.
*414. British Empiricism (3) S Clark, McGowan
Prerequisite: Three units of philosophy. Close study of such major figures as Locke, Berkeley, Hume.

## 19-79140

*423. Kant (3) F Bonis, Johnson, Peccorini
Prerequisite: Three units of philosophy. Intensive study of Kant's Critique of Pure Reason.

## *424. Hegel (3) S Bonis, Guerriere, Strickler

Prerequisites: Six units of philosophy (three in logic or history of philosophy) or consent of instructor. Study of Hegel's logic and the phenomenology of spirit.
*490B. Special Topics-The Modern Tradition (3) F,S Faculty
Detailed and intensive study of a significant philosopher, or of some issue or heme of the modern (1600-1900) philosophical era. Specific titles will be announced in the Schedule of Classes. Sample titles: Hobbes, German Idealism Nietzsche. May be repeated for credit to a maximum of nine units with differen topics. Graduate students must also enroll in one unit of Philosophy 599.

## Twentieth Century Philosophy

*312. Phenomenology (3) S Bonis, Guerriere
Prerequisite: Three units of philosophy. Study of one of the major movements o contemporary philosophy. Themes treated may include knowledge, meaning emotionality, embodiment, language, sociality, freedom and religion. Philosophers treated may include Husserl, Scheler, Heidegger, MerleauPonty and Ricoeur.
313. Existentialism (3) F Bonis, Guerriere, Peccorini

Intensive study of such issues as self-as-existence, freedom and responsibility in their ethical, religious, political and aesthetic dimensions. Philosophers treated may include Kierkegaard, Nietzsche, Marcel, Jaspers, Sartre and Camus.
*316. Pragmatism (3) $S$ Quest, Ringer
Prerequisite: Three unit of philosophy or consent of instructor. Development o pragmatism as exemplified in the philosophies of Peirce, James, Dewey and Mead.

## 419. Analytic Philosophy (3) F Andre, Johnson, Spangler

Prerequisite: Three units of philosophy. Critical analysis of major movements in he development of Anglo-American philosophy in the twentieth century, such as logical atomism, logical positivism and ordinary language philosophy. Intensive study of the contributions of such philosophers as Moore, Russell, Wittgenstein Ayer, Ryle, Austin, Strawson, Quine.
*490C. Special Topics-Twentieth Century Philosophy (3) F,S Faculty
Detailed and intensive study of a significant philosopher or of a school or movement of the twentieth century. Specific title will be announced in the Schedule of Classes. Sample titles: Wittgenstein, Heidegger, Russell, Process Philosophy. May be repeated for credit to a maximum of nine units with different topics. Graduate students must also enroll in one unit of Philosophy 599.

## Metaphysical Studies

330. Philosophy of Religion (3) F,S Bonis, Guerriere, Kim, Peccorini, Quest, Strickler
Nature and function of religion and of fundamental religious concepts and ideals
331. Metaphysics (3) F,S Bonis, Guerriere, McGowan, Peccorini, Strickler

Prerequisite: Three units of philosophy or consent of instructor. Problems of ontology and cosmology including such concepts as matter and energy, time and space, evolution and causality.
*483. Philosophical Psychology (3) F Clark, Johnson
Prerequisites: Six units of philosophy or consent of instructor. Nature of the mind. Psychological concepts such as intention, consciousness, action, motive, imagination, belief and purpose.
*490D. Special Topics-Metaphysical Studies (3) F,S Faculty
Seminar study of a selected metaphysical topic. Sample topics: Time, Persona dentity, Philosophical Theology, Philosophy of Action. Specific topic will be announced in the Schedule of Classes. May be repeated for credit to a maximum of nine units with different topics. Graduate students must also enroll in one unit of Philosophy 599.

## Epistemological Studies

381. Philosophy of Science (3) F Clark, Maue

Problems, methods and fundamental concepts of the sciences, including the elationships of the sciences to each other, to mathematics and to philosophy.
482. Theory of Knowledge (3) F,S Andre, Clark, Johnson, McGowan

Prerequisite: Three units of philosophy. Investigation of such concepts as knowledge, belief, certainty. Critical study of theories concerning such issues as our knowledge of the external world, the past, other minds
*490F. Special Topics-Epistemological Studies (3) F,S Faculty
Seminar study of a selected epistemological topic. Sample topics: Philosophy of History, Philosophy of Perception. Specific topic will be announced in the Schedule of Classes. May be repeated for credit to a maximum of nine units with different topics. Graduate students must also enroll in one unit of Philosophy 599

## Studies in Logic and Semantics

*470. Symbolic Logic II (3) F, S Clark, Quest
Prerequisite: Philosophy 270 or Mathematics 330 or consent of instructor Philosophical consideration of deductive systems.
484. Philosophy of Language (3) S Guerriere, Johnson, McGowan, Spangler Prerequisites: Six units of philosophy or consent of instructor. Philosophical thought about language and meaning.
*490G. Special Topics-Logic and Semantics (3) F,S Faculty
Seminar study of a selected topic in logic or semantics. Sample topics: Probability, Necessary Truth, Paradoxes, Philosophy of Mathematics. Specific Probability, Necessary Truth, Paradoxes, Phill be announced in the Schedule of Classes. May be repeated for credit to a maximum of nine units with different topics. Graduate students must also enroll in one unit of Philosophy 599.

## Studies in Value and Evaluation

305. Philosophy in Literature (3) F Clark, Massey, Ringer

Intensive exploration of philosophical ideas in selected literature
351. Conflicts in Political Philosophy (3) F Ringer

Intensive study of the philosophies underlying Communism, Socialism, Facism and Democracy; in particular, the origins of differing views of justice, freedom individualism, and the State.
*352. Philosophy of Law (3) S Kim, Ringer
Study of the historical development of the philosophy of law and examination of the prom general theories to analysis of fundamental legal concepts and normative issues.

## 360. Ethics and Ecology (3) F,S Massey

Philosophical look at ecological problems. Survey of a number of ethica positions hill be made and current ecologica problems will Not open 360.
*361. Philosophy of Art and Beauty (3) F Massey, Quest
Discussion of central problems in aesthetics, such as the possibility of objectivity in criticism, modern and traditional definitions of a work of art, truth and meaning in the fine arts, natural beauty and its relationship to excellence in music, architecture, etc.

## 463. Ethical Theory (3) F,S Andre, McGowan, Quest, Strickler

Prerequisite: Three units of philosophy. In-depth discussion of such issues as obligation, responsibility, social justice, and personal ideals.
*490H. Special Topics-Value and Evaluation (3) F,S Faculty
Seminar study of a selected topic in value or evaluation. Sample topics: Theories of Value, Freedom and Determinism. Specific topics will be announced in the Schedule of Classes. May be repeated for credit to a maximum of nine units with different topics. Graduate students must also enroll in one unit of Philosophy 599.

## *499. Directed Studies (1-2) F,S Faculty

Prerequisite: Consent of instructor. Independent study of special topics under supervision of a faculty member. May be repeated to a maximum of six units

## Graduate Division

571. Problems in Logic (3) F Faculty

Prerequisite: One course in logic or consent of instructor. Selected issues in logic and language. Topics which might be offered include: paradoxes, the history of logic, analytic and synthetic truth, meaning, the limits of formal logic, induction and scientific method. May be repeated for a maximum of six units, subject to suitable variation in course content.
572. Problems in Theory of Value (3) F Faculty

Examinations of selected problems in which evaluation provides a central topic of concern, such as those issues commonly discussed in aesthetics, politica philosophy or the philosophy of law. May be repeated for a maximum of six units, subject to suitable variation in course content.
599. Graduate Tutorial (1-3) F,S Faculty

Corequisite: Enrollment in a Special Topics course (Philosophy 490A, B, C, D, F G. H); one unit per Special Topics course. Supervised independent study. Seniors with a grade point average of $B$ or better may enroll with consent of Department May be repeated for credit to a maximum of six units.
620. Seminar in History of Philosophy (3) F,S Faculty

Prerequisite: Consent of instructor. Close study of selected subjects in the history of philosophy. The original language may be required. May be repeated with different subjects for a maximum of nine units
630. Seminar in Philosophy of Religion (3) F Faculty

Prerequisite: Philosophy 330 or consent of instructor. Critical examination of selected issues, figures and movements. May be repeated for a maximum of six units, subject to suitable variation of topic.
640. Seminar in Metaphysics (3) F,S Faculty

Prerequisite: Philosophy 442 or consent of instructor. Supervised research and discussion on recurrent metaphysical problems and systems on the basis of selected works. May be repeated for a maximum of six units, subject to suitable variation of course content.

## 663. Seminarin Ethics (3) F,S Faculty

Prerequisite: Philosophy 463 or consent of instructor. Systematic examination of topics (such as human rights, pleasure) and theories (such as utilitarianism, contract theory) which are central to moral reasoning. May be repeated for a maximum of six units, subject to suitable variation in course content.
680. Seminar in Epistemology (3) F,S Faculty

Prerequisite: Philosophy 482 or consent of instructor. May be repeated for a maximum of six units, subject to suitable variation in course content.
681. Seminar in the Philosophy of Science (3) F Faculty

Current issues in the philosophy of science. May be repeated for a maximum of six units, subject to suitable variation in course content.
690. Seminar in Selected Topics of Current Interest (3) F,S Faculty

Presentation, discussion and critical evaluation of advanced work (which may include original research of faculty and graduate students) in selected topics of current interest to professional philosophers. If demand for more than one subject exists, multiple sections may be given in any one semester. May be repeated for a maximum of six units, subject to suitable variation of course content.
697. Directed Research (1-3) F,S Faculty

Prerequisite: Consent of the student's adviser
698. Thesis (2-4) F,S Faculty

Prerequisite: Consent of graduate adviser. Preparation and completion of a thesis in philosophy.


## Physical Education

Department Chair: Dr. Marguerite A. Clifton.
Emeriti: Corinne J. Crogen, Marcel J. DeLotto, Dorothy L. Ericson, Earl C. Kidd, Carl E. Klafs, Jack E. Montgomery, C. Patricia Reid.

Professors: Arnheim, Bartlett, Boring, Clifton, Comer, Crowe, Deatherage, Fornia, Griffith, Lyon, McConnell, Mastropaolo, Miller, Morgan, Patterson, Pestolesi, Rose, Sandefur, Schaafsma, Schwartzkopf, Sinclair, Souter, Stock, Wuesthoff
Associate Professors: Campbell, DuPont, Edmondson, Franklin, Gonsalves, Grimmett, Lindsey, Redmon, Reed, Schultz, D. Toohey, Wurzer.
Assistant Professors: Baker, Leach, Royal, M. Toohey.
Athletic Coaches: Bailey, Chandler, Cullum, Currey, Donlan, Jones, Keele, Montgomery, Moore, Rodriguez, Rowen, Shaw, Takei, Winter, Youngs.
Credential Advisers: Ms. Barbara Franklin, Dr. Tom Morgan, Dr. L. LaVonne Stock, Dr. David Wurzer.

## Academic Advising Coordinators:

Physical Education: Mr. Ken Bartlett, Ms. Betty DuPont.
Athletic Training and Corrective Therapy: Dr. Daniel Arnheim
Adapted Physical Education: Mr. Fred Rodriguez.
Community Physical Fitness: Mr. Ed Souter
Physical Education Minor-Concentrations:Mr. Charles R. Sandefur, Ms. Dixie Grimmett.
Subsumed Subjects-Dance, Health Science: Mr. Charles R. Sandefur.
Graduate Adviser: Dr. William Sinclair.
The Department of Physical Education offers programs designed (1) to meet the professional needs of prospective physical education teachers, and (2) to provide a desirable program of elective activities in general education. Courses are offered desirable program of elective activities in getisfy the following requirements: (1) the bachelor of arts degree with a major in physical education; (2) physical education major leading to a teaching credential; (3) a minor in concentrations in physical education; (While the major is designed primarily for the student who wishes to teach in the public schools, programs for those not wishing to teach are available through advisement); (4) the master of arts degree in physical education.

The department also assumes the responsibility for meeting the needs and interests of the college student through offering a wide variety of courses in sport, dance and recreational activities, credit for which may be applied toward the fulfillment of general education requirements.

It is required that each new student enrolling in the University have on file at the Student Health Service a health history record completed by the student. A
physical examination is no longer mandatory for an entering student. Students enrolling in physical education assume the responsibility for satisfactory health status appropriate for class activity.

Students pursuing a degree under Track I will be required to show skill proficiency and knowledge in all areas offered in the CSULB lower division program prior to graduation or student teaching. Other proficiency examinations may be administered by the department to determine the student's progress and eligibility for student teaching. Students pursuing a degree under Track IIA or B who desire to waive any lower division skills courses may do so. This procedure involves a written and practical examination in the course to be waived. A petition for this procedure must be filed at the Office of Admissions and Records. The examinations are given during registration week at the beginning of each semester. Further information regarding proficiency waiver or waiver by examination for all tracks is available in the department office. No upper division course may be waived by substitution or examination without department petition.

The Department of Physical Education offers graduate study leading to the master of arts degree in physical education. Through curricular flexibility the student may pursue individualized goals of either comprehensive study or specialization within the scope of the profession. All candidates are required to complete a core of courses which includes a thesis or project or oral and written comprehensives. Detailed information about the general curriculum option and the specialization option is contained in the Handbook for the Master of Arts Degree in Physical Education, available upon request from the department office.

Each applicant should request a copy of the official transcript of all college course work be sent to the graduate adviser of physical education in addition to the copies required by the Office of Admissions and Records.

Specially equipped and designed to promote research, the Physiology of Exercise Laboratory and the new Institute for Sensory Motor Development are available to students and faculty. Campus library facilities provide important current journals and extensive micro-films of other professional periodicals Arrangements can be made for inter-library loan service.

A limited number of assistantships are available for qualified graduate students Inquiries and application should be addressed to the department chair

## Major in Physical Education for the Bachelor of Arts Degree

## Required of All Students:

Lower Division: Physical Education 222, 275; Biology 202, 207
Upper Division: Physical Education 303, 322, 333, 335, 401, 437.
In addition to the above-required courses, students must complete Track I, Track IIA or Track IIB.

## Track I (code 2-1201)

Lower Division: Physical Education 212, 224, 225, 241, 242, 243, 244, and 246.
Upper Division: Physical Education 370, 380, 410, 420, 433; one selected from Physical Education 441, 443, 444; one selected from Physical Education 484 $485,486,487$.

## Track IIA Elementary Program (code 2-1201)

Lower Division: 12 units in activity-related course work including aquatics (two units): Physical Education 241 or 248; Dance (four units), Physical Education 261 and two units from Physical Education 181, 185, 186; Fitness and Combatives (two units) from Physical Education 140, 144, 150, 220; Individual and Dual Activities (two units), Physical Education 213A and 215A; Team Activities (two units), one unit from Physical Education 252, 253, 254, and one unit from Physical Education 255, 256, 257.
Upper Division: Physical Education 321A, 370, 373, 378, 403, 422, 474, 475, and two units from the following: Physical Education 310, 311, 312, 352, 354, 356, 360, $413,414,415,416,442,453,455,457,460,461$.

Track IIB Secondary Program (code 2-1201)
Lower Division: 16 units in activity-related course work including aquatics (two units), Physical Education 241 or 248; Dance (three units), Physical Education 261 and Physical Education 181 or 185 or 186; Fitness and Combatives (two nits) from Physical Education 106, 144, 149; Individual and Dual Activities (three units) from Physical Education 210, 211, 212, 213A, 214, 215A; Team Activities (three units), one unit from Physical Education 252, 253, 254; one unit from Physical Education 255, 256, 257; one additional unit from any of the courses in his area; electives (three units) from Physical Education 213B, 215B or any course listed above, or any general education course not taught as a major course.
Upper Division: Physical Education 321B, 403, 422, and eight units distributed among a minimum of three of the following categories: Aquatics, Physical Education 442; Individual and Dual Activities, Physical Education 310, 311, 312, $413,414,415$ : Team Activities, Physical Education 352, 354, 356, 453, 455, 457; Dance, Physical Education 360, 460, 461; Fitness and Combatives, Physical Education 416.
The following concentrations are offered for those students in other single解 Students are requested to contact the Physical Education office prior to starting a specific concentration.

## Minor-Concentration in Physical Education-Coaching

17-22 units which must include Physical Education 304 or both Biology 207 and Physical Education 335; Physical Education 380, 403 or 433,482 or 491 ; six to eight units from the following: Physical Education 303, 346, 420, 441, 443, 444, 466, 467, $468,469,470,484,485,487,499$.

Minor-Concentration in Physical Education-Elementary
A minimum of 20 units as follows: Physical Education 275, 303, 304, 321A, 322, $370,373,378,475$

## Minor in Physical Education-Teaching

This minor is designed for those students who are striving for an add-on to their existing single-subject credential. With the completion of this minor and a successful score on the National Teacher Examination in Physical Education the University will recommend the add-on certification in Physical Education. The other two minors (Elementary and Coaching) listed do not qualify as add-ons to the single-subject credential.

A minimum of 23 units as follows: Physical Education 222 or 322, Physical Education 304 or Biology 207 and Physical Education 335, Physical Education 410 or Education-Single Subject 450P, Physical Education 303; a minimum of 12 units from the following categories, four units of which must be upper division: Aquatics, Physical Education 241, 248, 441, 442; Fitness and Comber, Phyical Education 106, 144, 147, 148, 149, 150, 151, 243, 416, 444; Individual and Dual, Physical Education 210, 211, 212, 213A, 214, 215A, 225, 242, 246, 310, 311, 312, 414, 466, 467, Team Activities, Physical Education 224, 244, 252, 253, 254 . It is also recommended $356,413,415,453,455,457,461,468,469,484$,

## Adapted Physical Education and Special Education Program

The Physical Education Department offers the student interested in working Th the handicapped in special education a combination program of adapted physical education and selected special education courses. Students who are interested in this program should apply to the Physical Education Department Coordinator for Adapted Physical Education. Final approval course work in contingent upon a grade point average Committee.

## Requirements for the Certificate in Adapted Physical Education and Special

 Education:1. Bachelor's degree with a major in physical education.
2. Admission to the Adapted Physical Education Certificate Program
3. Required courses: Physical Education 437, 439, 440; Educational Psychology 350, 430; Psychology 370; one of the following: Educational Psychology 451 or 461. Recommended electives: Educational Psychology 464, Psychology 374, Physical Education 637 (graduate standing required).

## Athletic Training Program

The Physical Education Department offers students an opportunity to qualify for a Certificate in Athletic Training. Certification is designed to provide the participant with the specialized knowledge and skill that is required to care for athletic injuries and to administer the athletic training program in public and private schools, colleges and professional teams.

The certificate must be earned in conjunction with a secondary (single subject) teaching credential. This program is accredited by the National Athletic Trainers Association.

## Requirements for the Certificate in Athletic Training:

1. A bachelor's degree.
2. A teaching credential in a specific subject area.
3. Lower Division: Biology 202, 207, Physical Education 230, Health Science 411, Psychology 100.
4. Upper Division: Physical Education 333, 335, 346, 380, 381, 433, 437; an advanced training techniques course in Physical Education 497 or 499, an advanced course in management theory of athletic injuries in Physica Education 499 or 680 (graduate standing required); Home Economics 430.
5. Two years approved-supervised clinical training under the direction of a certified athletic trainer.
6. Certification in cardio-pulmonary resuscitation and first aid.

Interested students should apply to the Physical Education Department Coordinator for Athletic Training.

## Community Physical Fitness Program

The Certificate in Community Physical Fitness is designed to prepare the student for positions of leadership in physical activity areas other than teaching. Specific emphasis has been placed upon preparation of physical directors for the Y.M.C.A., Y.W.C.A., Boys Clubs, Girls Clubs and other nonprofit agencies, as well as commercial health clubs, gymnasiums and industrial sports and fitness programs.

## Requirements for the Certificate in Community Physical Fitness:

1. Completion of all requirements for the B.A. in physical education from an accredited institution.
2. Consultation with the advisers, Mr. Edward Souter or Dr. Warren Boring.
3. Completion of certificate course work with a 3.0 average.
4. Required courses: Physical Education 346, 438; Home Economics 430; Recreation 312, 421, 425, 484/485 (three to six units are to be taken in field work at a community agency); in addition the student is required to complete at least one course from each of the following two areas:
a. Communication and Behavioral Areas: Journalism 270, Speech Communication 434, Sociology 335 or Psychology 351, Sociology 336, 345, 419; Recreation 340.
b. Business and Management Areas: Quantitative Systems 130, Accounting 202, Management 421, Manpower Management 360, 361.

## Corrective Therapy Program in Physical Education

Certification is designed to recognize advanced knowledge and the ability to provide therapeutic physical education commonly applied in public and private rehabilitation clinics and hospitals; public and private schools, colleges and universities; special schools and camps for the handicapped; nursing and recreational programs for the handicapped.

This program was developed in cooperation with the Veterans Administration Hospital and offers interested students an opportunity to qualify for certification in corrective therapy through the American Corrective Therapy Association.

Requirements for Certification Eligibility:

1. A bachelor's degree with a major in physical education from an accredited institution.
2. A 3.0 average in major course work and a B or better in each of

Anatomy, Physiology, Kinesiology and Physiology of Exercise.
3. 650 clinical hours in therapeutic physical education approved by the Physical Education Department.
4. Course requirements: 24-27 units which must include Physical Education 437, 440, six units of 499 course work in pathology and neuroanatomy, a maximum of nine units in Physical Education 439 and Psychology 345 or equivalent, 370.
Interested students should apply to the Physical Education Department Coordinator for Corrective Therapy.

## Psychomotor Therapy Program

This is a certificate offered by the Physical Education Department for students who are majoring in physical education, recreation, communicative disorders, and educational psychology, or have an emphasis in special education. The program is designed to provide participants an opportunity to receive specialized training in sensori-motor activities. Receipt of this certificate indicates a proficiency in the organization and conduct of programs designed to assist children having special movement problems. Admittance to the program is determined by a faculty committee.
Requirements for the Certificate in Psychomotor Therapy

1. Verification that the student has or is specializing in either physical education, recreation, communicative disorders, educational psychology, or special education.
2. Approval to take the certificate program by the Physical Education Department.
3. Required of all certificate students: Physical Education 275, 370 or $475 ; 474$ or 538 (graduate standing required); Psychology 361, Educational Psychology 461. All non-therapeutic recreation majors also must take Physical Education 437 and 439, therapeutic recreation majors only must take Recreation 491, and 484 or 485 , and all non-physical education majors must take Physical Education 304

## Certificate Program in Coaching

Along with the rapid development of women's athletic programs, coupled with the existing number of men's athletic programs, comes a need for more qualified coaches. The following certificate program is available to help supply the demand for highly trained coaches.

The program has been designed and is offered so that both regularly enrolled students as well as teachers already in the field may obtain a coaching certificate. Courses are offered concurrently through extended education and the regular curriculum.
The certificate program is designed to provide students with a course of study that will prepare them with the necessary skills and experience to coach in a
specialized sport(s) in public and private schools, colleges and recreation programs. Students who are interested in this program should apply to the Physical Education Department.

## Requirements for the Coaching Certificate

1. A bachelor's degree.
2. Consultation with a physical education adviser.
3. Required courses (13-17 units): Physical Education 304 or Biology 207 and Physical Education 335, 403 or $433,380,482$ or 491, 250, 251. Six to eight units selected from the following: Physical Education 303, 346, 420, 441, 443, 444 $466,467,468,469,470,484,485,486,487$. A total of 19-25 units are required.

## Master of Arts Degree with a Major in Physical Education (code 5-1201)

## Prerequisites

1. A bachelor's degree from an accredited institution with a major in physical education substantially equivalent to this University, or:
2. A bachelor's degree with a minimum of 24 units of upper division courses equivalent to those required of a major in physical education at this University. (Course equivalency in 1. or 2. above will be determined by the adviser of the major department and the department graduate adviser following conference with the student and review of official transcripts. All deficiencies must be removed prior to advancement to candidacy.)
3. An overall undergraduate grade point average of 2.50 or better and an upper division physical education major grade point average of 2.75 or better.

## Advancement to Candidacy

1. Refer to the general University requirements for advancement to candidacy
2. Successful completion of the qualifying examination (Graduate Record Examination). If the minimal score ( 25 th percentile) is not attained on the Verbal portion of the GRE, a satisfactory grade in an Advanced English Composition course is required to compensate for the deficiency.
3. A graduate program must have the approval of the candidate's adviser, department graduate adviser and the Director of Graduate Studies and Research, School of Applied Arts and Sciences.

## Requirements for the Master of Arts Degree

1. A minimum of 30 units with at least 24 units of 500 and/or 600 series courses in physical education, including Physical Education 590, 696, a thesis Physical Education 698, and an oral examination over the thesis.
or
2. A minimum of 36 units with at least 30 units of 500 and/or 600 series courses in physical education, including Physical Education 590, 695, 696 and an oral and written comprehensive examination.
3. With either option a maximum of six units may be elected outside the major. Specified upper division courses taken after the bachelor's degree may be counted.

## Activity Courses

100-199. Physical Education Activity (1) Men, Women F, S Faculty
Broad range of physical education activities is offered. These activities are designed to provide an opportunity for students to meet their health, physical and recreational needs and interests. Maximum of eight units may be applied toward the baccalaureate degree. Students enrolling in physical education assume the responsibility for satisfactory health status appropriate for class activity.

General education physical education activity courses may be offered at the beginning (I), intermediate (II), and advanced (III) levels. All classes are coeducational, and any student may enroll in General Education Activity classes offered by the Physical Education Department. Classes offered within areas are as follows:

## Sports and Games <br> (1)

100. Archery
101. Backpacking
102. Badminton
103. Angling-Hunting Skills
104. Bowling
105. Dry Land Skiing
106. Fencing
107. Fencing-Sabre
108. Golf
109. Handball

## Aquatics (1)

120. Rowing
121. Sailing
122. Scuba
123. Senior Lifesaving
124. Surfing
125. Swimming

Fitness Activities (1)
140. Aerobic Dance
141. Bicycling
142. Bicycle Aerobics
143. Bicycle Racing
144. Fitness and Conditioning
145. Gymnastics
146. Jogging
110. Horsemanship
11. Ocean Fishing
112. Racketball
113. Rock Climbing
114. Tennis
115. Frisbee
116. Mountaineering
117. Winter Mountaineering
118. Wilderness Survival
119. Cross Country Skiing
126. Swimming Conditioning
127. Synchronized Swimming
128. Water Polo
129. Water Skiing
130. Water Volleybal
131. Canoeing
147. Judo
148. Karate
149. Self Defense
150. Rhythmical Gymnastics
151. Weight Training and Conditioning
152. Yoga
153. Orienteering

Team Sports (1)
160. Baseball
161. Basketbal
162. Beach Volleybal
163. Bicycling-Beach Volleyball
164. Field Hockey
165. Flag Football
166. Rugby
167. Soccer

## Recreational Dance (1)

180. Creative Movement
181. Folk Dance
182. Recreational Classic Movement
183. Recreational Dance Workshop

Sport Studies (1-3)
190. Sports Appreciation
191. Why Exercise?
193. Fitness for Living

Slow Pitch
169. Softball
170. Team Handball
171. Track and Field
172. Volleyball
173. Volleyball-Badminton-Swimming
174. Lacrosse

## Sports, Athletics and Recreation Courses, Men, Women

The University sponsors a complete athletic program which is considered an important aspect of student life. The Department of Sports, Athletics and Recreation is the administrative unit responsible for the intercollegiate athletic programs, the intramural program, the supervision of club sport activities, and physical recreation for students, faculty and staff.

The department sponsors a diverse program of intercollegiate athletics for men and women. The women's intercollegiate athletic program is governed by the Association for Intercollegiate Athletics for Women and the Western Collegiate Athletic Conference, maintaining membership in both organizations. Women's varsity sports are basketball, golf, cross country, gymnastics, field hockey swimming and diving, tennis, track and field, volleyball and coed badminton, encing and archery.

The men's intercollegiate athletic program competes under the rules of the National Collegiate Athletic Association and the Pacific Coast Athletic Association; it holds memberships in both organizations. Men's varsity sports are football, basketball, baseball, track and field, cross country, water polo, swimming gymnastics, wrestling, volleyball, golf and tennis

The intramural program offers all students the opportunity to play in a wide range of sports and activities. The program receives strong university support. The modern and varied equipment of the physical education facility is utilized in the program which includes 64 different activities. The participants may select one or more of the activities offered from the regular schedule. Team activities are scheduled Saturdays, Thursday nights, and weekdays (12:00 to 1:00); competition in singles and doubles events is scheduled anytime participants can match their own free time with unoccupied facilities. League competition is available in many of the activities for men, women and coeducational participation at the advanced, intermediate and novice skill levels. An increase in coeducational activities has been a major accomplishment of the department

Students may participate in four club sport activities sponsored by the Associated Students and administered through the S.A.R. department. These sports are crew, rugby, sailing, and soccer.

A recreation program for students, faculty and staff is available through the intramural office. This program is varied to meet the physical recreation needs of students, faculty and staff as the availability of physical facilities permits

Students registering in the intercollegiate or intramural sports program should refer to the following courses:
200. Intramural Activities (1) F,S Faculty

Enrollment open to all students. Participation in competitive intramural activities. A minimum of 30 hours of participation per semester is required to receive credit. May be repeated for credit.
201. Intercollegiate Team Sports (1) F,S Faculty

Enrollment subject to approval of the coach of the sport in season. Up to eight units of activity may be applied toward the general education requirement under Category VI. Athietes enrolled in P.E. 201 for credit who fail to qualify for the squad must withdraw from the course. (a) baseball, (b) basketball, (f) football, () swimming, ( m ) track and field, ( n ) volleyball.

## 202. Intercollegiate Sports (1) F,S Faculty

Variety of team, individual and dual sports are offered. Enrollment subject to the approval of the coach of the sport in season. Up to eight units of activity may be applied toward the general education requirement under category VI. Athletes enrolled in P.E. 202 for credit who fail to qualify for the squad must withdraw from the course. (b) basketball, (c) crew, (d) cross country, (g) golf, (h) gymnastics, (i) spring football, (j) swimming, (k) tennis, $(m)$ track and field, ( $n$ ) volleyball, ( 0 ) water polo, (p) wrestling, (q) soccer, (r) field hockey, (s) sof tball
204. Coeducational Intercollegiate Sports (1) F,S Faculty

Variety (b) archery, (b) badminton, (c) fencing.
318. Theory and Practice of Intercollegiate Major Sports (3) F,S Coaching Stafi
Prerequisites: Two years of competition at the college level, approval of the coach of the major sport in season. Concentrated study in the field of interest with emphasis on skill, strategy, tactics, rules, officiating and organizational and administrative procedures. A student may not repeat this course in the same intercollegiate sport but may repeat the course in a different intercollegiate major sport. Student may not be enrolled in P.E. 201 concurrently. Those enrolled in P.E include baseball, basketball, football, track and field Nomen's major intercollegiate sports include basketball, track and field, swimming and diving and volleyball.

(2) $\mathrm{F}, \mathrm{S}$

Coaching Staff
Prerequisites: Two years of competition at the college level, approval of the oach of the minor sport in season. Concentrated study in the field of interest with emphasis on skill, strategy, tactics, rules, officiating and organization and administrative procedures. A student may not repeat this course in the same intercollegiate minor sport, but may repeat the course in a different intercolegiate sport. Student may not be enrolled in P.E. 202 concurrently. Those course. Men's 319 who fail to qualify for the squad must withdraw from the intercollegiate minor sports include cross country, crew, golf, gymnastics, soccer, swimming, tennis, volleyball, water polo and wrestling. Women's intercollegiate minor sports include golf, hockey, tennis, gymnastics, softball, cross country. Coed intercollegiate minor sports include archery, badminton and fencing.

## Physical Education Professional Courses

Physical education majors and minors will be given priority enrollment in lasses required for the major. Selected courses are available to the general student bequit to receive credit general education requirements

## Lower Division

210. Archery (1) F,S Leach

Instruction and practice in the fundamental skills basic to successfu performance in archery.
211. Badminton (1) F,S Franklin, Miller Instruction and practice in the fundamen performance in badminton.
212. Golf (1) F,S Deatherage, Reed, Wurzer Instruction and practice in the fundamental performance in golf.

213A. Gymnastics I (1) F,S Faculty skills basic to successfu performance in gymnastics.

213B. Gymnastics II (1) F,S Faculty
Fiven or equivalent. Instruction and practice to Prerequisite: Physical Education $213 A$ ormance in gymnastics.
pain increas for successful performance in gymnastics.

## 214. Tennis (1) F,S Deatherage, Toohey

Instruction and practice in the fundamental skills basic to successful performance in tennis
215A. Track and Field I (1) F, S Faculty
Instruction and practice in the skills basic to successful performance in track and field activities.
215B. Track and Field II (1) F,S Faculty
Prerequisite: Physical Education 215A or equivalent. Instruction and practice for increased skills basic to successful performance in track and field activities.
222. Introduction to Human Movement (2) F,S Bartlett, Cullum, Edmondson, Souter
An overview of physical education, professional preparation, philosophies andemployment opportunities. Characteristics of the field are viewed from a broad theoretical and practical perspective
224. Team Sports I: Softball, Baseball, Basketball and Volleyball (2) F,S Chandler, Gonsalves, Grimmett, Sandefur
Instruction and practice in the skills basic to successful performance in softball, baseball, basketball and volleyball.

## 225. Racquet Sports (2) F,S Campbell, Wuesthoff

Instruction, practice and analysis in tennis, badminton and racquetball.
230. First Aid (2) F,S Gonsalves, Reed

Theory and practice of first aid for the injured. Successful completion of course requirements leads to the American National Red Cross "Standard" and "Advanced" first aid certificate. Authorization for the "Instructor's" certificate is possible for teachers and prospective teachers. (Most school systems require all elementary and secondary school teachers either to have a valid standard first aid certificate, or to acquire one during their first year of teaching.) (Lecture, activity.)
241. Aquatics (2) F,S Cullum, Edmondson, Morgan, Royal, Schultz, Wurzer

Instruction and practice in the fundamental skills basic to successful performance in aquatics.
242. Gymnastics (2) F,S Bartlett, Take

Beginning and intermediate instruction and practice in floor exercise, horizontal bar, side horse, parallel bars, rings, tumbling, vaulting and trampoline.
243. Wrestling (2) F,S Boring, Rodriquez

Instruction and practice in takedowns, breakdowns, controls, pinholds, escapes, reversals, blocks and counters.

## 244. Team Sports II: Football, Speedball and Soccer (2) F,S Keele, Morgan,

 Rowen, Shaw, YoungsInstruction and practice in the fundamental skills basic to successful performance in football, speedball and soccer.

## 246. Individual-Dual Sports II (2) F, S Abel, Souter

Instruction, practice and evaluation in the fundamental skills basic to successful performance in cross-country, track and field and conditioning. (Laboratory including off-campus cross-country running experience.)

## 248. Advanced Swimming and Water Safety (2) F,S Cullum, Morgan, Royal, Schultz, Wurzer

Prerequisite: Physical Education 123 or current senior lifesaving certificate. Advanced swimming skills and water safety, including the opportunity to qualify for the American National Red Cross Water Safety Instructor's Certificate. Open to all students.
252. Basketball (1) F,S Grimmett, Sandefur

Instruction and practice in the fundamental skills basic to successful performance in basketball.
253. Softball (1) F,S Grimmett, Wuesthoff Instruction and practice in the fundamental skills basic to successfu performance in softball.
254. Volleyball (1) F,S Grimmett, Sandefur

Instruction and practice in the fundamental skills basic to successfu performance in volleyball.
255. Field Hockey (1) F, S Faculty

Instruction and practice in the fundamental skills basic to successful performance in field hockey.
256. Flag Football (1) F,S Faculty

Instruction and practice in the fundamental skills basic to successful performance in flag football.
257. Soccer, Speedball, Speed-a-way (1) F,S Faculty

Instruction and practice in the fundamental skills basic to successful performance in these activities.
260. Fundamental Rhythms (2) F,S DuPont, Griffith

Instruction and practice in fundamental rhythms, folk, square and social dance.

## 261. Fundamentals of Creative Movement in Physical Education (2) $\mathrm{F}, \mathrm{S}$

 GriffithInstruction and practice in the fundamental skills of creative movement for physical education majors and minors who will be teaching in the public schools Emphasis is placed on the process of learning about one's movement potential and mow to ililize movement for self-understanding and self-expression. Includes解 musical terminology and elem

## 275. Basic Movement Education (3) F,S Edmondson, Sandefur,

Schwartzkopf, M. Toohey
Analysis of the components of movement wictiles and developmental skills games, gymnastics, dance, rhythmic act education program.
280. Emergency Care in Sports Activities (2) F,S Arnheim

Emergency and preliminary management procedures required in sports injuries. Course requirements leads to an American Red Cross Standard First Aid Certificate and a certificate in Cardio-Pulmonary Resuscitation.

## Upper Division

303. Motor Learning (2) F,S Clifton, Comer, Lindsey, Stock Prerequisites: Biology 202, 207;
the acquisition of movement skills.
304. Scientific Foundations (4) F Boring, Lyon, Mastropaolo

Basic information involving human anatomy, kinesiology, exercise physiology, notor learning as related to physical education activities. Not open to physical education majors
310. Analysis of Archery (1) F,S Leach

Prerequisite: Physical Education 210. Comprehensive analysis of the principles of movement and the motor skills used in archery
311. Analysis of Badminton (1) F,S Franklin, Miller

Prerequisite: Physical Education 211. Comprehensive analysis of the principles of movement and the motor skills used in badminton.
312. Analysis of Golf (1) F,S Deatherage, Reed, Wurzer

Prerequisite: Physical Education 212. Comprehensive analysis of the principles of movement and the motor skills used in golf.

## 317. Administration and Officiating of Intramural Sports (3) F,S Vendl, Wuesthoff

Administrative techniques, objectives, problems and officiating of intramural sports at the secondary and college level. Direct experience in CSULB intramural program as event supervisor and official.

321A. Principles and Organization of Elementary School Physical Education (2) F Faculty
Prerequisite: Concurrent enrollment in Education Single Subject 300W Philosophy, principles and practices of physical education and their relationship to organizational problems in the elementary school physical education program.

321B. Principles and Organization of Secondary Physical Education
(2) $\mathrm{F}, \mathrm{S}$ M. Miller, M. Toohey

Prerequisite: Concurrent enrollment in Education Single Subject 300W Principles, aims and objectives of physical education and their relationship to organizational problems in the secondary school physical education program.
322. Historical and Cultural Foundations of Sport and Physical Education (3) F, S Comer, Miller, Rose, M. Toohey
Survey of the history of sport and physical education. Historical identification of the trends and functions of sport and physical education.
333. Applied Principles of Kinesiology (3) F,S Crowe, Lyon, Mastropaolo Prerequisite: Biology 202. Structure, function and mechanical principles relating to hum an motion, including analytical application.
335. Physiology of Exercise (3) F,S Lyon, Mastropaolo

Prerequisite: Biology 207. Physiological effects of exercise on the human body Significance of these effects for health and performance in physical activity.
346. Conditioning in Physical Education and Athletics (2) F Boring, Souter

Prerequisite: Lower division conditioning course or consent of instructor. Theory and practice of conditioning in physical fitness and athletics, including equipment, facilities, organizational procedures, individual adaptations of exercise and varied systems of training.
352. Analysis of Basketball (1) F,S Grimmett, Sandefur

Prerequisite: Physical Education 252. Comprehensive analysis of the principles of movement, the motor skills and the strategy concepts used in basketball.
354. Analysis of Volleyball (1) F,S Grimmett, Montgomery, Sandefur

Prerequisite: Physical Education 254. Comprehensive analysis of the principles of movement, the motor skills and the strategy concepts used in volleyball.
356. Analysis of Flag Football (1) F,S Miller

Prerequisite: Physical Education 256. Comprehensive analysis of the principles of movement and the motor skills used in flag football.
360. Analysis of Social-Recreational Dance (2) F,S DuPont, Griffith

Prerequisites: Physical Education 260 or two of the following: 181, 185, 186. Comprehensive analysis of the theory and practice of social, folk and square dance. ncludes skills analysis, organization, conduct and evaluation of the social recreational dance forms.
370. Elementary School Physical Education
(2) F,S Edmondson, Sandefur,

Schwartzkopf, M. Toohey
Prerequisite: Physical Education 275 or knowledge of basic game and rhythm skills. Principles, aims and objectives of physical education in the elementary schools. Observation and practice in the teaching techniques used in elementary school physical education.
373. Fundamental Motor Skills for Children (2) S Faculty

Analysis and practice in fundamental skills, gymnastics, combatives, track and field and perceptual-motor activities in the elementary school physical education program.
378. Dance for Children (2) F Griffith, M. Toohey

Prerequisite: Proficiency in basic dance steps. Exploration of creativity of dance as it relates to the elementary school child.
380. Prevention and Care of Athletic Injuries (2) F,S Arnheim, Wurzer

Prerequisite: Biology 202. Study of methods and skills required in the prevention and management of athletic injuries.
381. Field Work in Athletic Training (3) F,S Arnheim

Prerequisites: Consent of instructor, Physical Education 380. Supervised experience in athletic training. May be repeated to a maximum of 9 units of credit.
391. Practicum in Physical Education (2) F,S Faculty

Prerequisite: Physical Education 222. Supervised leadership as an aide or intern in a setting of the student's choice.
401. Measurement and Evaluation in Physical Education (2) F,S Deatherage, Franklin, Sinclair $\quad$ Principles and techniques of construction, Prerequisite: Senior standing. Principles and evaluation of measuring devices organization, administration, interpretation and evaluation of measing and and used in physical education.
403. Socio-Psychological Concepts of Movement Behavior (3) F,S Stock,

## D. Toohey

Prerequisites: Psychology 100, Sociology 100. Psychological and sociological correlates of movement behavior in physical education and athletics.
410. Organization and Conduct of Physical Education (3) F,S Morgan, Sandefur, Wuesthoff, Wurzer
222 Organization and conduct of activities Prerequisite: Physicallas including skills analysis and class deployment. taught in secondary schools, (Lecture, laboratory including off-campus public scho
413. Analysis of Gymnastics (1) F,S Faculty Prerequisite: Physical Education $213 A$ and .
(1) F,S Campbell, Deatherage, Grimmett
414. Analysis of Tennis (1) F,S Camen Prerequisite: Physical Education 214 . Compre

## 415. Analysis of Track and Field (1) F,S Faculty

Prerequisites: Physical Education 215A and B. Comprehensive analysis of the principles of movement and the motor skills used in track and field.

## 416. Analysis of Fencing <br> (1) S, 1981 and alternate years <br> Mastropaolo, Redmon

Prerequisite: Physical Education 106. Comprehensive analysis of the principles of movement and the motor skills used in fencing.
420. Sport and Society (2) F, S Montgomery, Patterson, D. Toohey

Sport is studied as it relates to society. Topics include sport as a social institution, sport as it relates to socialization, self, collective behavior, deviant behavior, social stratification, group dynamics and culture, education, industry, religion, economics, military and recreation.
422. Philosophical Issues in Physical Education (2) F,S Royal, M. Toohey

Prerequisites: Physical Education 321, 322, senior standing. Basic survey of the nature and significance of the philosophic enterprise as it serves to enhance a sensitivity for and knowledge of physical education and sport.

## 433. Behavioral Problems in Physical Education and Athletics (2) F,S Montgomery, Patterson, Sandefur, D. Toohey <br> Psychological factors related to discipline and behavior problems in physical

 education and athletics.
## 437. Adapted Physical Education (2) F,S Arnheim, Crowe, Lindsey, Lyon, Rodriguez, Souter <br> Prerequisite: Physical Education 333 or equivalent. Organization, administration and techniques utilized in the conduct of adapted physical education classes.

438. Physical Fitness and Restoration (3) $S$ Boring, Mastropaolo, Souter Prerequisite: Physical Education 335 or consent of instructor. Principles and practical application of exercise for development, maintenance and restoration of school age children and adults.

## 439. Field Work in Adapted Physical Education (3) F,S Arnheim, Crowe,

 Rodriguez, SinclairPrerequisite: Physical Education 437 or consent of instructor. Supervised clinical experience in adapted physical education at suitable public and private agencies May be repeated to a maximum of nine units of credit.

## 440. Advanced Techniques in Adapted Physical Education (3) F Arnheim,

 Crowe, Lyon, Sinclair, SouterPrerequisite: Physical Education 437. Advanced methods and techniques in the program planning, evaluation and administration of physical education programs for the exceptional individual in the schools, hospitals and community. Includes laboratory, observation and field work experiences

## 441. Theory of Teaching and Coaching Swimming and Water Polo <br> (2) F,S Cullum, Edmondson, Schultz, Urbanchek

Prerequisite: Physical Education 241 or equivalent. Theoretical and practical application of teaching and coaching techniques in swimming and water polo.
442. Analysis of Aquatics (2) F,S Cullum, Edmondson, Royal, Schultz Prerequisite: Physical Education 241. Comprehensive analysis of the principles of movement and the motor skills used in aquatics.
443. Theory of Teaching and Coaching Gymnastics (2) F,S Bartlett, Takei Prerequisite: Physical Education 242 or equivalent. Theoretical and practical application of teaching and coaching techniques in gymnastics.
444. Theory of Teaching and Coaching Wrestling (2) F,S Boring, Rodriguez

Prerequisite: Physical Education 243 or equivalent. A scientific approach to the theoretical and practical application of teaching and coaching wrestling.
453. Analysis of Softball (1) F,S Grimmett, Wuesthoff

Prerequisite: Physical Education 253. Comprehensive analysis of the principles of movement, the motor skills and the strategy concepts used in softball.

## 455. Analysis of Field Hockey (1) F,S Miller

Prerequisite: Physical Education 255. Comprehensive analysis of the principles of movement and the motor skills used in field hockey.
457. Analysis of Soccer, Speedball, Speed-a-way (1) F,S Miller

Prerequisite: Physical Education 257. Comprehensive analysis of the principles of movement and the motor skills used in soccer, speedball and speed-a-way.
460. International Folk Dance (2) F,S DuPont, Griffith

Prerequisite: Physical Education 260 or 181. Emphasis on enrichment of the knowledge of folk dances and background which shapes the origins, themes and the styling; acquisition of skills in correct performance of the dances; augmentation of attitudes and appreciations of peoples to a vital folk art.
461. Analysis of Creative Movement in Physical Education (2) F,S Griffith

Prerequisite: Physical Education 261. Comprehensive analysis of the principles of creative movement for physical education majors and minors who will be teaching in the public schools

## 466. Coaching Individual Sports (1) SS Faculty

Prerequisite: At least upper division standing. Comprehensive analysis of the principles of movement and motor skills used in individual sports, including theory and practice; development of tactics, strategies and coaching techniques. (a. Archery, b. Diving, c. Golf, d. Gymnastics, f. Swimming, g. Track and Field.)

## 467. Coaching Dual Sports (1) SS Faculty

Prerequisite: At least upper division standing. Comprehensive analysis of the principles of movement and motor skills used in dual sports, including theory and practice; development of tactics, strategies and coaching techniques. (a. Tennis, b. Badminton, c. Fencing.)

## 468. Coaching Team Sports (1) SS Faculty

Prerequisite: At least upper division standing. Comprehensive analysis of the principles of movement and motor skills used in team sports, including theory and practice; development of tactics, strategies and coaching techniques. (a. Basketball, b. Volleyball, c. Softball.)
469. Coaching Field Sports (1) SS Faculty

Prerequisite: At least upper division standing. Comprehensive analysis of the principles of movement and motor skills used in field sports, including theory and practice; development of tactics, strategies and coaching techniques. (a. Hockey, b. Soccer/Speedball/Speed-a-way, c. Touchdown.)
470. Administration of Athletics (2) $S$ Deatherage, Morgan

Organization and administration of athletic programs in secondary schools, community colleges and universities as well as recreational sports programs.
474. Foundations of Psychomotor Development (2) S Arnheim, Clifton, Comer, Lindsey
301. Investigation and study of the patterns of motor-sensory development and their role in the curriculum

## 475. Developmental Physical Education for Children (2) F,S Edmondson,

 TooheyPrerequisite: Physical Education 275. Analysis and participation in physical movement experiences with special emphasis placed upon the study of optimum physical development of children.

## 480. Outdoor Studies (3) F,S Miller, Wurzer

An exploration of the outdoor studies as a viable option in physical education programs. Includes a study of the philosophy of experiential education, sample programs, environmental and ecological awareness, group dynamics and behavior modification implications, and the practical considerations of developing and implementing outdoor programs.
482. Field Work in Athletic Coaching (3) F,S Grimmett, Morgan

Prerequisite: Consent of department. Supervised experience in athletic coaching. Assignment will be in a secondary school in their physical education department. Practical experience working with high school students in all phases of the interscholastic athletic program. Offered on Credit/No Credit basis only. May be repeated for a maximum of six units in different sports.
484. Coaching Football (3) F,S Keele, Morgan, Youngs

Prerequisite: Physical Education 244. Theories of coaching, principles and organization of interscholastic tackle football.
485. Coaching Basketball (3) F,S Carnevale, Chandler, Grimmett, Sandefur

Prerequisite: Physical Education 224. Theories of coaching, principles and organization of interscholastic basketball.
486. Coaching Cross Country, Track and Field (3) F,S Abel, Rose

Prerequisite: Physical Education 246. Theories of coaching, principles an organization of interscholastic cross country, track and field
487. Coaching Baseball (3) F,S Gonsalves, Wuesthoff

Prerequisite: Physical Education 224. Theories of coaching, principles and organization of interscholastic baseball.

## 488. Creative Management in Physical Education and Athletics <br> (3) $\mathrm{F}, \mathrm{S}$

Campbell, Morgan
Prerequisite: Senior standing. Creative management practices involving the organization and administration of the physical education, recreation, and athletic programs in the secondary schools. Observation in the secondary schools of the physical education, recreation and athletic administrative practices.

## 491. Field Experience in Coaching Women's Sports (3) F,S Grimmett, Morgan

Prerequisite: Consent of instructor. Physical Education coaching class in specific sport. Designed to provide a future coach with a supervised practice coaching experience under the guidance of an established coach of a junior high senior high or college women's varsity team. May be repeated for a maximum of six units with a second sport assignment.
*497. Independent Study (1-3) F,S Clifton
Prerequisites: Major or minor in physical education and consent of instructor Student will conduct independent library or laboratory research under the supervision of a faculty member and write a report of the investigation. May b repeated for a maximum of six units.
*499. Special Studies (1-3) S Faculty
Group investigation of topics of current interest in physical education o athletics. Topics to be announced in the Schedule of Classes. May be repeated for a maximum of six units of credit with change of topic

## Graduate Division

521. Administration of Physical Education (3) $S$ Comer, Deatherage

Prerequisite: Education Single Subject 450P or 450W or equivalent, or teaching experience (including student teaching). Administrative philosophies and practices of physical education at the school, city, county and state levels.
522. Supervision in Physical Education (3) $S$ Comer

Prerequisites: Education Single Subject 450P or 450W or equivalent or teaching experience (including student teaching). Philosophy, principles and practices of supervision in physical education at various levels: school, city, county and state.
523. Curriculum Development and Construction in Physical Education (3) F Wurzer
Prerequisites: Education Single Subject 450P or 450 W and student teaching (may be taken concurrently). Basic considerations and problems of physical education curricula in secondary schools.
533. Scientific Bases for Physical Education (3) F Boring

Prerequisites: Physical Education 333 and 335. Advanced concepts of exercise physiology.
534. Human Performance Instrumentation (3) F Mastropaolo

Prerequisites: Physical Education 333, 335. Fundamentals of instruments used in advanced studies of exercise physiology, kinesiology and biomechanics.
535. Exercise Science: Tests and Training (3) S Mastropaolo

Prerequisites: Physical Education 333,335,534. Scientific aspects of exercise tests and training over an exercise spectrum from anaerobic to aerobic metabolism.
538. Motor Dysfunction and Remedial Physical Education (3) F Arnheim

Prerequisites: Physical Education 437 or Ed. Psych. 350 or their equivalents. Recognition, analysis, assessment and remediation of movement problems of the exceptional child.
573. History of Sport and Physical Education (3) F Miller, M. Toohey

Prerequisite: Physical Education 322 or equivalent. Athletics in the ancient world to the rise of modern sports. Historical contribution of different societies on sports from ancient to the modern era and its effect upon physical education in this country.
574. Contemporary International Sport (3) F Miller, D. Toohey

Investigation of contemporary international sport in various world cultures.
577. Sport in U.S. Culture (3) S Stock, D. Toohey

Analysis of physical activities in U.S. culture. Consideration of the relationships between sports and games and the factors of status, values, environment and cultural change.
590. Statistical Analysis and Measurement in Physical Education (3) F,S Deatherage, Sinclair
Prerequisites: Secondary Education 421, Education Single Subject 450P or 450W Physical Education 401 or equivalent. Consideration of the logic and application of statistical inference, sampling theory, correlation, analysis of variance and design of statistical studies. Critical analysis of selected research publications. Required of all master's degree candidates. To be completed within first 12 units of 500-600 series courses.
630. Seminar in Motor Learning (3) F Clifton, Comer, Stock

Prerequisites: Physical Education 303,590 and 696 (may be taken concurrently) dentification and analysis of principles and concepts applicable to motor learning in physical education.

## Physical Education

633. Seminar in Sport Psychology (3) S Patterson

Prerequisites: Physical Education 433 and Psychology 100; teaching or coaching experience (including student teaching). Study of psychological theories and concepts and their relationship to human behavior in sport. Sport viewed in the context of the participant, the teacher/coach, the spectator and the entrepreneur.

## 637. Seminar in Adapted Physical Education (3) $S$ Arnheim

Prerequisite: Physical Education 437 or equivalent. Organization and conduct of Adapted Physical Education (special and corrective) in the schools and colleges.
671. Seminar in Current Trends and Issues in Sport and Physical

Education (3) F Boring, Fornia
Current trends, issues and research in physical education and sport.
674. Seminar in Philosophical Concepts of Sport and Physical Education (3) S Fornia, M. Toohey
In depth, critical analysis of philosophical movements affecting physical education with emphasis on practical application and future implications.
675. Seminar in Human Movement Theory (3) S M. Toohey

Examination of the writings of the major human movement theorists including the aesthetic nature and significance of the human movement experience.
680. Seminar in Management Theory of Athletic Injuries (3) $S$ Arnheim Prerequisite: Physical Education 380 or equivalent.

## 683. Seminar in Competitive Sports for Girls and Women Miller <br> (3) $F$ Deatherage,

History, philosophy, trends, problems, organization and conduct of competitive
sports programs for girls and women.
685. Seminar in Athletics (3) S Comer, Morgan, D. Toohey

Experience in the field. Special problems related to the administration of an athletic program including current issues and practices and supervised research in selected areas.

## 695. Seminar in Professional Literature (3) S Boring, Fornia

Prerequisites: Physical Education 590, 696. Critical analysis and synthesis by comparative review of professional literature in physical education. Required of all candidates not electing thesis option.
696. Research Methods (3) F,S Clifton, Griffith, Mastropaolo, Sinclair Prerequisites: Physical Education 590, undergraduate major in physical education or related field. Methodological approaches to contemporary problems in physical education; research design and reporting; bibliography. Required of all master's degree candidates. To be completed within the first 12 units of 500-600 series courses.
697. Directed Studies (1-3) F,S Sinclair

Prerequisites: Physical Education 590, 696, advancement to candidacy. Research in an area of specialization under the direction of a faculty member.
698. Thesis (1-4) F,S Sinclair

Prerequisites: Physical Education 590,696, advancement to candidacy. Planning, preparation and completion of an approved thesis.

## 699. Seminar in Selected Topics (3) F,S Faculty

Prerequisites: Teaching experience and graduate standing. Intensive study of salient problems of current professional importance to experienced physical educators. May be repeated (with selection of a second topic) for a maximum of six units. Topics to be announced in the Schedule of Classes.

## Physical Therapy

## Department Chair:

Professors: Bok, D.D. Williams.
Associate Professors: Morris, Neilsen.
Undergraduate Advisers: Dr. Frank J. Bok, Dr. David D. Williams (EOP and Minority).
The physical therapy curriculum is designed to enable students to become an integral part of the medical rehabilitation team as practicing physical therapists in a variety of clinical facilities. Appropriate science, professional, medical and clinical experiences are provided. Successful completion of the major and/or degree requirements leads to a bachelor of science degree.

All students earning the baccalaureate degree in physical therapy will:

1. Demonstrate ability to plan and perform patient services in areas of physical and psychosocial health.
2. Demonstrate ability to communicate verbally and nonverbally.
3. Demonstrate ability to participate in the administration of physical therapy services.
4. Demonstrate ability to grow professionally upon graduation in order to increase the contribution of physical therapy to health care
Successful completion of the program qualifies one to write the State of California examination to practice as a physical therapist. The program is approved by the American Physical Therapy Association.

## Professional (Baccalaureate) Program Requirements

Because admission to the program is limited and applications far exceed this limit, admission is on a competitive basis and is limited to undergraduate California residents. Admission to the University does not guarantee admission to the program. The following sections detail the admittance requirements.

## Application for Admittance to Professional Program

After being admitted to the University, students must file an appropriate supplemental application (obtained from the Physical Therapy Department) with the department. The application must be filed at the beginning of the semester after the student has completed all prerequisites including Physical Therapy 210 374 and show evidence that 80 semester units, (including all general education requirements), have been earned. Opportunities to enrollin and 374 vary according to demand and resources. For applications to be considered complete and valid applicants must meet the following stipulations.

1. Include all information requested. college.
2. Be physically well in order to carry out typical case loads expected of practicing therapists.
3. Be emotionally well in order to cope with the typical case loads of practicing therapists.
4. Demonstrate satisfactory potential for success in the program as disclosed by previous academic success in all college work attempted
5. Demonstrate satisfactory potential for success in the program as disclosed by previous academic success in sciences and other program related credits earned. The following sciences and their semester unit values are the CSULB science prerequisites to the professional program: (Note that grades of B or better are required and that all courses except psychology must have laboratory experiences.)

## Course

Units
Anatomy (human), Biology 202 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 3-4
Biology (general, not biological or life science), Biology 200 . . . . . . . . . 3
Chemistry (inorganic and organic), Chemistry 200.
. 4
Chemistry (organic and biochemistry), Chemistry 300 . . . . . . . . . . . . . . . . . 4
Physics (survey), Physics 104.
.4
Physiology (human), Biology 207
Psychology (general), Psychology 100. . . . . . . . . . . . . . . . . . . . . . . . . . . . 3
Psychology (abnormal), Psychology 370 . . . . . . . . . . . . . . . . . . . . . . . . . . 3
Psychology (disability), Physical Therapy 374
3
3
7. Demonstrate satisfactory success in the field by documented previous work experience in physical therapy or some other health related area.
8. Be a California resident. $\dagger$

## Requirements for Admittance to Clinical Practice:

1. Complete or have in progress all other requirements for the baccalaureate degree and/or major at the time of application for admittance to clinical practice.
2. Earn a 2.0 (C) in each professional course attempted.
3. Complete successfully a competence inventory examination

## Bachelor of Science Degree in Physical Therapy (55 units) (code 3-1225)

Lower Division: Physical Therapy 210.
Upper Division: Biology 307, Chemistry 300, Physical Therapy 300, 320, 351, 353, 371, 374, 380, 430, 431, 440, 445, 460, 472, 473, 485A, B, 490; Psychology 370.

## Lower Division

210. Orientation to Physical Therapy (2) F,S Carlstrom, Hammer, Hilmer, Morris, Nielsen, Payne
Orientation to the field of physical therapy.

## Upper Division

300. Human Anatomy for Therapists (4) F,S Williams

Prerequisite: Admittance to professional program by department. Regional human anatomy for therapists, including all gross structures and their functions, using cadavers and prosected human specimens. (Lecture 2 hours, laboratory 6 hours.)

## 320. Applied Kinesiology for Therapists (4) F,S Bok, Morris

Prerequisites: Physical Therapy 300, consent of instructor. Principles of kinesiology applied to therapeutic techniques and procedures. (Lecture 3 hours, laboratory 3 hours.)

[^11]351. Physical Therapy Procedures I (3) F,S Henson,Hoffman, Mayo

Prerequisites: Physical Therapy 300 (may be taken concurrently) and consent of instructor. Principles and techniques of patient care, including massage and hydrotherapy and traction procedures. (Lecture 2 hours, laboratory 3 hours.)

## 353. Physical Therapy Procedures II (3) F,S Bok, Morris

Prerequisites: Physical Therapy 300 and consent of instructor. Principles and techniques of electrotherapy procedures, including indications and physical and physiological bases. (Lecture 2 hours, laboratory 3 hours.)
371. Clinical Lectures I (3) F,S Bok, Williams, Faculty

Prerequisites: Physical Therapy 210 and consent of instructor. The pathology, clinical course, medical and/or surgical implications, and the roles of the physical therapist regarding infectious and idiopathic diseases, and diseases of allergy, metabolism, and the digestive, respiratory, blood, recticuloendothelial and cardiovascular systems
374. Psychology of Disability (3) F,S Rabin

Prerequisite: Psychology 100. Analysis of situations confronting physically disabled persons. Consideration of reaction to acute and chronic disability, role of the physical therapist and the psychologist in promoting positive adjustments and actors during hospitalization promoting and impeding adjustment. Same course as Psychology 374.
380. Clinical Applications (1-4) F,S Bok, Morris, Nielsen, Faculty

Prerequisites: Physical Therapy 320 and consent of instructor. Supervised experience in various clinical rehabilitation facilities during which the student acquires, through observation and participation, clinical insight and experience in the procedures and practices in the field. (Field work.)
430. Physical Therapy Procedures III (4) F,S Morris, Nielsen

Prerequisites: Physical Therapy 320 and consent of instructor. Principles and echniques of exercise design and assistive devices as applied to the prevention and correction of physical disability, including methods of evaluation. (Lecture 3 hours, laboratory 3 hours.)

## 431. Physical Therapy Procedures IV (2) F,S Morris, Nielsen

Prerequisites: Physical Therapy 430 and consent of instructor. Advanced therapeutic principles and procedures, including appropriate evaluative techniques. (Lecture 1 hour, laboratory 3 hours.)
440. Organization, Administration and Supervision (2) F,S Hammer

Prerequisites: Senior standing in physical therapy and consent of instructor. Organization administration and supervision of physical therapy departments in various clinical settings.
445. Modern Trends in Physical Therapy (3) F, S Bok, Faculty

Prerequisite: Consent of instructor. Designed to bring to the active and inactive therapist updated information on trends, procedures and practices.
460. Neuroanatomy and Neurophysiology for Therapists (3) F Williams

Prerequisites: Physical Therapy 300 and consent of instructor. Correlation of heuroanatomy with pathologies commonly treated by therapists. (Lecture 2 hours, laboratory 3 hours.)
472. Clinical Lectures II (2) F, S Morris, Faculty

Prerequisites: Physical Therapy 371 and consent of instructor. Pathology, clinical course, medical and/or surgical implications, and the role of the physical therapist in the management of diseases of the endocrine and locomotor systems with specific reference to arthritis, amputation and muscular and congenital deformities.

## 473. Clinical Lectures III (2) F,S Morris, Faculty

Prerequisites: Physical Therapy 472 and consent of instructor. Pathology, clinical course, medical and/or surgical implications and the role of the physical therapist in the management of neurological, psychiatric and skin conditions.

485A,B. Clinical Practice $(3,3) \quad$ F,S Nielsen, Faculty
Prerequisite: Consent of department. Directed practices in physical therapy procedures in clinical affiliations of various types for 1840 -hour weeks. (Field work.)

## 490. Special Studies (1-3) F, S Bok, Williams, Faculty

Prerequisite: Consent of department. Independent projects in any area of physical therapy. Hum an dissection is available as a special study. May be repeated to a maximum of six units.

## Physics

## Department Chair: Dr. Sema'an I. Salem.

Emeritus: Olaf P. Anfinson.
Professors: Appleton, Buchner, Chen, Chow, Fredrickson, George, Hutcherson, Hu Lerner, Luke, Roberts, Salem, Scalettar, Schultz, Scott, Shen, Yano.
Associate Professors: Alexandrov, Anwar, Ayers, Eliason, Munsee, Schechter, Woollett.
Undergraduate Adviser: Dr. Lowell J. Eliason.
Graduate Adviser: Dr. Sema'an I. Salem.
Graduate Committee: Anwar, Salem, Schechter, Scott, Yano.

## Major in Physics for the Bachelor of Science Degree (code 3-7668)

The major in physics for the bachelor of science degree is offered for: the student seeking the doctor's degree and the position of professional physicist in the traditional sense, the student seeking a position in an industrial laboratory and the student seeking a career in teaching physics. This major program has been designed with the conviction that a student must first of all be a physicist and mus have a program which penetrates the fundamental conceptual bases of physical phenomena, cultivates skill in the design of experiments and their practical execution and stimulates interest in the many means used to interpret the physical world.
Lower Division: English 317 (may be waived for students who achieved a standard score of 24 on the ACT English sub-test or who received an A or B grade in English 100). Physics 151, 152, 153; courses to support the major to include athem Chemistry 111A-B, and a choice of one course among the following: Biology 200, 210, 212, 216 and Microbiology 210.
Upper Division: Mathematics 370A-B or 364A, 375 and 461; 30 units of upper division physics including Physics 310, 320, 340A-B, 450 and two laboratories chosen from Physics 330,380, 481, 482, 483, 484, 485, 486. The re, 44, 451, 453, 454, 457 chosen from Physics $311,330,360,380,410,420,434,435,444,451,453,454,457$ $470,481,482,484,486,490,496$.

## Major in Physics for the Bachelor of Arts Degree (code 2-7668)

The major in physics for the bachelor of arts degree is offered in the spirit of providing a curriculum devoted to "interpretation of physics and its reintegration with other parts of our culture." A primary purpose is secondary school teaching in physics and physical science.
Lower Division: English 317 (may be waived for students who achieved a standard score of 24 on the ACT English sub-test or who received an A or B grade in

English 100); Physics 151, 152, 153; Chemistry 111A-B; Mathematics 122, 123 224; and one course from the following: Biology 200, 210, 212, 216 and Microbiology 210.
Upper Division: A minimum of 24 units of courses selected in consultation with a major adviser. Work must be completed in each of the following fields: physics chemistry and geology. At least 18 units of this work must be in physics. Candidates for a teaching credential must complete at least six units selected from Geology 103, 460, 461, 463.

## Minor in Physics (code 0-7668)

A minimum of 20 units which must include
Lower Division: Physics 151, 152, 153
Upper Division: A minimum of nine units which may not include Physics 300, 360, 406 or 494.

## Master of Arts Degree with a Major in Physics (code 5-7668)

The Department of Physics-Astronomy offers graduate study leading to the master of arts degree. A student may choose to obtain the degree either through a six unit thesis (Option I) or through a comprehensive examination (Option II). Active areas of research are: experimental solid state, spectroscopy, nuclear physics and plasma physics; theoretical solid state, nuclear structure physics, many body problem, high energy physics and plasma physics. Additional information can be obtained from brochures available at the department office.
A limited number of teaching and graduate assistantships are available to students working on the master's degree. Normally the assistant, under the supervision of a faculty member, conducts the laboratory sessions of lower division courses.
Application should be made to the graduate adviser of the Department of Physics-Astronomy.

## Prerequisites

1. A bachelor's degree with a major in physics, or:
2. A bachelor's degree with at least 24 units of upper division physics (Students deficient in undergraduate preparation must take courses to remove these deficiencies with or without credit toward the degree at the discretion of the department graduate adviser.)

## Advancement to Candidacy

1. The student must fulfill the general University requirements for advancement to candidacy and must satisfactorily pass a screening examination administered by the Department Graduate Committee. Detailed information and copies of previous examinations are available from the department office. All prospective candidates are expected to take this examination during the first semester in which they are registered for courses acceptable for credit toward the master's degree
2. A student must have a $B$ average or better in nine units of physics applicable toward the master's degree of which at least three units are at the graduate level.

## Requirements for the Master of Arts

Option I

1. A minimum of 30 units of upper division and graduate courses including Physics 540A, 550A, 560A and 695.
2. Not more than 9 units in related fields may be applied to the 30 unit total.
3. A thesis (Physics 698).

Option II

1. A minimum of 30 units of upper division and graduate courses including Physics 510, 540A, 550A, 560A, 695 and any two of the following: Physics 540B, 550B, 560B
2. Not more than 6 units in related fields may be applied to the 30 unit total
3. Passing a comprehensive examination.

## Master of Science Degree with a Major in Physics (code 6-7668)

## Metals Physics

Metals physics is a specialized program which provides an intensive study of the solid state field from both the theoretical and experimental viewpoints. It is intended for students having background in physics or engineering or a closely allied field.

## Prerequisites

1. A bachelor's degree in physics or engineering or a closely allied major which includes courses comparable (as determined by the Metals Physics Advisory Committee) to the following physics courses: mechanics, Physics 310 , electronics, Physics 380; thermodynamics and kinetic theory, Physics 320; electricity and magnetism, Physics 340A; quantum physics, Physics 450, and solid state physics, Physics 470.

## Advancement to Candidacy

1. Students must fulfill the general University requirements for advance candidacy and must satisfy the Metals Physics Advisory Committee and the Graduate Committee as to the adequacy of their preparation by taking the Physics Department screening examination. This will be done in the first or second semester in which they are registered for courses acceptable for credit toward the M.S. except in individual cases to be determined by the Metals Physics Advisory Committee,
2. A student must have $a B$ average or better in nine units of physics applicable toward the master's degree, of which at least three units are at the graduate level

## Requirements for the Master of Science

Thirty units of upper division and graduate courses including:

1. Physics 501A , B, 502A , B, 503A , B, 695, 697 (three units)
2. Six units of electives from among the physics graduate courses and Physics
 consent of the Metals Physics Advisory Committee
3. A thesis (Physics 698), six units

## Concurrent and/or Summer Enrollment in Another College

Students who wish to take course work in a community or another college to meet curricular requirements while enrolled as undergraduates in the School of Natural Sciences must petition the appropriate department for prior approval to enroll in specific courses. This policy is for either concurrent enrollm ent or summer
恠 "Tredit" in this Bulletin. Courses not Enrollment" and "Transfer of Undergraduate Credi the department.
receiving prior approval will not be accepted for credit by the

## Lower Division

## 100A-B. General Physics $(4,4)$ F,S Faculty

Prerequisite: Mathematics 101 which may be taken concurrently. Physics 100A is prerequisite for 100B. Year course in the introduction to physics. First semester deals with the properties of matter, mechanics and heat. Second semester deals with electricity, sound, and light. Not open to students with credit in Physics 105 $106,105 \mathrm{E}$ or 106E. (Lecture 3 hours, laboratory 3 hours.)

## 104. Survey of General Physics (4) F,S Hutcherson, Roberts

Prerequisite: One year of high school mathematics. Designed to acquaint the student with the more important aspects of elementary physics. Emphasis on physiological physics, color and sound. Recommended for art, music and physical education majors. (Lecture 3 hours, laboratory 3 hours.)

## 105. General Physics I (4) F,S Faculty

Prerequisite: Mathematics 112 (may be taken concurrently). A non-calculus introduction to physics for students in the biological sciences stressing those principles of physics having current application to a theoretical and experimental approach to biology. Lectures and laboratories are oriented toward an understanding of fundamental physical principles with examples liberally drawn from current research literature in the biological sciences. Topics covered include mechanics, energy, properties of matter, fluids and fluid flow, heat and thermodynamics, wave motion and sound. Not open to students with credit in Physics 100A. Not open to students with credit in Physics 105E. (Lecture 3 hours laboratory 3 hours.)

## 106. General Physics II (4) F,S Faculty

Prerequisites: Mathematics 112, Physics 105. A non-calculus introduction to physics for students in the biological sciences stressing those principles of physics having current application to a theoretical and experimental approach to biology. Lectures and laboratories are oriented toward an understanding of fundamental physical principles with examples liberally drawn from current research literature in the biological sciences. Topics covered include electricity and magnetism, optics, atomic physics and nuclear physics. Not open to students with credit in Physics 100B or Physics 106E. (Lecture 3 hours, laboratory 3 hours.)

## 115. Physics for the Health Professions (4) F,S Munsee, Schechter

Prerequisite: One year of high school mathematics. Introduction to physics with physiological applications. Emphasis on those areas of physics which are most directly applicable to life processes. (Lecture 3 hours, laboratory 3 hours.)

## 151. Mechanics and Heat (4) F,S Faculty

Prerequisite: Mathematics 122. Kinematics, Newton's Laws, rotational motion fluid statics, laws of thermodynamics. Not open to students with credit in Physics 110. (Lecture 3 hours, laboratory-recitation 3 hours.)

## 152. Electricity and Magnetism (4) F,S Faculty

Prerequisites: Physics 151, Mathematics 123. Mechanical waves, Coulomb's law electrostatics, electric circuits, introductory electronics, magnetic fields, induction and Maxwell's equations. Not open to students with credit in Physics 240. (Lecture 3 hours, laboratory 3 hours.)
153. Modern Physics and Light (4) F,S Faculty

Prerequisites: Physics 152, Mathematics 224. Relativity, photoelectric effect quantum theory, Bohr model of the atom, wave mechanics, geometrical optics interference, diffraction and polarization. Not open to students with credit in Physics 230. (Lecture 3 hours, laboratory 3 hours.)

## Upper Division

310. Mechanics I (3) F Salem, Schultz

Prerequisites: Physics 151, Mathematics 370A (may be taken concurrently) Kinematics and dynamics of mass points and systems of particles. Conservation laws. Harmonic motion. Central force problem. Noninertial frames of reference Lagrangian and Hamiltonian formulation of the laws of mechanics. Not open to students with credit in Physics 310A. (Lecture 3 hours.)
311. Mechanics II (3) S, 1980 and alternate years Fredrickson, Schultz

Prerequisite: Physics 310. Dynamics of rigid body. Constraints. Inertia tensor Gyroscopic motion. Deformable media. Waves on strings and in fluids. Variational methods. Non-linear mechanics. Not open to students with credit in Physics 310B. (Lecture 3 hours.)
320. Thermodynamics and Kinetic Theory (3) S Scott, Woollett

Prerequisites: Physics 153 and Mathematics 224. Equations of state and thermodynamic functions. First and Second Laws. Introduction to kinetic theory and statistical mechanics. (Lecture 3 hours.)
330. Experimental Optics and Spectroscopy (3) S George

Prerequisite: Physics 153. Interference, diffraction, polarization and elementary spectroscopy. (Lecture 2 hours, laboratory 3 hours.)

340A-B. Electricity and Magnetism (3,3) S, F Scott, Shen
Prerequisites: Physics 310, Mathematics 370A. Laws of electricity and magnetism in vector analytic form and the formulation of Maxwell's equations. Application of Maxwell's equations to radiation problems and the interaction of electromagnetic waves and matter. Physics 340 A is not open to students with redit in Physics 340; 340B is not open to students with credit in Physics 440. (Lecture-discussion 3 hours.)
360. Numerical Methods in Physics (3) F Schultz

Prerequisite: Mathematics 370A (may be taken concurrently). Techniques of solving physics problems requiring numerical or graphical analysis. Computer , electrostatics, mechanics, relativity. Not pen shatics 323. (Lecture-discussion 3 hours.)
380. Fundamentals of Electronics (3) F Eliason, Hutcherson

Prerequisite: Physics 152. Electronic phenomena in vacuum and solids applied to circuit models of electron tubes and transistors. Fing. (Lecture 2 hours, laboratory 3 hours.)
406. Laboratory Techniques (1-2) F,S Eliason

Prerequisite: Previous enrollment in a lower division physics course comparable the one to which the student will be assigned. There will be regular formal er for units of credit.
410. Relativity (3) F, 1980 and alternate years Scalettar, Shen

Prerequisites 370 B . The Lorentz transformation, 4 ectors, relativistic kinematics, electromagnetic fields and introduction to general relativity and cosmology. Application to classical and modern physics. (Lecturediscussion 3 hours.)

20-79140
*420. Statistical Physics (3) S, 1981 and alternate years Lerner, Munsee
Prerequisite: Physics 320. Fundamental hypotheses of statistical mechanics Applications include classical and quantum gases, electric and magnetic systems, fluctuations and condensation.
*434. Astrophysics (3) F,1979 and alternate years Alexandrov, Shen Prerequisite: Senior standing in physics or consent of instructor. Review of observational data of astronomy, elementary theory of stellar structure, model stellar calculation and simple stellar systems. (Lecture 3 hours.)
*444. Plasma Physics (3) S, 1980 and alternate years Buchner, Woollett
Prerequisites: Physics 320, 340A. Characteristic behavior of high temperature plasma. Particle trajectories, two-fluid and hydromagnetic models, waves instabilities and transport processes. Applications to astrophysical, geophysical and laboratory plasmas.

## 450. Quantum Physics I (3) F Salem, Scott

Prerequisites: Physics 310, Mathematics 370A. Introduction to twentieth century physics with an emphasis on the experimental facts and the understanding of them through quantum mechanics. Topics will include black-body radiation photoelectric effect, Compton scattering, pair production, Bohr model, Schrodinger equation, one-electron atoms, angular momentum. (Lecturediscussion 3 hours.)
*451. Quantum Physics II (3) S Hu, Scalettar
Prerequisite: Physics 450. Continuation of Physics 450. Topics will include multi electron atoms, the Pauli principle, transition rates, selection rules, x-ray spectra, nuclear models, nuclear reactions and elementary particles. (Lecture-discussion 3 hours.)
*453. Nuclear Reactor Theory (3) S, 1981 and alternate years Chow, Luke Prerequisites: Physics 153, Mathematics 370A,B. Binding, decay and fusion of the nucleus. Interaction, moderation and diffusion of neutrons. Chain reactions and reactor constants. Steady-state solution of the diffusion equation for simple reactor systems. (Lecture 3 hours.)

## *454. Elementary Particle Physics (3) S, 1981 and alternate years Scalettar, Woollett

Prerequisite: Physics 450. Particle detectors and accelerators; ionization and radiation energy loss; invariance principles, conservation laws, particle properties, elementary scattering theory; weak, electromagnetic and strong interactions; particle models. (Lecture-discussion 3 hours.)
*457. Biophysics (3) F Alexandrov
Prerequisites: Upper division standing and consent of instructor. Selected topics in the physics of biological systems. Conduction of neuro-impulses. Interaction of radiation with living matter. Application of information theory to macromolecular organization and neural coding. (Lecture 3 hours.)
*470. Introduction to Solid State Physics (3) S Fredrickson, Schechter
Prerequisite: Physics 450. Study of the properties of solids from a quantum theoretical viewpoint. Topics include lattice vibrations, elastic constants, and thermal, electric and magnetic properties. (Lecture 3 hours.)

## 481. Quantum Physics Laboratory (2) F Luke

Prerequisite: Physics 450 (may be taken concurrently). Selected experiments illustrating quantum mechanical effects. Not open to students with credit in Physics 451A. (Lecture 1 hour, laboratory 3 hours.)
*482. Nuclear Physics Laboratory (2) S Chen, Chow
Prerequisite: Physics 450 . Selected experiments in nuclear physics. Not open to students with credit in Physics 451B. (Lecture 1 hour, laboratory 3hours.)
*484. Experimental Physics-Plasma (2) F,1980 and alternate years Buchner Prerequisite: Physics 153. Introduction to plasma research. Confinement schemes, measurement of temperature, density and confinement times. Vacuum and materials technology. (Lecture 1 hour, laboratory-demonstration 3 hours.)
*486. Experimental Physics-Radiation (2) $\mathrm{S}, 1981$ and alternate years Salem
Prerequisite: Consent of instructor. Interaction of gamma rays with matter. X-ray techniques. Charged particle range and energy loss. Radiation detectors. Neutron production and detection. (Lecture 1 hour, laboratory-demonstration and/or special project 3 hours.)
*490. Special Topics in Physics (3) F,S Faculty
Prerequisite: Consent of instructor. Topics of interest in physics selected for intensive development. Topics to be selected from such areas as atomic and nuclear physics, astro-physics, physics of materials, low temperature physics, coustics and theoretical physics. Both undergraduate and graduate students may take the course for a maxim um of 6 units of credit. (Lecture 3 hours.)
494. History of Science: Selected Topics (3) S Lerner

Interdisciplinary introduction to the history of science for scientists and nonscientists. Evolution of the scientist's view of the means and ends of his own activities; the two-way interactions of these views with more general contem porary deas and attitudes. May be repeated with consent of instructor up to a maximum of six units. (Same course as History 494.)
496. Special Problems in Physics (1-3) F,S Faculty

Prerequisites: Consent of instructor and senior standing. Problems in physics. Problems selected by instructor for considered and mature analysis. May be repeated for credit to a maximum of 4 units.

## Astronomy

## ower Division

100. Astronomy (3) F,S Buchner, Luke

Introductory course in astronomy. The earth moon system and the planets and observation.
101. Astronomy II (3) F,S Schultz

Prerequisite: Astronomy 100. A descriptive and these objects are well placed finest deep sky objects. Each semester 30 or for viewing. These objects will be discussed be studied in color photographs variety of celestial objects, and they will also be stud of them overnight to local taken by students on field trips. The firangly recommended. (Lecture 2 hours campgrounds, are optional but strongly recommended. (Lecture 2 hours laboratory 3 hours.)
200A,B. Introduction to Astronomy and Astrophysics $(3,3)$ F,S Luke,
Prerequitz $\mathbf{S c h}$ (may be taken concurrently). Newton's Laws and gravitation, the earth and the solar system, atomic radiation, spectra of stars, stellar population, stellar clusters, the galaxy and cosmology. (Lecturediscussion 3 hours.)

## Upper Division

304. Observational Astronomy (1) F,S Schultz

Prerequisite: Astronomy 200A (may be taken conaphy of celestial objects. instruments of visual observation and for a maximum of two units (Laboratory 3 hours.) Course may be repeated for a maximum of two units

## Physical Science

## Lower Division

## 100. Man and Energy (3) F,S Woollett

Analysis of energy resources available to man and the relation to the survival of civilization. Emphasizes a conceptual understanding of the physical basis for the existence of different kinds of energy, means of energy conversion and power production. Especially recommended for the non-science major. (Lecturediscussion 3 hours.)

## 102. Sound and Music (3) F, S Ayers, Hutcherson

Nonmathematical exploration, through lectures, discussion and laboratory demonstrations, of the natural phenomena used to produce musical sounds. Scales in the history of music, harmonics and quality of sound, sound propagation in media, musical instruments and acoustical structures, synthesizers and electronic music.
103. Laboratory in Sound and Music (1) F, S Ayers, Hutcherson

Prerequisite: Physical Science 102 (may be taken concurrently). Detailed examination of resonance phenomena in simple mechanical systems and musically interesting systems. Introduction to basic electronic instruments used for the analysis and synthesis of sound. Examination of some of the physical aspects of the hearing process. (Laboratory 3 hours.)

## 112. Introduction to the Physical Sciences (3) F,S George

Selected processes which illustrate some of the basic principles used by scientists to interpret modern ideas of matter and energy in the physical universe. Students with a full year course in high school physics or chemistry should elect some other lower division course in chemistry, geology or physics. Not open for credit to majors in any of the physical sciences. (Lecture 2 hours, laboratory 3 hours.)
113. Physical Science (3) F,S Fredrickson

Introductory course in the physical sciences. Energy, time and materials involved in the processes of everyday happenings on the earth and in the universe. (Lecture-discussion 3 hours.) Not open to students with credit in Physical Science 112 or to majors in any of the physical sciences.

## Upper Division

331. Light, Lasers and the Visual Image (3) F George

Nonmathematical course that describes light, its behavior and applications Emphasis on image formation, optical instruments, science of color, lasers holography and analysis of light for elements, planets and stars. Colorful demonstrations using lasers and holograms including kinetic art Recommended for art and other non-science majors. (Lecture-demonstration 3 hours.)

## 491. Musical Acoustics (3) S Ayers

Prerequisite: Physical Science 102 or consent of instructor. Nature and propagation of sound; acoustics of musical instruments; tuning and temperament; behavior of sound in enclosed spaces; acoustical aspects of sound recording and reproduction. Same course as Music 491. (Lecture 3 hours.

## Graduate Division

## Physics

## 500. Research Methods (1) F,S Yano

Prerequisite: Consent of instructor. Directed study of the literature abou research methods in physics. May be repeated once but only one unit may be applied to the requirements for the master of science.

## 510. Graduate Mechanics (4) F Munsee, Scott

Prerequisite: Physics 310. Variational principles, Lagrange's equations, Hamilton's equations, canonical transformations, Hamilton-Jacobi theory, relativistic mechanics and small oscillation theory.

## 540A,B. Graduate Electricity and Magnetism and Electrodynamics <br> $(4,3) \quad \mathrm{S}, \mathrm{F}$ Alexandrov, Schechter, Yano

Prerequisite: Physics 340B. Boundary-value problems, multipoles, Maxwell's equations, wave guides, magneto-hydrodynamics, covariant formalism, radiation theory, collisions, and relativistic theory of the electron.

550A,B. Quantum Mechanics (4,3) S,F Hu, Scalettar, Scott, Yano Prerequisite: Physics 451. Dirac transformation theory, unitary transformations, Schroedinger equation, harmonic oscillator, angular momentum, hydrogen atom, scattering, perturbation theory, identical particles, symmetry operations, relativistic one particle equations, applications.

## 551A,B. Quantum Electronics and Laser Physics $(3,3)$ F,S 1979-80 and alternate years Scalettar

Prerequisite: Physics 550A or consent of instructor. Interaction of radiation with matter, relaxation processes, polarization, diamagnetic and paramagnetic susceptibilities, nonlinear properties, spontaneous and simulated emission paramagnetic Maser amplifiers, Maser oscillators, the laser, laser system pumping, semi-conductor lasers, electro-optic effects, non-linear optics, Raman emission, Brillouin scattering. (Lecture 3 hours.)

## 554. Nuclear Physics (3) F Yano

Prerequisite: Physics 550A. Deutron problem, nucleon-nucleon potential, shell model, nuclear models, nuclear reactions, elementary particles, weak interactions, strong interactions.

560A,B. Methods of Mathematical Physics $(4,3)$ F,S Roberts, Scalettar, Yano
Prerequisites: Mathematics 370A,B or equivalent. Linear vector spaces, eigenvalue problem, functions of a complex variable, special functions, properties and methods of solving partial differential equations of physics, integral equations, tensor analysis and group theory

## 570. Solid State Physics (3) F Anwar

Prerequisite: Physics 451. The modern theory of solids from the standpoint o quantum mechanics. Binding in solids, energy bands, electrical thermal and magnetic properties, imperfections, and semiconductors.

## 694. Seminar in Special Topics (1) F,S Faculty

Prerequisite: Graduate standing. Study of research papers and research methods in selected topics. If demand for more than one subject exists, multiple sections may be given in any one semester. May be repeated; only one unit of credit may be applied toward requirements for the master's degree.

## 695. Colloquium (1) F,S Roberts

Prerequisite: Graduate standing. Weekly meetings for presentation and discussion of current research in physics. All graduate students are expected to attend each semester they are enrolled in the University. Credit to be obtained only for one semester.

## 697. Directed Research (1-3) F,S Faculty

Theoretical and experimental problems in physics requiring intensive analysis.
698. Thesis (1-6) F,S Faculty

Planning, preparation, and completion of an acceptable thesis in partial ulfillment of the requirements for the master's degree. Credit to be obtained only upon formal submission of thesis.

## Physical Science

512A,B. Modern Physical Science (3,3) F,S Faculty
Prerequisites: One semester course in both modern physics and organic chemistry. Selected topics in modern physical science illustrating the trends in science and the contributions and limitations of classical and modern theories.

## 696. Research Methods (3) F,S Faculty

The definition and methods of solution of problems in this field with emphasis on the descriptive method of research and the use of the library Required of all master's degree candidates.

## 698. Thesis (1-4) F,S Faculty

Planning, preparation and completion of a thesis related to this field. Limited to graduate students who have taken or are taking Physical Science 696 Optional.

## Political Science

## Department Chair: Dr. Ronald J. Schmidt

Professors: Adamany, Chawla, Cohen, Delorme, Hardy, Hayes, Horn, Kacewicz Leiter, Lien, Marsot, Soe, Stevens, Trombetas, Urquhart.
Associate Professors: Ridder, P. Schmidt, R. Schmidt, Sherain, Steiner.
Assistant Professor: Scott.
Credential Adviser: Dr. Irving Ahlquist (History Department).
Undergraduate Adviser: Dr. Ronald J. Schmidt.
Graduate Adviser: Dr. Robert L. Delorme.
The political science major is designed to provide the student with a systematic knowledge of the nature and scope of political science. A student may elect to major in political science as a preparation for such fields as: (1) college or university teaching, (2) law, (3) government career service, (4) foreign career service, and (5) politics. In addition, a political science major is preparation for general education, good citizenship and participation in political life. Students interested in the fields mentioned above should consult with an adviser to secure aid in planning their programs.

## General Education Requirement in Government

The Education Code requires each college graduate to meet (1) a federal government requirement and (2) a California state and local government requirement. Both of these requirements can be met by Political Science 100 (for lower division students) or Political Science 391 (for upper division students).

If the student has completed the federal government requirement, but not the California State and local government requirement, the student should take Political Science 326. Students who have taken American federal, state or local overn before enrolling.
Major in Political Science for the Bachelor of Arts Degree (code 2-8536)
Lower Division: Political Science 100, 201 and either 210 or 215.
Upper Division: A minimum of 33 units distributed as follows
(a) Three units from four of the following six areas

International Relations: $371,376,378,482,483,484,486$.
. 459, 461.
Political Theory: 301, 302, 303, 304, 306, 308, 407
Public Law. $314,315,318,412,414,415$.

Politics and Policy Formation: 320, 322, 326, 327, 328, 420, 422, 423, 424, 426, 428.

Public Policy and Administration: 331, 334, 336, 338, 340, 346, 348, 442, 447, 448.
(b) Nine units from a fifth area including either 409, 419, 429, 449, 469 or 489.
(c) Six units of electives in Political Science which may include 494, 497, 498 and 499.
(d) Six units of upper division course work in the School of Social and Behavioral Sciences outside the Department of Political Science, chosen in consultation with a political science adviser. Courses selected to fulfill this requirement are in addition to those selected to fulfill the requirement of any General Education category.

## Major in Political Science for the Bachelor of Arts Degree with an

## Option in Public Administration (code 2-8540)

Lower Division: Political Science 100, 201 and either 210 or 215 ; three units of economics and three units of statistics from an approved list of courses available in the department.
Upper Division: A minimum of 30 units distributed as follows:
(a) Three units from each of four of the following areas:

International Relations: 371, 376, 378, 482, 483, 484, 486.
Comparative Politics $356,357,358,359,361,362,364,366,455,459,461$. Political Theory: 301, 302, 303, 304, 306, 308, 407
Public Law: 314, 315, 318, 412, 414, 415.
Politics and Policy Formation: 320, 322,328, 420, 422, 423, 424, 426, 428.
(b) Twelve units from the area of public policy and administration: 331, 334, 336,
$338,340,346,348,442,447,448$ ( 331 and 449 are required).
(c) Six units of electives in political science which may include 494, 497 and 499.

## Minor in Political Science (code 0-8536)

A minimum of 21 units which must include:
Lower Division: Political Science 100 or 391, 201.
Upper Division: Five courses selected from Political Science 308, 314, 322, 326, 331 353 or 371.

## Minor in Public Administration in Political Science (code 0-8540)

A minimum of 21 units which must include
(a) Political Science 331.
(b) Nine additional units selected from Political Science 334, 336, 338, 340, 346, $348,442,447,448,449$.
(c) Six additional units selected from the following: Political Science 320,322, $326,327,328,420$.
(d) Three elective units from any area in political science chosen in consultation with an adviser.

## Master of Arts Degree with a Major in Political Science (5-8536)

The Department of Political Science offers graduate study leading to the master of arts degree. The student is urged to become acquainted with the general requirements of the University and the specific requirements of the department as stated in this Bulletin. Important supplementary information about the steps leading to the master's degree in political science is contained in the Handbook for Graduate Students, which is available from the department upon request.
Before or soon after entering the program, the graduate student will normally consult with the department graduate adviser. The graduate adviser will, if necessary, assist the student in the selection of a faculty academic adviser and two other committee members.
After beginning graduate study, the student is responsible for obtaining the consent of three full-time members of the department's graduate faculty to serve
on her/his graduate committee: one of these committee members, the chairman, will be drawn from the student's major field of concentration and will serve as the student's academic adviser while two others will be drawn from the second and third field of concentration respectively. The student should seek to have established her/his committee prior to the completion of the first semester or the first 12 units of work as a graduate student in political science unless an exception is granted by the Department Graduate Committee.

## Prerequisites

1. A bachelor's degree with a major in political science (deficiencies will be determined by the faculty adviser in consultation with the graduate committee of the department), or:
2. A bachelor's degree with 24 units of upper division political science comparable to those required of a major in political science at this University (deficiencies will be determined by the faculty adviser in consultation with the graduate committee of the department).
3. A 3.0 grade point average in political science courses taken as an undergraduate. A student whose grade point average is less than 3.0 may appeal to the Department Graduate Committee for a waiver of this requirement. Normally, satisfactory completion of the Graduate Record Examination (verbal and mathematical aptitude tests) will be required for those students seeking waivers of the 3.0 requirement.

## Advancement to Candidacy

1. Satisfy the general requirements of the University for advancement to candidacy.
2. In order to be recommended for advancement to candidacy, students must obtain the written approval of their master's degree program of course work by their committee adviser. The program must then be submitted to the department graduate adviser.

## Requirements for the Master of Arts

1. The student's graduate program in political science must consist of not less than 30 units of acceptable upper division and graduate courses, of which at least 24 units must be concentrated in three fields of political science and of which the remaining six units may be taken either in political science or in another field of study closely related to the candidate's educationa objectives and chosen in conference with the student's faculty adviser. The three fields of concentration in political science must be chosen from the following: international relations, comparative politics, political theory, public law, politics and policy formation, public policy and administration Normally at least one graduate seminar must be completed in each of the three fields. Fompination option (see no. 3) the 30 nust include a minimum of 18 units in the 600 series of political science, of which three units will be given for Political Science 697 (Directed Research). For those following the thesis option (see no. 3), the graduate program must include a minimum of 16 units in the 600 series in political science, of which four units we given for Political Science 698 (Thesis).
2. In addition to completing the above requirements, the graduate student must complete (or show that she/he has completed) one of the following requirements: a minimum of two semesters of an acceptable foreign requirements: a level with a grade of B or better; or a language taken at the college level acceptable foreign language; or a demonstrated reading knowledge of an acceple course work in statistios with a minimum of two semesters of acceptable conticiency in quantitative grade of B or better; or a demonstatics or quantitative methodology methodology. The foreign language or the student's graduate committee in requirement shall be determi
consultation with the student.
3. Finally, the graduate student must complete one of the following requirements: a comprehensive written examination in each of three fields of political science and an oral examination; or a thesis and an oral examination on the thesis. Following completion of the written examinations or submission of the thesis, the student's committee may waive the requirement for an oral examination.

## Lower Division

100. American Political Institutions (3) F,S Faculty

Survey of United States national, state and local governments with attention to unique aspects of California government. This course satisfies the general education requirement and the California teaching credential requirement.
201. Introduction to Political Science (3) F, S Faculty

Introduction to the principles of political science. Major terms, concepts, functions and institutions relating to the processes of politics. Not open to students with credit in Political Science 109 or 200A.
210. Issues of American Politics (3) F,S Faculty

Prerequisite: Political Science 100. Intensive study of issues associated with the concepts of democracy, limited government, federalism, separation of powers, judicial review and preservation of individual rights. Not open to students with credit in Political Science 110.
215. Issues of Comparative Politics (3) F,S Faculty

Intensive study of issues associated with selected foreign governments, modernization, revolution, political change and world ideological conflict. Not open to students with credit in Political Science 200B.
220. Culture and World Politics (3) F,S Steiner

Divergences between nations as they affect political differences between states The political significance of the encounter of individuals with those of different nationalities.

## Upper Division

## Political Theory

*301. (370.) Classical Political Theory (3) F Scott, Urquhart
Critical examination of Western political philosophy from Plato to the 16 th century. Emphasis on major political philosophers. Not open to students with credit in Political Science 370.
*302. Medieval and Renaissance Political Thought (3) S Scott
Examination of Western political ideas originating in Medieval and Renaissance socio-political development beginning with Saint Augustine. Canon and civilian legal thought, the impact of Aristotle via Arabic sources, and the mergent nation state will be examined.
*303. (380.) Modern Political Theory (3) F,S Urquhart
Critical examination of western political theory from the 16 th century to the 19 th Emphasis upon major political theorists. Not open to students with credit in Political Science 380.

[^12]*306. (385.) Contemporary Political Ideologies (3) F Scott, Soe
Development and change in the major political ideologies of the 20th Century including comm unism, corporatism, fascism, liberalism and socialism. Not open to students with credit in Political Science 385.
*308. (375.) American Political Theory (3) S Scott
Critical examination of theorists, concepts and forces which have shaped American political consciousness from the Puritans to the present. Not open to students with credit in Political Science 375.
*407. (390.) Asian Political Theory (3) S Chawla, Marso
Traditional and modern political thought with major emphasis on the developments of modern ideologies. Not open to students with credit in Politica Science 390.
*409. (490C.) Proseminar in Political Theory (3) F,S Faculty
Prerequisites: Six units in political theory courses, consent of instructor Intensive study of selected conceptual and theoretical problems in political theory. Not open to students with credit in Political Science 490 C .

## Public Law

*314. (400.) Constitutional Law: Rights (3) F,S Hayes, Lien, Sherain
Prerequisite: Political Science 100 or 391 or equivalent. Analysis of the rights and guarantees contained in the Bill of Rights and other constitutional and statutory provisions with leading cases. Not open to students with credit in Political Science prov
400
*315. (405) Constitutional Law: Power (3) F, S Hayes, Lien, Sherain
Prerequisite: Political Science 100 or 391 or equivalent. Power of the courts in interpreting and enforcing constitutional limitations in order to maintain the separation of powers, the division of powers between the national government and the states and establish governmental power to tax, spend, regulate commerce and conduct foreign relations with reference to leading cases. Not open to students with credit in Political Science 405.
*318. (411.) Modern Legal Systems (3) F Hayes
Nature of law, public and materials illustrating the development of Anglo-American legal institutions and processes Background for the professional study of law. Not open to students with credit in Political Science 411
*412. (408.) Law and Social Change (3) F,S Sherain
Issues currently being dealt with in the American legal system (e.g., busing, affirmative action, problems of the environment, sexual discrimination) Examination of both the courts' part in creating these problems and the degree to再 credit in Political Science 408.
*414. Jurisprudence (3) S Sherain
Fundamental legal philosophies, sources and classifications of law. Relationship of law to other disciplines and societal institutions
*415. Elements of Roman Jurisprudence (3) F Trombetas
Growth and development of Rom law and its principles from the historical legal and philosophical points of view. Not open to students with credit in Political Science 395.

## *419. (490D.) Proseminar in Public Law (3) F,S Faculty

Prerequisites: Six units in public law courses, consent of instructor. Intensive study of selected conceptual and theoretical problems in public law. Not open to students with credit in Political Science 490D.

## Politics and Policy Formation

*320. (445.) Conduct of Political Inquiry (3) $S$ Stevens
Problems of data collection and analysis. Impact of research methods on findings. Not open to students with credit in Political Science 495 or 445
*322. (430.) Political Parties (3) F,S Hardy, Stevens
Organization, functions and practices of political parties in the United States with special emphasis on California parties. Analysis of the part the political parties play in government and the importance of the two-party system in American government. Party responsibility in the United States in comparison with parties in other countries. Not open to students with credit in Political Science 430.
*326. (425.) State Government (3) F,S Delorme, Leiter
Political structure and its operation, state-federal relations, state-local relations particular emphasis on California. Not open to students with credit in Politica Science 425 .
*327. (427.) American Local Government: Organization and Problems (3) S
Functions and problems of counties, cities, towns and special districts Emphasis will be placed on the approach by local governments to such problems as poverty, conservation, minority tensions, housing, transportation and crime. Not open to students with credit in Political Science 427.
*328. (450.) Politics of Public Policy (3) $S$ Leiter
Analysis of major contemporary United States domestic policies including agriculture, income maintenance, economic regulations, manpower training conservation, crime control and revenue-sharing. Not open to students with credit in Political Science 450.
*420. Voting, Campaigns and Elections (3) F,S Stevens
Analysis of factors influencing citizen's voting choices; methods used by candidates seeking electoral support; changes and trends in American elections.
*422. (432.) Public Opinion (3) F,S Stevens
Formation and development of public opinion; methods of measuring public opinion in the political system. Not open to students with credit in Political Science 432.
*423. The American Presidency (3) $S$ Leiter
Roles and powers of the American presidency.
*424. (440.) The Legislative Process (3) S Hardy
Historical development of the legislature; functions of legislatures; organization and procedure of typical legislative bodies; current legislative and legislation trends; problems and principles of lawmaking. Special emphasis on the California legislature. Not open to students with credit in Political Science 440.
*426. Urban and Regional Political Systems (3) F P.Schmidt
Multijurisdictional governmental activities with emphasis on experience in the United States. Federal regional policies for rural and urban areas. Cooperative federalism.
*428. (441.) Political Behavior (3) $F$ Stevens
Introduction to the socio-psychological basis of individual political behavior. Emphasis upon political socialization, political culture and personality as explanations of political participation, the development of political values and political action. Not open to students with credit in Political Science 441.
429. (490F.) Proseminar in Politics and Policy Formation (3) F,S Faculty Prerequisites: Six units in politics and policy formation courses, consent of instructor. Intensive study of selected conceptual and theoretical problems in policy formation and politics. Not open to students with credit in Political Science 490F

## Public Policy and Administration

*331. (460.) Introduction to Public Administration (3) F R.Schmidt
Principles and practices of federal, state and local administration. Not open to students with credit in Political Science 460.
-334. (462.) Public Organization and Management (3) F Faculty
Theories of erganization and management with emphasis on their relation to administrative problems in civilian and military spheres of American government. Not open to students with credit in Political Science 462.
336. (471.) Public Personnel Administration (3) S Faculty

Survey of public personnel administration, including the growth and Sel position classifications, training programs, employee organizations and retirement systems. No 471.
338. (475.) Public Financial Administration (3) F P.Schmidt

Role of the modern budgetary process in the determination of policy, administrative integration control of government operations, intergovernmental relations and relation to private economy. Not open to students with credit in Political Science 475.
*340. (487.) Administration of Health Care (3) F Faculty
Institutional factors, professional considerations and external pressures that effect the administration of health care systems. Role of the administrator in hospitals, health maintenance organizations, clinics and other delivery systems Not open to graduate students. Not open to students with credit in Political Science 487.
*346. (465.) Administrative Justice and Law Making (3) S Faculty
Process by which private rights, and make rules and regulations of a quasi-legislative nature affecting with credit in with reference to
*348. (485.) Comparative Public Administration (3) F Faculty
Theories, models, structure and function of public administra
countries. Not open to students with credit in Political Scien
*442. (481.) Planning and the Public Interest (3) F P.Schmal, State and Federa Public planning as a decisional and allocative activity. programs and policies, with special referen planning. Not open to students with the planner in society, social
*447. (491.) Public Administration Trainee Program I (3) F Faculty
Prerequisite: Consent of instructor. Internships in one of the various federal, state or local governmental units in the immediate area. Not open to students with credit in Political Science 491.
*443. (492.) Public Administration Trainee Program II (3) $S$ Faculty
Prerequisite: Consent of instructor. Internships in one of the various federal, state or local governmental units in the immediate area. Not open to students with credit in Political Science 492.
*449. (490G.) Proseminar in Public Policy and Administration (3) F,S
Prerequisites: Six units in public policy and administration courses, consent of instructor. Intensive study of selected conceptual and theoretical problems in public policy and administration. Not open to students with credit in Political Science 490G

## Comparative Politics

*353. (330.) Government and Politics of Western Europe (3) F,S Soe, Trombetas
Governments of representative European democracies, with emphasis on governmental structure, functions and political processes and their relationship to current problems. Not open to students with credit in Political Science 330.
*35. (333.) Government and Politics of Scandinavian Countries (3) F, S Soe
Comparative study of the politics of the Scandinavian "social democracies" with particular emphasis on political structures, processes and development in Sweden. Cross-national comparisons with the political systems of other West European countries and the United States. Not open to students with credit in Political Science 333
*356. (335.) Government and Politics of the USSR (3) F, S Kacewicz
Investigation of the Soviet structure of government and theory, legitimacy and practice of the Communist Party from its revolutionary beginnings to the present Development of Soviet ideology and Marxist theory. Not open to students with credit in Political Science 335.
*357. (337.) Governments of Eastern Europe (3) S Kacewicz
Recent political, economic, constitutional, governmental and interbloc developments in Eastern Europe. Empnasis on the separate roads to Communism and Communist internationalism. Not open to students with credit in Political Science 337
*358. (351.) Contemporary Latin American Politics (3) F Delorme
Role and characteristics of major socio-political groups; major problems of development and underdevelopment. Not open to students with credit in Political Science 351.
*359. (350.) Latin American Comparative Political Systems (3) S Delorme Government and politics of selected Latin American countries, including Mexico and Cuba, with special attention on revolution vs. evolution in the quest for modernization. Not open to students with credit in Political Science 350
*361. Canada and the United States (3) F Soe
Comparative study of society and politics in the two North American countries Emphasis on national development, constitutional framework and governmental process. Significant political forces and aspects of public policy. Special attention also to the politics of the French Canadian cultural minority and to Canadian perceptions of the relationship with the United States
*362. (341.) Society and National Politics of China (3) F Marsot
Developments in government, parties, process of elections and political ideology of China. Not open to students with credit in Political Science 341.
*363. Society and National Politics of Japan (3) alternate years Marsot Modern developments in government, parties, process of elections and politicalideology of Japan.
*364. (345.) Society and National Politics of India (3) F Chawla
Developments in government, parties, process of elections and political ideology in India. Not open to students with credit in Political Science 345.
*366. (347.) Government and Politics of Southeast Asia (3) S Marsot
Emergence and development of the contemporary political systems of Southeast Asia. Not open to students with credit in Political Science 347

## *367. (355.) Governments and Politics in the Near and Middle East <br> (3) $\mathrm{F}, \mathrm{S}$

 MarsotComparative study of political systems in the Near and Middle East with special emphasis on their political forms, governmental and social structure. Not open to students with credit in Political Science 355.
*455. Comparative Revolutionary Change (3) S, 1981 and alternate years Kacewicz
Roots of revolution. Emphasis on the historical setting, ideology, socioeconomic factors, political leadership, organization and nationalism. Analysis of revolutionary conditions, courses and tactics past and present.
*459. (352.) United States-Latin American Relations (3) F Delorme
United States policies toward Latin America and the political, economic, social and cultural effects of these policies on Latin American societies. Motivating factors behind U.S. policy. Not open to students with credit in Political Science 352.
*461. (365.) The Politics of Development (3) F,S Marso
Problems of political development in the emergent nations of Asia, Africa and Latin America. Not open to students with credit in Political Science 365.
*469. (490B.) Proseminar in Comparative Politics (3) F,S Faculty
Prerequisites: Six units of comparative politics courses, consent of instructor intensive study of selected conceptual and theoretical problems in comparative politics. Not open to students with credit in Political Science 490B.

## International Relations

*371. (300.) Introduction to International Politics (3) F,S Chawla, Cohen,
Ridder, Steiner
Interaction of "great powers"; the infues quo in the international sphere. Not prestige, and the preservation of the
open to students with credit in Political Science 300.
*376. (305.) Introduction to International Law (3) F Ridder
Nature and historical development of international law. Determination of rules of international law. International community under law. Recognition of states and governments Jurisdiction. Settlement of international disputes. War aggression Not
*378. (307.) International Organization and Administration (3) S Ridder Examination of historical development, of international organization from the Concert of Europe to the United Nations. Analysis of contemporary international organization, its functions, problems and prospects in 307.
*482. (311.) American Foreign Policy (3) $S$ Cohen, Steiner
Systematic study of the foreign policy of the United States. Contemporary problems will receive special emphasis. Not open to students with credit in Political Science 311.
*483. (312.) Foreign Policies of the Major Powers (3) $F$ Cohen
Systematic examination of the national interests and foreign policies of the major world powers in terms of global political problems. Recommended: Political Science 371. Not open to students with credit in Political Science 312.
*484. (313.) Soviet Foreign Policy (3) F Kacewicz
Soviet foreign policy since 1917 -its origins, evolution, dynamics and objectives in selected areas of the world. Not open to students with credit in Political Science 313.

## *486. (321.) National Security Policies (3) F,S Steiner

Analysis of strategic posture with emphasis on military, political and economic interrelationships as they influence national security and international politics. Not open to students with credit in Political Science 321.
*489. (490A.) Proseminar in International Relations (3) F,S Faculty
Prerequisites: Six units of international relations courses, consent of instructor. Intensive study of selected conceptual and theoretical problems in international relations. Not open to students with credit in Political Science 490A.

## General

*391. (421.) American Government (3) F, S Faculty
Formation of the Constitution, federalism, civil liberties, politics, the legislature, executive, judiciary, state and local government. This course satisfies the federal, state and local government requirement. Not open to students with credit in Political Science 100.
*494. Politics of the Future (3) S Marsot
Study of present-day global problems: overpopulation, depletion of resources, environmental decay and their future political implications. Examination of alternative policies, future politics and institutional change. The technological revolutions and the totalitarian temptation.
*497. Special Topics (3) F, S Faculty
Prerequisite: Consent of instructor. Analysis of selected contemporary issues and problems. May be repeated for a maximum of six units with different topics Topics to be announced in the Schedule of Classes.
*498. Practicum in Politics (1-3) F,S Faculty
Prerequisite: Consent of instructor and department chairperson. Political or governmental experience supplemented by reading and research under the direction of a faculty member. May be repeated for a maximum of six units. No more than three units may apply toward the major in political science. Not open to students with credit in Political Science (491) 447 and/or (492) 448.
*499. Readings and Conference in Political Science (1-3) F,S Faculty
Prerequisite: Consent of instructor. Directed reading to permit independent pursuit by advanced students on topics of special interest. Hours to be arranged Graduate students who have had this course as an undergraduate may repeat it.

## Graduate Division

587. Administration of Health Care (3) F Faculty

Examination of the organization operation and administration requirements of hospitals, health maintenance organizations, public clinics and public health departments. Not open to students with credit in Political Science 487.

## 600. Seminar in International Politics (3) F,S Chawla, Cohen, Ridder

## Steiner

Intensive study of selected topics in international politics such as nationalism, imperialism, judicial settlements of international disputes, collective security. Each semester a different topic will be stressed. May be repeated for a maximum of six units.
610. Seminar in Comparative Government (3) F,S Chawla, Delorme,

## Kacewicz, Marsot, Soe, Trombetas

Intensive study of the political institutions and policies of selected foreign governments. Emphasis on political parties and contemporary governmental policy. May be repeated for a maximum of six units.
620. Seminar in Political Theory (3) F,S Scott, Urquhart

Prerequisite: An upper division course in political theory. Analytical and critical examination of the major concepts of political theory. Special attention will be directed to the writings of 20th century political theorists. May be repeated for a maximum of six units.
630. Seminar in Public Law (3) F,S Hayes, Lien, Sherain

Prerequisite: A political science course in the field of public law. Topics in constitutional development, regulatory adjudication and comparative administration of justice. May be repeated for a maximum of six units
640. Seminar in American Government (3) F,S Lien, Stevens Intensive study of topics and prob repeated for a maximum of six units.
660. Seminar in Public Administration (3) F P.Schmidt, R. Schmidt

Topics and problems in the field of public administration. Problems of governmental organization and management as they relate to specific governmental units of administration. May be repeated for a maximum of six units
697. Directed Research (1-3) F,S Faculty

Prequisite: Consent of Department Chair. Required of master's candidates who are preparing for the comprehensive examinations.

## 698. Thesis (1-4) F,S Faculty

Planning preparation and completion of thesis for the master's degree
Planning, preparation and completion of thesis for the master's degree

## Preprofessional Programs

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 preprofessional programs in law and in such health professions as dentistry, medicine, osteopathy, optometry, pharmacy, podiatry and veterinary medicine Following are recommendations and requirements of veterinary medicine. Following are universities and professional law, dental, acossions may be acquired from the Information about the other health professions
Preprofessional Health Office in the School of Natural Sciences.
The student who intends to apply for admission to a completed, the select a major field of concentration. If a degree is addition to the courses requirements for the selected major shal specifically required for admission to a professional school.

## Pre-Dental

Each predental student should confer with a member of the Preprofessional Health Committee each semester for advice as to courses which may be required only by specific dental schools.

Pre-dental soludents most frequently select a major in zoology, chemistry or Pre-dental students most frequenademic field of concentration may be selected microbiology. However, any major academic fients are incorporated in the preparation if the basic preprofessional requirements are incorporated from the Preprofessional Students are encouraged to secure further informatal committee and Admission Health Office where they may consult the pre-d
Requirements of U.S. and Canadian Dental Schools.
The basic requirements for entrance into most dental Physics (all including Zoology, General and Organic Chemistry, Gener and social sciences, and in laboratories), courses in English, psychology and physics. Certain additional mathematics as required for courses in chemistry language are recommended.
courses in

## Pre-Legal Program

ny universities either require or recommend that Professional schools in mar programs for admission. Although the professional shem complete four-year a bachelor's degree, they generally encourage basic schools do not always require a bachelor leading to that degree before beginning preparation and
specialization

Students planning to enter law school may elect any one of several majors. However, the major chosen and the courses selected outside the major field should demand a high level of performance in reading difficult material, writing clearly and understanding abstract concepts. Pre-legal 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 between the social sciences, the natural sciences and the humanities is desirable. Students should consult with designated pre-law advisers in the Finance Department or the Political Science Department concerning entrance requirements of specific law schools.

## Pre-Medical

Each pre-medical student should confer with a member of the Preprofessional Health Committee each semester for advice as to courses which may be required only by specific medical schools. Pre-medical students most frequently select a major in zoology, chemistry or microbiology. Other major academic fields may be selected if the basic preprofessional requirements are incorporated in the preparation.

Further information should be obtained from the Admissions Requirements of American Medical Colleges Including Canada, available in the Preprofessional Health Office, in the School of Natural Sciences, FO5-104.

The basic requirements for entrance into most medical schools include General Zoology, Vertebrate Embryology, General Botany, General and Organic Chemistry, Quantitative Analysis and General Physics (all including laboratories); mathematics as required for courses in chemistry and physics, social science courses and English. Certain additional courses in general education, science, and a foreign language are recommended

## Psychology

## Department Chair: Dr. Sally J. Haralson.

Professors: Bradley, Carlson, Creamer, Danson, DeHardt, Fiebert, Fiebiger, Green Hanson, Haralson, Heintz, Hommel, Hupka, Jarrett, Jung, Kapche, Linden Lindner, McClelland, Mason, Newman, Nygaard, Petersen, Raine, Resch, Rhodes, Thayer, Towner.
Associate Professors: Binder, Colman, Connor, Jorgenson, Lowenthal, Nummedal Padilla, Singer, Smith.
Assistant Professors: Dowell, Flores de Apodaca, Rebok
Credential Adviser: Dr. Paul Petersen.

## Undergraduate Adviser: Dr. Len Hommel.

## Graduate Adviser: Dr. Gilbert J. Padilla.

The psychology curriculum is designed to provide undergraduate students with a broad background in the principles of psychology. Three options are provided fo the major in psychology: the General Option for those who wish to emphasize psychology in their liberal arts education, the Applied Option for those who wish to acquire knowledge and skills in the application of psychology, and the Research Option for those preparing for graduate study in psychology. The student may change from one option to another at any time.

The General
The General student who is planning advanced study in psychology.
The Applied Option is designed to provide the student with some knowledge, thods and skills in the application of psychology in areas such as community, clinical industrial and organizational psychology. Completion of this option may facilitate prosessiol training in applied psychology or related fields.

Thate protessional training apple to provide the student with the concepts and
The Research Option is designed to providen for graduate study in all areas of skills which will serve as necessary preparation for graduale seory, content and research methods.

The Department of Psychology offers graduate study leading to the master of ts degree in psychology and the master of science degree with options in community-clinical psychology and industrial psychology. In each program a basic core, including a thesis, is required, and there is opportunity for additional work in areas of special interest. Clinical electives are available in the master of arts保 anchology. The two master of science programs a programs.

The department has wide and varied offerings and is housed in specially-
designed facilities, including laboratories in physiological, social-personality, human factors and other areas of psychology. The community clinic operates both on and off campus

Admission to all three programs is limited. Application must be made directly to the graduate adviser. For spring admission, application to the master of arts program and to the master of science, industrial psychology option must be completed by November 1 ; for fall admission, by April 25 . For fall admission to the master of science, community-clinical option, application must be completed by March 1.

A limited number of graduate assistantships are available. Students accepted into the program will receive an application. Work-study assignments are available in the department, but must be applied for through the University Financial Aids Office one or two semesters prior to obtaining the assignment.

## Major in Psychology for the Bachelor of Arts Degree (code 2-8130)

Lower Division: Psychology 100, 200 and 210, Mathematics 100, Psychology 241 o three units of biology
Upper Division: A minimum of 24 units in psychology including: two courses from Psychology 331, 332, 333, 336, 337, 341; one course from Psychology 351, 356, 361; and additional courses for one of the following three options:
General Option:15 units of electives;
Applied Option:Psychology 310 and 314, one course from Psychology 370, 375 381, and two courses from Psychology 415, 416, 418, 471, 472-473, 474, 475, 481;
Research Option:Psychology 310, Psychology 401 or 402, and two courses from Psychology 433, 437; 441 or 445,451 or $456,461$.
An additional upper division requirement for all options is a minimum of six upper division units in addition to General Education unit requirements to be
chosen with permission of an adviser from courses in the School of Social and Behavioral Sciences, or another School if more appropriate to the student's area of concentration.

## Minor in Psychology

A minimum of 20 units which must include: Psychology 100, 200, 210; nine units including at least one course from Psychology 331, 332, 333, 336,337, or 341 ; and at least one course from 351, 356 or 361.

## Master of Arts Degree with a Major in Psychology (code 5-8130)

## Prerequisites

1. A bachelor's degree with a major in psychology, or:
2. A bachelor's degree with a major other than psychology and 24 units of upper division psychology substantially equivalent to those required for the baccalaureate degree at this University, including Psychology 310 and one of the following: $433,437,441,445,451,456$ or 461 ; and 18 units of upper division psychology.
3. Six units of college level work in chemistry, physics, biology or mathematics as approved by the graduate adviser. No more than three of the six units may be in approved mathematics courses.
4. Write directly to the Psychology Department for an application for admission to the graduate program in psychology. Acceptance by the department is contingent on (a) grade point average based on last 60 units of undergraduate work available at time of application; (b) Graduate Record Examination scores on the verbal and quantitative sections and on the advanced psychology test; and (c) three letters of recommendation. All application materials, including complete transcripts, GRE scores and letters of recommendation, must be received by the department graduate adviser before April 25 for the fall semester and November 1 for the spring semester.

## Advancement to Candidacy

1. During the first semester in the M.A. program students must file a program of studies in psychology, approved by the graduate adviser, indicating the courses which will be taken to complete the M.A. degree.
2. Recommendation for advancement to candidacy by the department is prerequisite for all 600 level courses. Prior to registration in every 600 level course, the student must obtain an admission slip from the graduate adviser showing prerequisite fulfillment and that advancement to candidacy has been recommended.
3. See the general University requirements

## Requirements for the Master of Arts

The student must complete, as a graduate student, 30 units of upper division and graduate courses (exclusive of Psychology 499 and including no more than 3 units of Psychology 697), with a minimum of 24 units in psychology including the following (if not taken previously as an undergraduate student or to fulfill the 24 unit prerequisite background):

1. Psychology 310 and one of the following: $433,437,441,445,451,456$ or 461 , 411 or 412 two of the following: 331,332,333,337,341; and one of the following: 351,356 or 361 , or equivalents.
2. A minimum of 21 units in graduate psychology (not including Psychology 697 and including only three units of Psychology 678) including 696C; one course chosen from Psychology 631, 632, 634 or 637 ; one course chosen from Psychology 651, 656, or 661; Psychology 698 (thesis, six units).
3. Completion of all requirements as established by the M.A. Committee.
4. A written comprehensive examination.
5. With the graduate adviser's approval, a maxim
areas may be substituted for six of
6. An oral examination on the thesis.

Master of Science Degree with a Major in Psychology (code 6-8134)

## Community-Clinical Option

## Prerequisites

1. A bachelor's degree with a major in psychology or a major in a related field and 24 units of upper division psychology or equivalent.
. Complete transcripts, an autobiography and three letters of recommendation must be received by the department graduate adviser before March 1 for the fll semester. There are no spring semester admissions.
2. A personal interview by a selection committee.

## Advancement to Candidacy

(he M.S. Community-Clinical program students must file a program of studies in psychology, approved by the graduate adviser, indicating the courses which will be taken to complete the M.S. degree.
Recommendation for advancement to candidacy by the department is prerequisite for all 600 level courses. Prior to registration in every 600 leve course, the student must obtain an admission slip from the graduate advise showing prerequisite fulfillment and that advancement to candidacy has been recommended
3. See the general University requirements.

Requirements for the Master of Science, Community-Clinical Option

1. The student must complete, as a graduate student, a minimum of 22 units of graduate courses including $672 A, B$ and $673 A, B$ and a minimum of 30 units of graduate courses including
graduate and upper division courses (exclusive of Psychology 499 and including no more than three units of Psychology 697).
2. Six units of upper division or graduate courses may be outside of psychology to be selected in consultation with the graduate adviser.
3. A thesis or project with an oral examination (Psychology 698, thesis, six units).
4. Completion of all requirements as established by the M.S.C.C. Committee.

## Industrial Option (code 6-8132)

## Industrial Psychology Advisory Council

The Industrial Psychology Advisory Council functions as an important interface between the industrial community served by the University and the department. Its purpose is to assist as appropriate in the effective implementation of the department's master of science (industrial option) program. Membership of this council is as follows

Mr. Donald E. Bott, City of Santa Ana
Dr. Richard F. Gabriel, Douglas Aircraft Company
Dr. Gloria L. Grace, System Development Corporation
Mr. Robert D. Joyce, Innovative Management, Inc.
Mr. Terry L. Lantz, City of Garden Grove
Mr. Alan H. Locher, Jensen Marine Company
Mrs. Betty J. Long, California State University, Long Beach
Mr. Bradford F. Spencer, Spencer and Associates
Mr. Frank E. Washburn, Garrett AiResearch Manufacturing Company of California

## Prerequisites

1. A bachelor's degree with a major in psychology, or:
2. A bachelor's degree with a major other than psychology and 24 units of upper division psychology substantially equivalent to those required for the baccalaureate degree at this University, including Psychology 310 and an upper division laboratory course or equivalent.
3. Write directly to the Psychology Department for an application for admission to the graduate program in psychology (industrial option). Acceptance by the department is contingent on (a) grade point average based on last 60 units of undergraduate work available at time of application; (b) Graduate Record Examination scores on the verbal and quantitative sections and advanced psychology; and (c) letters of recommendation. All application materials, including complete transcripts, GRE scores and letters of recommendation, must be received by the department graduate adviser before April 25 for the fall semester and November 1 for the spring semester.

## Advancement to Candidacy

1. During the first semester in the M.S. Industrial program students must file a program of studies in psychology, approved by the graduate adviser, indicating the courses which will be taken to complete the M.S. degree.
2. Recommendation for advancement to candidacy by the department is prerequisite for all 600 level courses. Prior to registration in every 600 level course, the student must obtain an admission slfp from the graduate adviser showing prerequisite fulfillment and that advancement to candidacy has been recommended.
3. See the general University requirements.

## Requirements for the Master of Science, Industrial Option

The student must complete a minimum of 30 units of upper division and graduate courses, with a minimum of 24 units in psychology, including:

1. If not taken previously as an undergraduate student or to fulfill prerequisites: Psychology 315, 381, 411 or $412,418,481$ and 486.
2. A minimum of 21 units in graduate level courses including Psychology 586. 681, 688, 698; two courses chosen from Psychology 515, 527, 581, 696.
3. An oral examination covering the thesis.
4. A maximum of six units from related areas may be substituted for six of the 30 units with a maximum of three of these applicable to the 21 -unit graduatelevel course requirement, with the adviser's approval.
5. Substitutions for required courses are permitted if a petition to substitute is approved by the MSI Program Committee prior to enrollment in the course.

## Lower Division

100. General Psychology (3) F, S Faculty

Introduction to the scientific study of human behavior. Designed to provide the student with a basic background for further study and for practical application in everyday life.
150. Personality and Social Behavior (3) F,S Faculty

Psychological principles pertinent to the understanding of personality and interpersonal adjustment. Discussion of research and theories of social motivation, conflict and anxiety, adjustment mechanisms and personality change.

## 200. Research Methods (4) F, S Faculty

Prerequisite: Psychology 100. Introduction to basic research methods in psychology. Principles of experimentation, naturalistic observation, correlational studies. (Lecture 3 hours, laboratory and field 3 hours.)
210. Introductory Statistics (4) F,S Faculty

Prerequisites: Psychology 100 and, within two preceding years, either (a) score of 20 or better on the Mathematics Placement Test or (b) grade of $C$ or better in Mathematics 100 or equivalent. Calculation and meaning of statistical measures. Descriptive and inferential statistics: probability, normal curve, correlation, sampling, hypothesis testing. (Lecture 3 hours, laboratory 2 hours.)

## 241. Psychobiology (3) F, S Faculty

Prerequisite: Psychology 100. Introduction to the study of behavior from a biological point of view. Biological systems and processes underlying behavior, with emphasis on brain mechanisms, presented in the context of fundamental concepts and issues in psychology. (Lecture 3 hours.)

## Upper Division

*310. Intermediate Statistics (4) F,S Faculty
Prerequisite: Psych 210 or introductory statistics course. Basic theoretical concepts of statiscencents in the selection and development of model testing, hypothesis testing and parameter estimation procedures. Both single measure (univariate) and correlational (bivariate) concepts are included. (Lecture 3 hours, laboratory 2 hours.)
*314. Psychological Assessment (3) F,S Dowell, Kapche, Lindner,
McClelland
Prerequisites: Psychology 200 and 210. Principles of assessment applied to the measurement of indidual behavior and to programs intended to affect behavior. Includes interviews, tests and other methods. (Lecture 3 hours.)

## *315. Principles of Psychological Testing (3) F,S Jarrett, McClelland, Rhodes, Towner

Prerequisite: Psychology 210 or one statistics course. Principles and practices of group and individual testing in the fields of intelligence, aptitude, achievement, personality and interest. Emphasis on the evaluation of tests as measuring devices, their applicability and limitations. (Lecture 3 hours.)

## *331. Sensation and Perception (3) F,S Colman, DeHardt, Haralson

 Prerequisite: Psychology 200. Basic phenomena of the senses, their physiological correlates and integration in complex perceptual judgments. (Lecture 3 hours.)*332. Cognition (3) F,S Hanson, Jung, Resch, Smith
Prerequisite: Psychology 200. Study of higher-order processes basic to the acquisition of knowledge. Includes thinking, problem solving, creativity information processing, decision making, judgment, concepts and imagination Not open to students with credit in Psychology 434. (Lecture 3 hours.)

## *333. Psychology of Learning (3) F,S Bradley, Danson, Fiebiger, Nygaard,

 Padilla, Rebok, SmithPrerequisite: Psychology 200. Hum an and animal learning with special emphasis on experimental evidence and techniques. (Lecture 3 hours.)
*336. Psychology of Emotion (3) S Hommel, Hupka, Jung, Thayer
Prerequisite: Psychology 200. Discussion of research, theories and coping mechanisms of human emotions. (Lecture 3 hours.)
*337. Psychology of Motivation (3) F Hommel, Hupka, Jung, Thayer
Prerequisite: Psychology 200. Situational and physiological determiners of human and animal behavior, theories of motivation and emotion, discussion of techniques and problems in the study of motivation. (Lecture 3 hours.)
*341. Neuropsychology (3) S Green, Haralson
Prerequisite: Psychology 200. Neurological correlates of behavior with special emphasis upon central nervous system structure and function. Experimental evidence on which neuropsychological theories of behavior are based. (Lecture 3 hours.)
*343. Comparative Psychology (3) F Haralson
Prerequisite: Psychology 200. Phylogenetic differences in animal behavior leading to the development of psychological principles. (Lecture 3 hours.)
*345. Psychophysiology (3) F Green, Haralson
Prerequisite: Psychology 200. Physiological activity occurring in humans during particular behavioral states. Theoretical problems and methodological approaches. (Lecture 3 hours.)
*350. Psychology and Contemporary Social Issues (3) F,S Carlson
Prerequisite: Psychology 100. Application of social psychological principles toward understanding major contem porary issues.
*351. Social Psychology (3) F,S Carlson, Heintz, Jorgenson, Lindner, Thayer Prerequisite: Psychology 100. Study of individuals and groups as they are affected by social interactions. Includes such topics as social perception and learning, attitudes and persuasion, social influence (conformity, obedience), interpersonal perception (liking and loving), anti- and prosocial behavior (aggression, violence, altruism), cooperation and competition, leadership, group dynamics, sexual behavior. Not open to students with credit in Sociology 335. (Lecture 3 hours.)
*353. Humanistic Psychology (3) F,S Fiebert, Linden, Singer
Prerequisite: Psychology 100. Integration of emotion and reason in the functioning of the whole person. Use of psychology in expanding normal human potential, as in altered states of consciousness, ESP, exalted experiences, encounter groups. Application of these approaches in social institutions. (Lecture 3 hours.)
*354. Psychology of Women (3) F,S DeHardt
Prerequisite: Psychology 100. Psychology of sexism; the biological and social determinants of the psychology of women. Open to all qualified men and women students. (Lecture 3 hours.)
*355. Therapist and Experimenter Effects (3) F DeHardt
Prerequisites: Psychology 200 and 351 or 356 or 370 . Examination of research and practice relative to cross-cultural and cross-sexual therapist-client problems Particular emphasis on the advantages and disadvantages of white-nonwhite, malefemale and straight-gay therapist-client combinations. Consideration of the validity of research and therapy generally on social minority persons. (Lecture 3 hours.)
-356. Personality (3) F, S Jung, Kapche, Lindner, Raine, Thayer
Prerequisite: Psychology 100. Discussion of theories, research and assessment in personality. (Lecture 3 hours.)
*359. Self-Observation and Self-Development
(3) F, S Fiebert, Linden,

Singer, Thayer
Prerequisite: Psychology 100. Examination of personal traits and behavior patterns as reflected by objective measures, group interactional procedures and video feedback. Development of self through exposure to new environments experiences, self analysis and meditation. (Lecture 2 hours, laboratory 3 hours.)
*361. Developmental Psychology (3) F,S Jung, Nummedal, Petersen, Rebok
Prerequisite: Psychology 100. Psychological problems of human development onsidered with reference to data from studies of children and lower animals (Lecture 3 hours.)
*365. Psychology of Adult Development and Aging (3) S Faculty
Prerequisite: Psychology 100. Methodological and theoretical problems and ssues in the study of developmental change processes from young adulthood through old age. Theludes physical-motoric, social, physiological and int (Lecture 3 hours.)

## 370. Abnormal Psychology (3) F,S Faculty

Prerequisite: Psychology 100. Abnormal behavior as it throws light on normal ersonality social factors in personality disorders, together with the consideration of basio principles of mental hygiene. (Lecture 3 hours.)
375. Community Psychology (3) F,S Dowell, Lowenthal

Prerequisite: Psychology 100. Basic concepts and skills of community sychology including community assessment, community intervention, program , relationships between social systems and valuation and social policy analysis, relatonomically disadvantaged, minorities, individual behavior. Emphasis on the econome
women, youth and the aged. (Lecture 3 hours.)
381. Industrial and Organizational Psychology (3) F,S Bradley, Jarrett,

McClelland
Prerequisite: Psychology 100. Problems and procedures inioust, organizationa Consideration of job analysis, personnel selection and appraisal, organizationa and social context of human work, physical environment and consumer behavior (Lecture 3 hours.)

## *390. Special Topics in Psychology (3) F,S Faculty

Prerequisite: Consent of instructor. Topics of current interest in psychology selected for intensive development. May be repeated with different topics to maximum of nine units, but no more than six units may be used to satisfy requirements of the major. (Lecture 3 hours.)
*401. History and Systems of Psychology (3) F Creamer, Fiebiger, Nygaard Prerequisites: Six upper division units in psychology. Contributions to the development of psychology by prominent historical figures and systems from the early Greek philosophers through the early 20th century schools of structuralism, functionalism, behaviorism, gestaltism and psychoanalysis. (Lecture 3 hours.)
*402. Contemporary Systematic Psychology (3) S Fiebiger, Nygaard
Prerequisites: Six upper division units in psychology. Examination of 20 th century systematic formulations and general theoretical approaches. (Lecture 3 hours.)

## 403. Mathematical Models of Behavior

## (3) S Hanson

Prerequisite: Psychology 310. Use of mathematical models, especially stochastic models, for the descriptive and theoretical analysis of individual and group behavior. Topics in learning, perception, attitude change and other areas will be used in examples of fitting models to data. (Lecture 2 hours, laboratory 3 hours.)
*405. Field Work in Psychology (1-3) F,S Binder, DeHardt, Hommel, Singer
Prerequisites: Psychology major, junior or senior standing, Psychology 200, 210 12 upper division units in psychology, letter of recommendation, consent of instructor. Student works under the supervision of or in association with a professional having an advanced degree in a psychological discipline, and who is engaged in the practice of some aspect of psychology in the surrounding community. Placements include schools, hospitals, industries, journals, alternative life style organizations, free clinics and community mental health agencies. Students will confer regularly with the instructor during the semester and will write a report describing their work. Unit credit assigned in ratio of one unit for three hours field work per week ( 15 weeks). Offered CR/NC only.

## *408. Applying Psychology to Teaching Psychology (3) F,S Danson Nygaard, Smith

Prerequisites: Nine units of upper division psychology, Psychology 200, consent of instructor. Introduction to the application of principles of behavior to the learning of psychology. Discussion and application of new developments in college teaching. Practice in assisting students to learn the content of basic psychology courses. (Lecture 2 hours, laboratory 2 hours.)

## *411. Statistical Design and Analysis of Experiments <br> (3) F,S DeHardt Newman, Resch, Rhodes

Prerequisite: Psychology 310 or 412 or consent of instructor. Simple and complex designs. Statistical inference in economical experimentation and in scientific inference and prediction. (Lecture 3 hours.)
*412. Multivariate Statistical Analysis (3) F,S Hanson, Newman, Towner
Prerequisite: Psychology 310 or 411 or consent of instructor. Accuracy and cost of inference from multiple predictors. Discovering structural relationships among multiple variables. Theoretical implications of inferred structures. Applications (Lecture 3 hours.)
*415. Vocational Testing (3) F,S McClelland
Prerequisite: Psychology 314 or 315 or Educational Psychology 420. Principles and practices in the use of tests for vocational counseling and vocational selection Students administer tests to selected subjects. Emphasis on evaluation of these tests for their applicability and limitations. (Lecture 3 hours.)

## 416. Program Evaluation (3) S Dowell, Newman

Prerequisites: Psychology 310, 314. Introduction to the methods of designing mplementing, analyzing and reporting evaluations of programs in mental health industry, criminal justice, education and community settings. (Lecture 2 hours, laboratory 3 hours.)
*418. Computer Applications in Psychology (3) F,S Creamer, Jarrett
Prerequisite: Psychology 310 or equivalent. Foundations of computer technology and its application to psychology. Emphasis on real-time control by digita computers in psychological research and applications. (Lecture 2 hours, laboratory hours.)
433. Research in Cognition and Learning (3) F Hanson, Resch, Smith

Prerequisites: Psychology 310, and 331 or 332 or 333. Research methods in cognition, learning and perception. Laboratory includes observations and experiments on selected topics. (Lecture 2 hours, laboratory 3 hours.)
*437. Research in Emotion and Motivation (3) S Hupka, Jung, Thayer
Prerequisites: Psychology 310, and 336 or 337 . Research methods in emotion and motivation. (Lecture 2 hours, laboratory 3 hours.)
438. Psycholinguistics (3) F Smith

Prerequisites: Six units of linguistics or upper division psychology Psychological and linguistic approaches to study of language. Comparison of human language with communication in lower animals. Language development disorders, symbolism and universals. (Lecture 3hours.)
441. Research in Neuropsychology (3) F Green, Haralson

Prerequisites: Psychology 310, 341. Research methods in neuropsychology ncludes fundamentals of neuroanatomy, surgical procedures for stimulation esioning and recording, pharmacological procedures used in neuropsychological research. (Lecture 2 hours, laboratory 3 hours.)
*445. Research in Psychophysiology (3) S Green, Haralson
Prerequisites: Psychology 310, 345. Research methods in human sychophysiology. Includes polygraph recording and analysis in human response systems such as brain, skin, cardiovascular and respiratory systems. (Lecture 2 hours, laboratory 3 hours.)

## 451. Research in Social Psychology (3) F Carlson, Jorgenson, Lindner,

Prerequisites: Psychology 310, 351. Research methods and problems in social psychology. (Lecture 2 hours, laboratory 3 hours.)
453. Principles of Group Dynamics (3) S Heintz, Lindner

351 or Sociology 335. Behavior in groups with attention o such factors as leadership, followership, interaction and influence including organization management, morale, and efficiency. Problems, techniques and methods of investigation. (Lecture 3 hours.)
455. Psychology of Persuasion (3) F,S Carlson

Prerequisit Psychological bases of attitude communicationg and social personality, persuasibility and resistance to persuasion. (Lecture 3 hours.)
456. Research in Personality (3) $S$ Jung, Kapche, Lindner, Raine, Thayer

Prerequisites: Psychology 310, 356. Research methods and problems in Prerequisites: Psychology 310, 356. Resea
ersonality. (Lecture 2 hours, laboratory 3 hours.)
*457. Psychology of Sex (3) S Singer
Prerequisites: Psychology 351 or 356 or 370 , consent of instructor. Survey of topics in human sexuality with emphasis on developmental psychology of sexuality, attitudes and feelings related to sexuality, sexual variations and deviations, and sexual dysfunction and sex therapy. (Lecture 3 hours.)
*459. Social Psychology of Homosexuality (3) S Dank
Prerequisites: Psychology 100, Sociology 100. Social psychological and sociological analysis of various aspects of homosexual behavior. Exploration of the causes of homosexuality, social processes involved in developing a homosexual identity and the social consequences of living a homosexual life. Critical analysis of competing theories and review of relevant empirical research. Not open to students with credit in Sociology 427E. (Same course as Sociology 459.) (Lecture 3 hours.)
*461. Research in Developmental Psychology (3) F Nummedal, Rebok
Prerequisites: Psychology 200, 310, 361. Research methods in life-span developmental psychology. Includes cross-sectional and sequential design and statistical models. (Lecture 2 hours, laboratory 3 hours.)
*471. Research in Clinical-Community Psychology (3) F,S Binder, Dowell, Raine
Prerequisites: Psychology 310, 314, 375 or 473. Research methods in clinicalcommunity psychology. Designing and conducting research. Includes assessment of individual programs, social, clinical and community systems. (Lecture 2 hours, laboratory and field 3 hours.)
472. Laboratory in Clinical Methods (1) F Binder, Petersen

Prerequisite: Consent of instructor. To be taken concurrently with Psychology 473. Training in techniques studied in Psychology 473 including role playing, play therapy, behavior modification and family therapy. (Laboratory 3 hours.)
*473. Introduction to Clinical Psychology (3) F,S Binder, Connor, Linden, Raine
Prerequisites: Psychology 370, consent of instructor. Survey of the field of clinical psychology including an introduction to diagnostic procedures and therapeutic process. Practical projects in observation, case practice and case conference techniques. (Lecture 3 hours.)
*474. Introduction to Clinical and Community Techniques (4) S Faculty
Prerequisites: Psychology 472, 473, consent of instructor. Training in techniques studied in Psychology 472 and 473 including role playing, play therapy, behavior modification and family therapy. Open only to students who have been admitted to the two-year clinic undergraduate training program. (Lecture 3 hours, laboratory 3 hours.)

[^13]*476A,B. Applications in Community-Clinical Psychology (3,3) F,S Faculty
Prerequisites: Psychology 475, application for 476 A by preceding April 15 Supervised experience in the Community Psychology Clinic and other settings. Theory, application and research in crisis intervention, behavior modification, education and consultation skills and counseling of youngsters from various ethnic backgrounds.

## *481. Research in Industrial Psychology (3) F,S Creamer

Prerequisites: Psychology 200, 310, 381. Research methods and problems in industrial psychology. Includes direct observation, psychophysical, regression and experimental methodologies. (Lecture 2 hours, laboratory 3 hours.)

## 486. Personnel Psychology (3) F Jarrett

Prerequisite: Psychology 381 or 481 . Survey of existing knowledge and description of research techniques in personnel psychology. (Lecture 3 hours.)

## 490. Advanced Topics in Psychology (3) F,S Faculty

Prerequisite: One 300-level course in the subject matter of the course. Advanced study of selected topics in one basic area of psychology, e.g., cognition and earning, emotion and motivation, physiological, social, personality or developmental. May be repeated with different topics to a maximum of nine units See Schedule of Classes for subjects being offered during a given semester.

## 499. Independent Study (1-3) F,S Faculty

Prerequisite: Consent of department. Student will conduct independent aboratory or library research and write a report of the research. May be repeated for a maximum of 6 units.

## Graduate Division

## 515. Test Construction Theory and Practice (3) S McClelland, Rhodes,

## Towner

Prerequisite: Psychology 315. Consideration of problems in the construction of ests for personnel selection, educational screening, personality assessment aptitude estimating and measurement of academic achievement. Practice in the development of tests. (Lecture 2 hours, laboratory 2 hours.)
520. Instrumentation in Psychology (3) S Green

Prerequisites. Two upper division laboratory courses in psychology Representative meds, techniques and apparatus requirements for selected areas of laboratory investigation. (Discussion 2 hours, laboratory 3 hours.)
527. Human Factors (3) F Creamer . Application of personnel, testing Prerequisite: Psychology 481 or 486. Application of systems. Emphasis on organizational and engineering psychology to man-mach retrofitting man-machine a systems approach to the design, development and retrololopment and use of systems for optimal human use. Special consideration of deverschology 627. human factors handbooks. Not open to students with credit in Psychology 627.
541. Techniques of Physiological Psychology (3) S Green

Prerequisites: Psychology 341 and 343. Development of physiological methods噱 1 hour laboratory 6 hours.)

## 554. Attitude and Opinion (3) $F$ Carlson

Prerequisites: Psychology 221A,B,351. The nature and correlates of attitudes, development and use of measurement techniques.
573. Clinical Psychology (3) F,S Binder, Kapche, Linden, Mason, Raine

Prerequisites: Psychology 473, consent of instructor. Consideration and evaluation of clinical assessment, psychotherapeutic processes and current trends in clinical psychology.
574. Individual Intelligence Testing (4) F,S Lindner, Revie, Rhodes

Partice in administration and interpretation of the Stanford-Binet and Wechsler individual tests. Students will administan of the Stan to adults and children, be observed for proficiency and test clinir hours, laboratory 3 hours.)

## 577. Research in Clinical and Community Psychology (3) $S$ Binder, Dowell, Kapche

Prerequisites: Psychology 321 or 322, Psychology 473, consent of instructor Psychological research dealing with assessment, processes and outcomes o psycho-therapy; strategies of community intervention.
581. Organizational and Personnel Psychology (3) S Jarrett

Prerequisites: Psychology 381, 486. Analysis of organizational practices especially employee motivation, selection and training, supervisory practices and measurement of employee attitudes. Research methods for studying organizational behavior. Not open to students with credit in Psychology 481.
586. Proseminar in Industrial Psychology (3) F,S Bradley, Creamer, Jarrett, McClelland
Prerequisite: Psychology 381. Advanced consideration of problems and procedures in industrial psychology. Includes both differentiation and synthesis of major areas comprising industrial psychology.
590. Advanced Topics in Psychology (3) F,S Faculty

Prerequisite: Consent of instructor. Topics of current interest in psychology selected for intensive development. May be repeated (with selection of a second topic) for a maximum of six units. Topics will be announced in the Schedule of Classes.
631. Seminar in Perception and Physiological Psychology (3) For S Colman, Haralson
Prerequisites: Psychology 331 or 341 or 345 or consent of instructor, consent of graduate adviser, advancement to candidacy. Critical examination of selected topics in perception, information processing and neurophysiological correlates of behavior. Student emphasis on either perception or physiological psychology
632. Seminar in Learning (3) F Nygaard, Smith

Prerequisites: Psychology 333 or consent of instructor, consent of graduate adviser, advancement to candidacy. Advanced consideration of selected topics in learning.
634. Seminarin Cognition (3) S Padilla, Smith

Prerequisites: Psychology 333 or 332 or consent of instructor, consent of graduate adviser, advancement to candidacy. An examination of method, theory and experimental evidence in selected topics from the area of cognition.
637. Seminar in Emotion and Motivation

## (3) For S Hommel, Hupka

Prerequisites: Psychology 336 or 337 or consent of instructor, consent of graduate adviser, advancement to candidacy. Advanced consideration of selected topics in animal and hum an motivation and emotion
651. Seminar in Social Psychology (3) For S Carlson, Jorgenson, Lindner

Prerequisites: Psychology 351 or consent of instructor, consent of graduate adviser, advancement to candidacy. Critical examination of interpersonal relations, social influence, group membership and influence, and intergroup relations.
656. Seminarin Personality (3) For S Kapche, Lindner, Thayer

Prerequisites: Psychology 356 or consent of instructor, consent of graduate adviser, advancement to candidacy. Theories of personality structure, dynamics and development. Critical examination of research deriving from differen theoretical approaches.
661. Seminar in Developmental Psychology (3) F or S Nummedal, Rebok

Prerequisites: Psychology 361 or consent of instructor, consent of graduate adviser, advancement to candidacy. Consideration of theoretical and methodological issues in life span developmental psychology. Critical examination of research on selected topics, including development of physiological functions intelligence, language, learning processes, sensory processes, perception personality and social behavior.

## 671. Seminar in Behavior Disorders of Children <br> (3) For S Petersen, Lowen-

 thalPrerequisites: Psychology 370; Psychology 361 or Ed. Psych. 301, consent of graduate adviser, advancement to candidacy. Investigation of the etiology classification, diagnosis and treatment of behavior disorders in children from birth through adolescence.

672A-B. Seminar in Community Psychology $(4,4)$ F,S Faculty
Prerequisites: Psychology 673 and consent of instructor and graduate adviser intensive professional orientation in such topics as the psychology of poverty racism, alienation, urbanization.

673A,B. Practicum in Community Psychology (1-8) F,S Faculty
Prerequisites: Psychology 672A-B concurrently or consent of instructor, consen of graduate adviser. On-the-job training in the community. This work will be supervised by professional personnel and coordinated by university faculty. May be repeated for up to eight units of credit.
678. Clinical Practicum (3) F,S DeHardt, Linden, Mason, Raine

Prerequisites: Psychology 356, 370, 475, 573, 574, consent of instructor and graduate adviser, advancement to candidacy. Application for the Practicum should be made by October 15 or April 1 for the following semester. Clinical practice in varied clinical settings. Individual work with clients, diagnostic procedures, staff conferences, and case management. May be repeated for a maximum of six units of credit.

## 681. Seminar in Applications of Psychology to Industry (3) F,S Bradley,

Creamer, Jarrett, McClelland
Prerequisite: Consent of instructor and graduate adviser. Intensine Themes may change sychological applications to current problems of industry. Themes may change with each offering .

## 688. Practicum in Industrial Psychology (3) F,S Bradley, Creamer,

## Jarrett, McClelland

Jarrett, McClelland 681 consent of graduate adviser. Practice industrial pites: Psychology 681 , actors in various industrial settings. Individua esearch
690. Seminarin Psychology (3) F,S Faculty

Prerequisites: Consent of instructor and graduate adviser, advancement to candidacy. Seminar on topics of current interest in psychology selected for intensive development at an advanced level. May be repeated for a maximum of six units with different topics
696C. Research Methods in Psychology (3) F,S Hanson, Newman
Prerequisites: Paden 0 candidacy. The Experimenty. The nature and case study methods. Research design and analysis using multiple correlational and model, general probability models and Bayesian inference. This articularly for master of arts students and includes the required comprehensive examination.
21-79140

696I. Research Methods in Psychology (3) F,S Creamer, Hanson, Newman Prerequisites: Psychology 411 or 412, consent of graduate adviser, advancement candidacy. Nature and function of research in the behavioral sciences Experimental, correlational and case study methods. Research design and analysis using multiple linear regression model, general probability models and Bayesian inference. Offered particularly for master of science in industrial students and doe not include the comprehensive examination required for master of arts students.
697. Directed Research (1-3) F,S Faculty

Prerequisites: Consent of graduate adviser, department, advancement to candidacy. Theoretical and experimental problems in psychology requiring intensive analysis
698. Thesis (1-6) F,S Faculty

Prerequisites: Advancement to candidacy, consent of adviser. Planning preparation, and completion of a thesis in psychology. Must be repeated for a total of six units of credit

## Public Policy and Administration

Director, Center for Public Policy and Administration: Melchior D. Powell
Associate Director: Peter L. Shaw
Graduate Adviser: Stephen Blumberg.

## Administrative Assistant: William C. Manes

Faculty Advisers: All graduate faculty and members of the Faculty Advisory Committee to the Center.

## Faculty

Professor: Powell
Visiting Professors: Miller, Rowlands, Scott, Simon
Associate Professors: Baget, Baker, Shaw
Assistant Professors: Barber, Blumberg, Brandt.
The Center for Public Policy and Administration offers an innovative graduate program leading to the master of public administration degree. Designed with a professional emphasis and a recognized need to provide students with an ive of the administrative processes of increased competency and perspective op students' abilities to apply their government, the program also seeks to develop students ablic policy problems.
knowledge and leadership techniques to the solution of pubity which contribute to
The Center uses those disciplines of the University whe public policy and professional education and research in the various aspents may select a program administration. Because of the degree's flexibility, studrom of studies, place of elective courses oriented toward a generalist program of specific public program emphasis on a staff specialization, or permit a focus on a spec, but beyond this field. In all cases a knowledge in basic areas is required, but beyond their considerable freedom of choice enables stu
articular backgrounds or career objectives.
Applications are encouraged from persons wate program designed to prepare who wish to pursue, part-time or full-time, a graduate program extend their capacities them for new opportunities in public service in public policy and administration to in a present position. It provides education in works, social services, public health, professional persons in such fields as public wortional administration, recreation community development, criminal justice, educalis, urban and regional planning, administration, finance, personnel, policy
systems analysis and urban administration.

A detailed summary of requirements, course offerings and procedures for the master of public administration degree program are contained in a student handbook available from the Center for Public Policy and Administration.

## Master of Public Administration Degree (code 7-9550)

## Prerequisites

1. A bachelor's degree from an accredited college or university, which must include a minimum of 12 units of course work in curriculum reflecting professional competencies in the public service. Adequate undergraduate preparation shall be determined by the Center on a case by case basis. Significant managerial experience may be substituted for prerequisite course work on a case by case basis.
2. A student must have an undergraduate grade point average of 2.75 or better. A student whose overall undergraduate average is less than 2.75 but who presents acceptable evidence of professional potential shown through recent academic performance and experiential background, may be admitted by special action of the Center.
Following admission to the University, each student should formulate a Program Prospectus, or learning plan, in conjunction with a Center faculty adviser. The objective of the prospectus is to assist the student in developing an effective course of study to meet individual career needs and goals. The faculty adviser will provide advice to the student on MPA degree course requirements and elective opportunities and counsel the student in the chosen elective area.

## Advancement to Candidacy

1. Satisfaction of the general University requirements for advancement to candidacy
2. Completion of all master of public administration degree prerequisites.
3. Approval of the candidate's program by a faculty adviser and the Director of the Center for Public Policy and Adm inistration.
4. Completion of six units of course work at this University with a minimum 3.0 grade point average in all work completed or transferred to meet degree requirements toward the 36 unit minimum requirement for the M.P.A. degree.
5. Earned a minimum grade point average of 3.0 in all graduate work completed at this University or transferred to meet M.P.A. degree requirements.

## Requirements for the Master of Public Administration

1. A minimum of 36 course units in graduate and upper division course work with a minimum of 21 units of $500 / 600$ level courses in public policy and administration.
2. Satisfactory completion of Public Policy and Administration 500, 510, 650, 660, 670 and 696.
3. Completion of approved internship program (Public Policy and Administration 585 or 586) as required course work beyond the 36 unit minimum, or waiver of the internship requirement based on professional experience.
4. Additional elective course work in elective fields to meet the 36 unit minimum.
5. Successful completion of a written comprehensive examination and Public Policy and Administration 697, Directed Research, or 698, Thesis, and an oral examination on the thesis.

## Upper Division Courses Acceptable for the Master's Degree

## Anthropology

403. Political Anthropology (3)
404. Economic Anthropology (3)
405. Personality and Culture (3)
406. Dynamics of Cultural Change (3)
407. Urban Anthropology (3)
408. Applied Anthropology (3)
409. Anthropology and Health (3)

Art
445. Museum -Gallery Practices (3)
480. Art in the Community (3)

## Black Studies

400. Afro-American Social Thought (3)
401. Needs of the Ghetto Child (3)
402. Ecology of Black Crime (3)

Civil Engineering
405. Selected Topics in Civil Engineering (3)
406. Engineering Economy and Administration (3)
407. Urban Engineering (3)
426. Transportation Engineering (3)
429. Traffic Engineering (3)
460. Environmental Impact (3)
463. Land Environment Engineering (3)
464. Environmental Engineering (3)
465. Water Environment Engineering (3)
467. Water Resources Engineering (3)
469. Air Environment Engineering (3)
482. City Planning (3)

Criminal Justice
403. Criminal Justice: Ecology and Etiology (3)
424. Advanced Supervision and Executive Development in Criminal Justice (3)
482. Crime, Police and the Political Process (3)
485. The Role of the Police in Society (3)

## Economics

410. Problems of Microeconomic Analysis (3)
411. Monetary and Fiscal Policy (3)
412. Government and Business (3)
413. Economics of Transportation (3)
414. Public Utilities (3)
415. Urban Economic Problems (3)
416. Regional Economics (3)
417. Labor and the Law (3)
418. Labor Economics (3)
419. Economics of Poverty (3)
420. Economics of Health (3)
421. Public Finance (3)
422. Economics of State and Local Governments (3)
423. Economic Development (3)
424. Intermediate Economic Statistics (3)
425. Introduction to Mathematical Economics (3)
426. Introduction to Econometrics (3)

## Environmental Studies

496. Practical Involvement in Environmental Issues (3)

## Finance

464. Financial Management (3)

## Geography

452. Advanced Economic Geography (3)
453. Man as an Agent of Environmental Change (3)
454. Population Geography (3)
455. Urban Geography: Principles (3)
456. Urban Geography: Metropolitan Problems (3)
457. Political Geography (3)
458. Field Methods in Rural Landscape Analysis (3)
459. Field Methods in Urban Analysis (3)

## Health Care Administration

400. Health Care Systems (3)

## Health Science

400. Determinants of Disease Prevalence in Man (3)
401. Community Health Education (3)
402. International Health (3)
403. Health Behavior (3)

## History

474. History of Cities in the United States (3)
475. Economic History of the United States (3)
476B. Social History of the United States (3)
479B. Constitutional History of the United States (3)

## Home Economics

440. Environmental Factors and the Urban Family (3)
441. World Housing (3)

Human Resources Management
440. Collective Bargaining (3)
445. Job Analysis and Evaluation (3)
463. Personnel Development (3)
464. Managerial Psychology (3)
465. Personnel Selection and Appraisal (3)

## Management

425. Administrative Organization Systems and Business Policy (3)
426. Management and Information Systems (3)
Mexican-American Studies
427. Psychology of the Chicano (3)
428. Chicano Community-School Relations (3)
429. Chicano Political Systems (3)

Physical Education
488. Administration of Secondary School Physical Education and Athletics (3)

Political Science
414. Jurisprudence (3)
422. Public Opinion (3)
424. Legislative Process (3)
426. Urban and Regional Political Systems (3)
429. Proseminar in Politics and Policy Formation (3)
442. Planning and the Public Interest (3)
449. Proseminar in Public Policy and Administration (3)

## Psychology

411. Statistical Design and Analysis of Experiment (3)
412. Multivariate Statistical Analysis (3)
413. Vocational Testing (3)
414. Engineering Psychology (3)
415. Personnel Psychology (3)

## Quantitative Systems

410. Probability and Decisions (3)
411. Statistical Decision Theory (3)
412. Administrative Information Systems (3)
413. Computer Application for Business Problems (3)
414. Operations Research Deterministic Models (3)
415. Operations Research: Probabilistic Models (3)

Radio-Television
406. Mass Media and Society (3)

## 416. Film History (3)

Recreation and Leisure Studies
421. Supervision in Recreation (3)
425. Organization and Administration of Recreation (3)
491. Introduction to Therapeutic Recreation (3)
493. Management of Volunteer Programs (3)

## Sociology

327. Social Organization (3)
328. Social Psychology (3)
329. Small Groups (3)
330. Juvenile Delinquency (3)
331. Social Disorganization (3)
332. Population and Migration (3)
333. Human Ecology (3)
334. Rural-Urban Trends (3)
335. Social Institutions (3)
336. Industrial Sociology (3)
337. Sociology of Sexual Behavior (3)
338. Social Control (3)
339. Criminology (3)
340. Penology (3)
341. Ethnic Group Relations (3) Social Work
342. Social Services in Health Setting Medical (3)
343. Social Services in Health Setting Psychiatric (3)

## Speech Communication

432. Discussion Leadership (3)
433. Communication in the Organization Setting (3)
434. Communication Theory (3)
435. Intercultural Communication (3)

## Theatre Arts

476. Theatre Management (3) Urban Studies
477. Urban Studies Colloquium (3)
478. Urban Community Problems (3)

Vocational Education
451. Vocational Education in Community (3)

## Graduate Courses

Graduate course descriptions are found in the departmental listings in which they are offered. Graduate courses applicable for the degree are Anthropology 516; Art 580, 611; Civil Engineering 506,507,522,525,560,562,563,564,565; Criminal Justice $512,521,551,581,621,622,623,624,640,641,650,690$; Economics 500,510 , 511, 545, 636, 640, 650, 665, 686; Educational Administration 541, 544,571, 573,580, 647, 648, 649, 651, 661, 680; Educational Psychology 615; Finance 533, 632; Geography 666;Health Science 501, 626, 627, 628; Home Economics 645; Human Resources Management 500, 552, 556, 650, 652, 655; Management 542, 544, 641, 642, 645A,B, 646A,B; Marketing 664; Physical Education 521; Political Science 553, $587,630,645,650,660,665$; Psychology 515, 527, 581, 586, 681; Public Policy and Administration 525,545,555,565,590,597, 615, 680; Quantitative Systems 500; Recreation and Leisure Studies 521, 525, 571, 575, 595; Sociology 629, 647, 650; Theatre Arts 694; Vocational Education 501, 502, 504.
500. Foundations of Public Policy and Administration (3) F,S Faculty

Concepts of the discipline; fundamentals of public organization theory, policy ormulation and analysis, and administrative and management processes; management of the public interest; and ethics in government.
510. Public Administrative/Management Processes (3) F,S Faculty

Analysis of public administrative/management processes from the perspective of the public executive, public finance and budgeting, public personnel systems, standards of efficiency and effectiveness in the conduct of the public's business, and the role and use of organizations and administrative processes to achieve public objections.
525. Social Services Administration in the Public Sector (3) F,S Brandt Examination of social services agencies in the public sector and the unique administrative practices, policies and problems associated therein.
530. Manpower Planning for Public Sector Organizations (3) F,S Barber

Examination programs and practices in the public sector with emphasis on ferally subsidized programs and their im plementation through local governments. Analysis of the functions of the manpower planner as they pertain to ocal market information; program monitoring and evaluation; and the human service delivery system.
535. Intergovernmental Administration and Management (3) F,S Baget

Concert heory and practice; policy making and implementation issues; intergovernmental administrative and fiscal relations.
545. Urban Planning Policies Processes and Techniques (3) F,S Faculty
. Historical development of urban plan open formulation; general plan housing and conservation elaise and scenic highway space and seismic safety elements;general plan olements; public participation. elements; general plan safety and optionalifornia's environmental impact analysis; developmen Southern California planning infrastructure; governmental programs influencing California.
(Federal, State); governmental planning in Southern Callornia.
550. Urban Transportation Policy and Planning (3) F,S Shaw

Examines the status of urban transportar the future. Analyzes local, state discusses the near and long-term options for Los Angeles urban transportation federal policy and intergovernmental system, Los andivities.

## 555. Local Government Budget Skills (3) F,S Miller, Rowlands, Scott

Detailed exploration of the various budget systems available to local governments. Stress will be on building detailed knowledge and skills in techniques of relating revenues to expenditures, program budget design and analysis, and relating budgeting to the political process. Methods of balancing citizen demands with revenue limitations within a consumer-oriented society also will be considered, as will traditional and behaviorally-oriented budget controls
565. Local Government Finance Skills (3) F,S Faculty

Detailed examination of the local government finance function, and development of specific skills to be applied by the executive of middle management person in local government. Specific subjects will include accounting and its use; cash and debt management; public debt instruments; operating and capital budgeting administration of property, sales, income, business and excise taxes; enterprise and miscellaneous revenue sources, control devices, systems and techniques; and state supervision of local finance.

## 575. Financing Public Labor Agreements (3) F,S Rowlands

Analysis of current prevailing practices and techniques in the public sector relating to the impact of collective bargaining and other personnel practices onthe financial and budgetary capabilities of government; the course will review the financial implications of the civil rights legislation; discuss the cost of providing upward mobility through classification; present the real costs involved in the area of "total compensation;" and consider the fiscal implications of the arbitration process.

## 585. Public Policy and Administration Internship (3) F,S Barber

Prerequisite: Consent of instructor. A learning experience designed to provide an exposure to and an understanding of the governmental environment. Restricted to students who do not have previous work experience in the public sector.
586. City Management Internship Program (3) F,S Rowlands

Prerequisites: Completion of all other academic course work and requirements for the master of public administration degree; consent of instructor. Intensive six months' internship designed to provide student with a learning experience under the direct supervision of a professional city manager. Course is designed to prepare students for a career as a city manager.

## 590. Special Topics in Public Policy and Administration (3) F,S Faculty

An investigation of a special problem as defined by the instructor that is of current interest to the field of public policy and administration. May be repeated up to six units.
597. Directed Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Independent study in public policy and administration.

## 615. Seminar in the Evaluation of Public Programs (3) F,S Baker

Prerequisites: P.P.A. 670, 696. Examination of alternative views, goals, methods and problems involved in developing objective measurement and evaluation of the effectiveness of programs of governmental agencies. Emphasizes designing a plan evaluating a public program or activity and execution of a pilot study.

## 650. Seminar on Issues in Contemporary Public Administration

(3) F,S Faculty

Survey of various issues and topics critical to effective public administration in the contemporary United States including the social and political context of contemporary public administration (e.g., increasing diversity of public demands of public agencies, increasing complexity of the intergovernmental network, etc.), responsibilities and obligations of public servants in contemporary governments and selected issues of public management.
660. Seminar in Organization Theory and Behavior (3) F,S Faculty

Organizational change, effectiveness and allocation processes in public agencies. Theoretical models of open systems, rationalist, conflict, coalition and decision-making theories will be investigated with the aim of presenting a unified set of propositions about organizations. Leadership and small group theory
670. Seminar in Public Policy Analysis (3) F,S Faculty

Problems of formulating and evaluating public policy. Examination of how fficials have dealt with policy questions in various governmental contexts and the strategic environment of such analysis. Critical survey of various prescriptions for improving public policy and public policy analysis, focusing in particular on the mplications of reform for government expenditures.
80. Seminar in Urban Administration (3) F,S Faculty

Intensive study on the functions of the urban executive within the context of the urban environment. Focus upon the role of the urban public executive in the decision process as it relates to organizational theory and structure, ethics, delivery of services, motivation and productivity, management monitoring and auditing. Students present term projects relating to current urban government, public and quasi-public agency issues.
696. Research Methods in Public Administration (3) F,S Faculty

Application Application development of legislative proposals, elemental benefit-cost analysis, techniques of evaluating programs, and general application of the above skills to policy ormation and administrative problems of public organizations. Examination of methods to critically evaluate research designs, research evidence, sampling procedures and statistical data.
697. Directed Research (1-3) F,S Faculty Prerequisites: Consent of Center graduate adviser, advancemen problems in public The definition, presentation and discussion of (restricted to students who select the final comprehensive option).

## 698. Thesis (1-4) F,S Faculty

Prerequisiter, advancement to candidacy lanning administration (a thesis on the official MPA degree program will carry four units, see Center Guidelines for the Thesis contained in the Student Handbook).


## Radio-Television

## Department Chair: Dr. Robert G. Finney

## Professors: Baker, Finney, Martin, Morehead

## Associate Professor: Langston

## Assistant Professor: McMillan

Undergraduate Adviser: Dr. Robert G. Finney.
The curriculum in radio-television is designed to prepare both media consumers and media practitioners in a changing world of communication arts and technologies. Counseling, instruction and internship experiences are as students student majors who wish to pursue a variety of mectronic media on our lives.
who are primarily interested in the impact of a nalists with a narrow focus in a single
The department does not graduate specials medium. While providing audio, video and film producion concepts and skills. These also stresses the importance of pre and post production concepts
are acquired as part of intensive study in the liberal arts and sciences.
Students planning to major in radio-television must contact the 150, Introduction academic advisement. They are encouraged to complen major
o Radio-Television, prior to declaring a radio-television major
University Radio Station KSUL-FM
See Student Affairs Division for description

## Radio-Television Professional Advisory Council

The responsibilities of the Professional Advisory Council to the Radio-Television俍 Department are to evaluate the curricularicular structure to make the students解 Council is as follows:

Ed Arnold, sportscaster, KABC-TV
Alice Backes, sportscaster, KABC-TV
Joseph Baker, attorney
Warren Baker, KNBC-TV
Ralph Bakshi, animator/director
Bernard Barron, 20th Century Fox
Pher Television
Dick Block Council for UHF Broadcasting
Clayton Brace, KGTV-TV
C.C. Carter, A.C. Nielsen Co

Willie Davis, KACE-FM
David Dortort, producer
Maxwell Ewing, Atlantic-Richfield Co.
William Fraker, cinematographer
William Furniss, KOCE-TV
Ben Hoberman, KABC-AM
Richard Jones, General Telephone Co.
Irma Kalish, writer/Writers Guild of America-West
Robert Light, Southern California Broadcasters' Assn.
James Loper, KCET-TV
Ron Mardigian, William Morris Agency
Tichi Wilkerson Miles, The Hollywood Reporter
David Morehead, KMET-FM
George Nicholaw, KNX-AM
Robert O'Connor, KTTV-TV
Jon Peterson, Ash/LeDonne West, Inc.
Stu Rosen, producer/performer
Jay Sandrich, director
John Severino, KABC-TV
Stephen Sharmat, film consultant
Peter Schruth, Westinghouse Broadcasting Co.
Sherwood Schwartz, producer
Dewey Smith, McDonnell-Douglas Corp.
William Yates, Quinn-Martin Productions

## Major in Radio-Television for the Bachelor of Arts Degree (code2-6846)

Lower Division: Radio-TV 150, 204, 207, 208, 210, Speech Communication 130 and English 101.
Upper Division: A minimum of 24 units which must include Radio-TV 406, 430, and 300 or 416.
The student is advised to elect at least 18 units in one of the following: business administration, creative writing, instructional media, journalism, social-behavioral sciences, speech, theatre arts and fine arts.

## Lower Division

## 150. Introduction to Radio-Television (3) F,S Finney

An overview of the field of radio and television with emphasis upon history, economics, programming, regulation, technology and social impact of the radio and television media.

## 204. Writing and Production Planning (3) F,S McMillan

Prerequisite: Radio-TV 150 with a grade of C or better or consent of instructor Study of pre-production principles and procedures common to all media producers, with emphasis upon scripting and other writing skills unique to the electronic media. Consideration of bugeting, casting, legal clearances and other production problems.

## 207. Broadcast Audio Operations (2) F,S Faculty

Prerequisites: Radio-TV 150 and 204 with a grade of C or better and consent of instructor. Basic principles and techniques of studio operation, performing, writing, and producing for radio. (Activity 4 hours.)
208. Television Studio Operations (2) F,S Baker,Finney, Martin

Prerequisites: Radio-TV 150 and 204 with a grade of C or better and consent of instructor. Basic principles of planning, writing and producing television programs. (Activity 4 hours.)

## 10. Film Camera Operations (2) F,S Faculty

Prerequisites: Radio-TV 150 and 204 with a grade of $C$ or better and consent of instructor. Beginning techniques in motion picture production including use of the camera, picture composition, planning sequences, splicing and cutting films. Students will furnish their own raw film stock and pay for its processing. Students will be working with 8 mm and Super -8 mm equipment and materials. (Activity 4 hours.)

## Upper Division

0. History of Radio and Television Programs (3) F,S Martin Development of radio-television programming in America.
1. Television Production (3) F,S Baker, Finney, Martin

Prerequisite: Radio-TV 208 with a grade of B or better and consent of instructor. Experience in producing original television programs. Emphasis is on creative programming using a variety of production techniques, resulting in a public performance. (Production laboratory 9 hours.)
302. Television Activity (1) F,S Faculty

Prerequisite: Radio-TV 208 with a grade of $B$ or better and consent of instructor Idividual and group participation in closed circuit, instructional TV program produced as a function of the Instructional Television Office. Specific assignments etermined in consultation with instructor. Hours other than regular class time to and may be taken in any one semester. Maximum credit, 2 units.
303. The Documentary: Critics and Persuaders (3) F Faculty film, radio, and An historical and critical study of the best docum seeing and hearing a wide felevision. Direct experience with the form through see. Topics will include the cross-section of internationally acclaimed documentand industry, with emphasis documentary as a vital force in education, journalism and enlightenment.
on its creative use as an instrument of (3) F,S McMillan
304. Writing for Broadcasting and Motion Pictures (3) F,S consent of instructor Prerequisite: Radio-TV 204 with a grade of C or Nondramatic and dramatic writing scripts and copy may be produced.
309. Radio Production (3) F,S Faculty

Prerequisite: Radio-TV 207 with a grade of B or better and consent of instructor lelivery to the problic. (Production laboratory 9 hours.)
delivery to the public. (Production laboratory 9 hours.)
311. Advertising and the Electronic Media (3) $\mathbf{S}$ McMillan
 Theory, role, regulation and procedures creative principles which the studen Study of legal, ethical, commercial and creative pring strategy, campaigns and demons
314. Theatrical Film Symposium (3) F,S Faculty
 Lectures and discussions of creative preb, directors, writers, performers and current films; interviews with visiting producers units may be used toward the major. of Motion Picture Production (3) $S$ Faculty
Prerequisiques of Motion Picture Prade of B or better and consent of instructor Prerequisite: Radio-TV 210 with a grade lanning and producing original costs are expected to be approximatersing. Not open to students with credit in
own raw film stock and pay for its proceurs.)
Radio-TV 410. (Production laboratory 9 hour
324. Television Programming Symposium (3) F,S Faculty

Discussion and analysis of creative problems in the television industry. Current local and network programs. Interviews with visiting executives, producers, directors, writers, performers and technicians. May be repeated once. Only three units may be used as credit toward major.
339. KSUL Activity (2) F,S Faculty

Prerequisite: Radio-TV 309 or consent of instructor. Experience in administering and programming the University radio station, KSUL. Hours in addition to those scheduled will be arranged. May be repeated for a maximum of four units
345. Television, Film, Media Graphic Production (3) F,S Faculty

Theory and practical experience in the development of graphic arts for television, film or educational media productions. Emphasis upon planning and requesting graphics by the producer and designing graphics by the artist.
402. Broadcasting/Film Organizations (3) $S$ Finney, Langston

History, philosophy and development of employee-employer relations in broadcasting and motion pictures. Consideration of major contract provisions and collective bargaining unique to the electronic media.
403. Electronic Media in Education and Industry (3) F Baker, Langston

Development and utilization of radio, television and film in education and industry with emphasis upon instruction, training and public relations
406. Mass Media and Society (3) F,S Finney, Langston, Martin, Morehead

Theory and functions of the mass media in America. Enduring issues and society.

## 407. Children's TV Programming (3) S Faculty

Survey of theories and production techniques of children's programming. Special problems confronting creative and production staffs. Impact of children's programming; production considerations; program proposal design; scripting; puppetry; animation and live action.
408. Documentary Program Production (3) F Faculty

Prerequisites: Successful completion of an upper division production course, consent of instructor. History, theory and practice of documentary programming. Students will plan, research, write and produce either an audiotape, videotape or 16 mm film documentary to professional standards. Material costs are expected to be approximately $\$ 200$ per student. Not open to students with credit in Radio-TV 308.
416. Film History (3) S Faculty

Historical development of the motion picture with special emphasis on early invention, the development of technique, the "Golden Age" of the silent film and the present evolution of the sound film. Students are required to spend three hours each week reviewing film. (Lecture 3 hours, reviewing film 3 hours.)
420. Broadcast and Media Management (3) F Finney

Study of management in the unique broadcast and related media communications industry. Emphasis upon the manager's role and functions in the station, agency or other organization. Concentration in the areas of technical, program, community ascertainment in meeting the public interest obligation of a station licensee including relationships between the station, network, program producers, advertising agencies and the community.

## 430. Broadcast/Cablecast Regulation (3) $S$ Finney

Study of Federal Communications Law and court cases related to the broadcast/cablecast industries in the United States. Emphasis upon case analysis of landmark decisions affecting programming, news, advertising and other industry concerns.

## 432. Media Criticism (3) F Faculty

Prerequisite: Radio-TV 300 or 416 . Examination of theoretical bases of aesthetics and their application to the film, radio and television media. Study of critical approaches to and assessment of current trends and practices. Students are required to spend three hours each week reviewing the medium under study (Lecture 3 hours, reviewing media 3 hours.)

## 450. Women in Mass Media (3) F Faculty

Radio and television programs, films, advertising, the press and the popular music industry are among media analyzed to understand the image of women in electronic and print outlets and the status of their employment therein. Studies the social effects of image and fantasy as portrayed in media.
490. Special Topics in Radio-Television (1-3) F,S Faculty

Prerequisite: Consent of instructor. Topics of current interest in radio-television sele ferelopment. May be repeated for a maximum of six units Topics will be announced in the Schedule of Classes.

## 491. Internship (3) F,S Faculty

Prerequisite: Consent of instructor. At least 120 hours with cooperating media facilities on or off campus. Work to be directed and evaluated by the instructor in consultation with supervisors of the participating media facilities. One classroom meeting per week. Assignments will be varied, may include both production and non-production on majors of the department only
499. Special Projects in Television, Radio and Film (3) F,S Faculty

Prerequisite: Consent of instructor. Research into an area of special interest to Pe student, culminating in a research paper or production. Productions will be limited by equipment and facilities available during any term.

## Recreation and Leisure Studies

Department Chair: Dr. Marilyn A. Jensen.
Emeritus: Stanley R. Gabrielsen.
Professors: Cook, Gray, Jensen.
Associate Professors: Minar, Thorson
Assistant Professors: Andersen, Crayton.
Undergraduate Advisers: Ms. Rhoda Andersen, Ms. CeEtta Crayton, Mr. John Minar, Dr. Joyce Thorson.
Graduate Adviser: Dr. Raymond Cook.
Graduate Committee: Andersen, Cook, Crayton, Jensen, Minar, Thorson.
Recreation leadership is concerned with the organization and
programs to satisfy the leisure needs and interests of all people.
The curriculum is designed to prepare men and women for positions of leadership supervision and administration in public recreation and park departments, armed forces recreation, industrial recreation, medical recreation departments, armed forces recreation, indusy youth and adult serving agencies.

The curriculum encompasses selected courses in sociology, education and
The curriculum encompasses selected courses in sociology, courses in recreation psychology to provide an understanding of people; cours to achieve a broad leadership, art, music, physical education and theatre arts background in program skills; and a variety of professional cour
understanding of American leisure and the recreation profession.
Each major student must maintain a cumulative 2.0 grade point average on all units attempted and attain a minimum of a $C$ grade in each course must repeat that major. Students earning less than a C grade in a required course
course. A recreation prefix course may be repeated only
The department is accredited by the National Recreat Parks and Recreation, an Council on Accreditation and the California Councty agency of the California Park and Recreation Society.

The Department of Recreation and Leisure Studies offers a program of graduate studies leading to the master of science degree in recreation administration Detailed inform about the program is available upon request from the Recred Recreation and Leisure Studies Departme development of a philosophy of professional personnel who can contribute to the develic agencies and programs leisure, who are competent managers of private and publy to support current and future and who can accomplish the field research necessary to surea for interaction with operations. Unusually fine opp

Each applicant should request a copy of the official transcript of all college course work be sent to the graduate adviser in the Recreation and Leisure Studies Department in addition to the copies required by the Office of Admissions and Records.

Major in Recreation for the Bachelor of Arts Degree (code 2-1220)
Lower Division: Recreation 211, 241; one course from Theatre Arts 122, Art 100 Music 290; Psychology 100; Sociology 100.
Upper Division: Recreation 300, 312, 340, 421, 425, 475, 484, 485
Additional Courses: Each major student is required to complete courses selected from the following groups: One course from Educational Psychology 301, 302 Psychology 370; two courses selected from Speech Communication 344, 434 Journalism 270, 375, 376, 471; three courses from Recreation 318, 330, 491, 493 completion of two of the following three groups: Creative Arts: Art 304 plus four units of creative arts approved by adviser; Performing Arts: Theatre Arts 358 plus three units in performing arts approved by adviser; Physical Recreation Activities: Recreation 315, plus three units of physical education activity approved by adviser.

## Minor In Recreation (code 0-1220)

A minimum of 21 units approved by departmental adviser which must include Recreation 211, 241, 312, 340, 421 or 425, 484; one of the following: Recreation 315 317, 491, 493, 495.

## Certificate Program in Therapeutic Recreation

Requirements for the Certificate in Therapeutic Recreation

1. Recreation $484,485,487,491$ and 494 . Recreation 484 or 485 , Fieldwork I or II, must be completed in an approved therapeutic setting. Recreation 487, Internship in Therapeutic Recreation, must be taken after completion of the baccalaureate degree in recreation. The internship requirement is 40 hours per week for a minimum of eight weeks.
2. Nine units of upper division course work must be taken from two or more of the following areas, with approval of the therapeutic recreation adviser Biology, Educational Psychology, Health Science, Physical Education, Recreation, Sociology, Social Welfare.

## Certificate Program in Administration of Volunteer Services

Students pursuing an approved degree at CSULB may, at the same time, earn a Certificate in Management of Volunteer Services. Courses taken to meet the requirements of the certificate may also be used simultaneously, where appropriate, to meet the general education requirements of the degree or credential requirements of cooperating departments

The certificate may be earned through continuing education by students not regularly enrolled at the University. The program is also open to persons who have years of volunteer services in their background and are interested in becoming employed as paid volunteer coordinators.

## Requirements for the Certificate in Administration of Volunteer Services

1. A baccalaureate degree which may be awarded concurrently.
2. Satisfactory completion of 25 units which must include 10 units of core requirements as follows: Recreation 400, 488, 493 and 499; 15 units including Recreation 490; at least one course selected from Accounting 200, Human Resources Management 360 or 446 , Educational Psychology 434 or Management 326; at least one course selected from Criminal Justice 481, Political Science 412, Social Welfare 350 or 370 ; at least one course selected from Journalism 270 or 375 or 376 (Journalism 270 is a prerequisite for Journalism 375 and/or 376), Speech Communication 132 or 337 or 344

Master of Science Degree with a Major in Recreation Administration (code 6-1220)

## Prerequisites

1. A bachelor's degree with a major in recreation, or:
2. A bachelor's degree with a minimum of 24 units of upper division courses comparable to those required in the undergraduate recreation major at this University. (Students deficient in undergraduate preparation must take courses to remove these deficiencies at the discretion of the departmental graduate committee.)

## Advancement to Candidacy

1. Satisfy the general University requirements for advancement to candidacy.
2. Approval of the department graduate adviser and the Director of Graduate Studies and Research, School of Applied Arts and Sciences.

## Requirements for the Master of Science

1. Thirty units with a minimum of 24 units in recreation including Recreation $521,571,575,591,595$, and 696.
2. Recreation 696, Research Methodology, must be completed in the first year of the program, or concurrently with any 500 or 600 level course
3. A maximum of six units may be elected outside the department
4. A thesis (Recreation 698) and an oral thesis examination.

## Lower Division

211. The Recreation Program (3) F,S Minar

Methods and materials used in planning and conducting organized recreation programs in public and private agencies. Theory and practicum. Special emphasis on supervised programming in field experiences. Not open to students with credit in Recreation 311.
241. Community Recreation (3) F,S Minar, Thorson

Principles and organization of community recreation. Concepts of community Sule recreation.

## Upper Division

## . Orientation to Recreation and Leisure Studies (1) F,S Andersen

 Craytonvaluation and personal aptitudes and abilies determined through standardized tests. Personal cumulative records started. Orientation to the philosophy of the recreation and leisure studies department and employment potentials of the field.
312. Recreation Leadership (3) F,S Andersen, Thorson Prerequisites or corequisites: Recreation 211, 241. Theory and application leadership as it pertains to leisure service agen
group skills necessary for effective leadership.
315. Recreational Sports Supervision (3) F,S Faculty
sports for community-wide Organization and supervision with credit in Recreation 315A,B.
participation. Not open to students with credit $\begin{aligned} & \text { (3) } S \text { Faculty }\end{aligned}$
317. Camp Counseling and Administration (3) S Faculty Program and administration of the summer camed for students seeking summer esponsibilities of the camp counselor. wesigneredit in Recreation 217.
俍 217.
*330. Recreation in the Urban Community (3) F,S Crayton, Hoff
Exploration of the social problems, minority populations and community resources of the urban impacted areas in relation to concerns of recreation and human needs
*340. Leisure in Contemporary Society (3) F,S Andersen, Thorson
Prerequisite: Upper division standing. Intensive study of the new leisure and its impact on contemporary society.
*400. Policy-Making Boards (1) F,S Andersen
Study of policy-making structures within private and public organizations with special attention to volunteers working in the administrative area.
*401. Swimming Pool Management (1) S Minar
On-site, hands-on experiences in swimming pool operation and facility management. Classroom theory in areas of pool water chemistry, filtration and public health requirements for private and public pool operation.
*402. Leisure Counseling (1) F Thorson
Current concepts, procedures and techniques of leisure counseling.
*403. Aging and Leisure (1) S Thorson
Physical, social and psychological characteristics of aging as they apply to leisure.
*404. Computers in Leisure Services (1) F Jensen
Terminology and application of computers to the administration of leisure service delivery systems.
*421. Supervision in Recreation (3) F,S Jensen
Prerequisite: Lower Division requirements. Concepts and techniques of supervision in recreation agencies; emphasis on recruitment, assignment, evaluation and in-service training of recreation personnel.
*425. Organization and Administration of Recreation (3) F,S Andersen, Cook
Prerequisite: Lower Division requirements. Types of organization; program planning; finances; personnel; relationships and correlation with related agencies; construction, maintenance and promotion of the total recreation program as it relates to administration.
*475. Philosophy of Recreation and Leisure (3) F,S Minar
Prerequisites: Senior standing, recreation majors only. Exploration of the philosophic bases for current practices in recreation and leisure organizations.

## 484. Field Work I (3) F,S Andersen

Prerequisites: Consent of instructor, Recreation 211, 241, 300, 312, senior standing; plus a minimum of 1,000 hours of verified paid or volunteer experience, approved by faculty adviser. An intensive leadership experience in an approved agency jointly supervised by university and agency personnel.
485. Field Work II (3) F,S Andersen

Prerequisites: Consent of instructor, Recreation 211, 241, 300, 312, 484, senior standing; plus a minimum of 1,000 hours of verified paid or volunteer leadership experience, approved by faculty adviser. Supervised experiences in recreation leadership, supervision or administration in an approved agency other than the one to which the student was assigned in Recreation 484.

## 486. Field Work in Outdoor Recreation (3) F,S Mina

Prerequisites: Consent of instructor, Recreation 211, 241, 312, senior standing plus a minimum of 1,000 hours of verifiable paid or volunteer leadership experience approved by faculty adviser. Supervised leadership in outdoor recreation program of school, public or other approved agency. Minimum of 80 hours of supervised field experience in an approved agency required.
*487. Internship in Therapeutic Recreation (3) SS Crayton
Prerequisites: Recreation 491, 494, 484 or 485, plus nine units of course work from related allied health departments. This course is designed to provide clinical practical and didactic experience in the field of therapeutic recreation. Students are required to work a minimum of 320 hours at pre-selected agencies certified by the California Recreation and Park Society.
488. Internship in Management of Volunteer Services (3) F,S Andersen

Prerequisites: 1,500 hours of paid or unpaid experience in a recognized volunteer program or Recreation 484. A minimum of 100 hours of supervised work experience in a specific agency, either public or private, jointly supervised by a coordinator of volunteer services and a University faculty member. May be in a paid or volunteer capacity. Doe not substitute for Recreation 484, 485.
*490. Special Studies in Recreation (1-3) F,S Jensen, Minar
Prerequisite: Senior standing in recreation. Identification and critical analysis of Prrent problems in selected areas of recreation. Topics to be announced in the Schedule of Cl . May be repeated for a maximum of six units of credit with change of topic.
*491. Therapeutic Recreation Procedures I (3) F Crayton
Analysis of adereational and leisure activities and their relationship to Ae institutionalized or community based handicapped person. Not open to students with credit in Recreation 490A.
*492. Recreation in the Aquatic Environment (3) S Minar
Study of existing marine and fresh water aquatic facilities and programs with skills and techniques. Course content will be supplementer with field trips to provide on-site program and facility analysis.
*493. Management of Volunteer Programs (3) S Andersen, Jensen
This course is designed to develop an understanding of volunteer services and their value to agencies; to provide knowledge of the structure and function of social agencies, and to acquire administrative skills which will enable supervisors to provide meaningful roles for volunteers.
*494. Therapeutic Recreation Procedures II (3) F,S Crayton
Prerequisite: Recreation 491. Advanced principles, theories and trends relating to the field of therapeutic recreation. Emphasis on laboratory experiences leading to certificates in specialized rehabilitation areas
495. Outdoor Recreation Management (3) F,S Minar of outdoor recreation Extensive review of the techniques of acquisition resources and the roles of federal, state, local and privale sith credit in and development of these resources. Not open to students with credit in Recreation 318.
499. Independent Study (1-3) F, S Faculty

Prerequisites: Consent of department and approval by department chairperson interest. Independent study under the direct supervision of a faculty member.

## Graduate Division

## 521. Recreation Administration (3) $F$ Jensen

Organizational theory; planning, staffing and budgeting of recreation programs in governmental and voluntary agencies.

## 525. Recreation Areas and Facilities (3) F Faculty

Design, acquisition and care of park and recreation land areas and facilities development.
571. Philosophy, Issues and Trends (3) S Cook

Current philosophy, trends and issues in the field of recreation.
575. Problems in Recreation (3) $F$ Cook

Identification, analysis and proposed designs for the solution of problems in public and voluntary agencies.
587. Field Work in Recreation Administration or Supervision (3) F,S Andersen, Cook, Crayton, Jensen, Minar, Thorson
Prerequisite: Full-time recreation leadership experience. Minimum of 80 hours of supervised leadership in recreation administration or supervision in an approved public or private agency. Limited to students who expect to work in recreation administration or supervision
590. Special Topics in Recreation (1-3) F,S Faculty

Prerequisite: Consent of instructor. In-depth investigation of topics of curren interest and concern to students experienced in recreation. May be repeated (with selection of different academic sub-topics) for a maximum of six units of elective credit. Topics to be announced in the Schedule of Classes.
591. Research Proposal Writing (1) F,S Cook, Jensen, Thorson

Prerequisite: Recreation 696. Course is concerned with variations in research design and methodology. Completion of a thesis proposal is a requirement of this course.

## 595. Management Studies (3) S Jensen

Administrative studies and surveys; procedures for conducting appraisals of recreation programs and facilities

## 696. Research Methodology (3) F,S Thorson

Research methodology in recreation. Must be taken in first year of program. Not open to students with credit in Recreation 496.

## 697. Directed Studies (1-3) F,S Andersen, Cook, Crayton, Jensen, Minar, Thorson <br> Prerequisites: Recreation 496, advancement to candidacy. Independent investigation of field research problems in recreation.

698. Thesis (1-4) F,S Andersen, Cook, Crayton, Jensen, Minar, Thorson

Prerequisites: Recreation 496, advancement to candidacy. Planning, preparation and completion of an approved thesis. Required of all master degree candidates in recreation administration

## Religious Studies

## Department Chair: Dr. Alexander Lipski.

## Professor:Lipski

## Associate Professor: Eisenman

Assistant Professors: Battaglia, Broughton.

## Undergraduate Adviser: Dr. Alexander Lipski

The program in Religious Studies is designed to provide students with the necessary background required for a critical understanding of the forms and raditions of religion that have appeared in and characterize human culture. The program approaches objectively all religious phenomena, by providing students with an introduction to the major world religions, and the methodology, literature and history of religions. Courses deal with religion in the modern world and in man's culture.
Students interested in the degree in Religious Studies should apply to the Department Chair, Religious Studies Department, HOB-619.
Major in Religious Studies for the Bachelor of Arts Degree (code 2-6011)
The following core courses are required of all majors:
Lower Division: Religious Studies 152, 291.
Upper Division: Religious Studies 301, Philosophy 330.
Fifteen additional upper division units from three of the following five Fitegories: (a) Jewish Studies: Religious Studies 311, 312, 314, 315, 475, 490 $\dagger$, 495 $\dagger$; (b) Christian Studies: Religious Studies 312, 322, 324, 471, 472, 475, 487, 490 $\dagger, 494 \dagger$, $495 \dagger$; (c) Asian Studies: Religious Studies 341, 343, 344, 351, 481, 487, 490 $\dagger, 494 \dagger$, $495 \dagger$; (d) Biblical Studies: Religious Studies 311, 312, 322, 475, 490 $\dagger, 494 \dagger, 495 \dagger$; (e) Contemporary Religious Studies: Religious Studies $396 \uparrow, 481,485,490 \uparrow, 494 \dagger, 495 \dagger$. Six additional units are to be selected from either religi English 465 , Philses, or American Indian Studies 335, Comparative Literature 342, English 465, Philosophy 306, 307, 313, 442. Six to eight units of Hebrew, Greek or Sanskrit may be substituted.

## Minor in Religious Studies (code 0-6011)

Requirements for the Minor in Religious Studies
A minimum of 21 units in religious studies courses or courses from other departments
$\dagger$ When subject matter of special topics course is applicable, the course may be used.

Lower Division: A minimum of six units selected from Religious Studies 100, 152, 291.

Upper Division: A minimum of 15 units including three units from each of the following groups: (a) Western Religious Thought: Religious Studies 311, 312, $314,315,322,331,471,472,485$; (b) Eastern Religious Thought: Religious Studies $341,343,344,351,481$. Remaining units are to be selected from Religious Studies courses and the following electives: American Indian Studies 335, Anthropology 406, Asian American Studies 380, Black Studies 353 Comparative Literature 342, English 465, History 333, Philosophy 313, 330, 403.

## Lower Division

## 100. Introduction to Religion (3) F,S Faculty

Origin, nature, and function of religion in the individual and culture with emphasis upon and reference to outstanding personalities, sacred writings, and basic features of the world's leading religions

## 110. Life and Death in Eastern and Western Philosophy (3) F Lipski, Peccorini

Exploration of the evolution of ideas on life and death through the ages, as expressed in eastern and western philosophy. Same course as Philosophy 110.
152. Introduction to Asian Religions (3) $F, S$ Broughton

A survey of Indian, Chinese and Japanese religious thought. Emphasis will be on original texts in translations
291. Religion and Society (3) F,S Battaglia

Religious and secular views of man in relation to society with emphasis upon contemporary problems of personal and social ethics, political responsibility and social structure.

## Upper Division

## 301. Methodology in Religious Studies (3) S Faculty

Study of the methodology of religious studies, including the history of religions comparative and phenomenological study of religions, textual criticism, exegesis, research methods and techniques.
311. Literature and Religion of the Old Testament (3) $F$ Eisenman

The Old Testament as a religious, historical and literary document with emphasis on the religion and culture of the early Hebrews. Selected books will be read each term, but prime emphasis will be put on Genesis, Exodus, the early prophets Isaiah. The period of the conquest and the divided monarchies will be studied.
312. The Dead Sea Scrolls, Jewish State and Primitive Christianity (3) S Eisenman
Historical development of Jewish religion and culture in the Second Temple period from the rise of the Maccabbees to the beginnings of Christianity with emphasis on the rise of the Jewish State, the coming of the Romans and the beginnings of primitive Christianity (Essenism, Phariseeism and Sadduceeism).

## 314. History of the Jewish Religion (3) $F$ Eisenman

From the end of the Second Temple period to the close of the Middle Ages Development from Hellenistic Judaism to Rabbinic Judaism to philosophical theology will be gone into in some detail. Readings from Saadya, Halevi and Maimonides, etc

## 315. History of Zionism (3) F Eisenman

The course will deal with the development of Jewish thought from the enlightenment and emancipation from the ghettoes, through attempts at assimilation, the Holocaust and the birth of the Jewish State. The development of conservative, reform and orthodox Judaism will also be discussed

## 316. Jewish History (3) F Eisenman, Springer

Survey of Jewish history from early times to the present. Subjects such as the Babylonian Captivity, the fall of the Temple, the rise of Rabbinic Judaism, the Dispersion, the impact of anti-Semitism, Jewish community and intellectual life in the Middle Ages, Emancipation from the Ghetto, political movements, the Holocaust, Israel. Same course as History 331.
322. Literature and Religion of the New Testament (3) S Battaglia, Eisenman The emergent Christian community, seen through the missionary and pastoral letters, the snyoptic gospels, the radical theologies of Paul and John and the dramatic visions of the Apocalypse

## 324. Varieties of Christianity (3) $F$ Battagila

Introduth special attention to the causes of the division of Christianity into many churches. Similarities and dissimilarities in the doctrine and practice will be discussed in terms of present day Christianity.

## 331. Islamic Religion and Culture (3) S Eisenman

The Koran, Muhammad and the rise of Islam as a cosmopolitan faith. The development of Muslim civilization, including literature, theology, philosophy and Sufism (mysticism)
341. Buddhism (3) $S$ Broughton
and the vehicle of incantations Khe Korea, Japan, Southeast Asia and Tibet Emphasis will be on original texts in translations.

## 343. Religions of China (3) $F$ Broughton

Ancient Chinese religious thought; the penetration of Indian Buddhism and解 be on original texts in translations

## 344. Religions of Japan (3) S Broughton

The transmission of continental civilization to Japan; Shinto, Buddhism and Tokugawa No-Confucianism; Genroku culture; and the New Religions. Emphasis will be on original texts in translations

## 351. Hinduism (3) F Lipski

Survinduism (3) $F$ Lipski medieval Hinduism. Emphasis on analysis of Upanishads, Bhagavad Gita and the various paths of yoga.

## 396. Religion and Humanities (3) S Faculty

Examination the religious dimensions of man's existence as these are xpressed in the including literature, music and the fine arts. May be repeated up to a maximum of six units. Topics will vary.
471. Ancient and Medieval Christianity (3) F Abrahamse

Development of Christianity from the New Testament period to the Renaissance octrine, church institutions and the role of Christianity in ancient and medieval society.
472. History of Modern Christianity (3) S Battaglia Reformation through the Restructuring and renewal of Christianity, 20 th century secular life. Rn of modern challenge of 20 th century

## 475. The Historical Jesus (3) F,S Faculty

The life and person of Jesus of Nazareth through a consideration of the political religious, sociological and historical setting in which he lived. Non-Christian sources as well as Christian will be used in an attempt to reconstruct the movement centering around the person of the Messiah. The consequent messianic thrust o early Christianity both on a secular and religious basis will be treated fully Readings from Josephus and the New Testament.
476. Paul and James (3) F,S Faculty

The split between Gentile and Jewish Christianity, Paul representing Gentile Christianity and James the brother of Jesus, representing Jewish. A consideration of the two factions in the early Church, one following the "Apostle to the Gentiles" and the other following the family line of Jesus in a Jewish messianic way Readings from apocryphal gospels, the Book of Acts, Paul's letters and Eusebius.
481. Modern Hindu Religious Thought (3) $S$ Lipski

Western impact on traditional Hinduism. Renascent Hinduism. Worldwide significance of contemporary Hindu thought. (Same course as History 481 and taught by History Department.)

## 482. History of Religions in the United States (3) F,S Berk

Survey of major themes in the unique American religious experience. Topics of significance will include the adaptation of European Christianity to novel American circumstances, the proliferation of denominations and the varied religious response to a dynamic American society. (Same course as History 482 and taught by History Department.)
485. Contemporary Religious Thought (3) F Faculty

Critical examination of the current trends in religious understanding against a
background of rapid social change. New movements and issues on the religious scene will be considered and a variety of authors representing both East and West will be studied in order to reveal the emerging patterns of religious thought.
487. Mystics West and East (3) F Lipski

Analysis of the nature and methods of mysticism. Comparison of Christian, Jewish, Moslem, Buddhist and Hindu mystics. Emphasis on Christian mystics, especially Meister Eckhart and St. Therese of Avila.

## 490. Special Topics in Religious Studies (1-3) F,S Faculty

Topics of current interest in religious studies selected for intensive development. May be repeated up to nine units with different topics. Topics will be announced in the Schedule of Classes.

## 494. Religious Classics (3) F,S Faculty

Examination of selected religious classics including an analysis of religious themes in significant works of world literature. Specific works will vary. The course may be repeated for credit up to nine units with different topics.

## 495. The Religious Personality (3) F,S Faculty

Prerequisites: Three units of religious studies or consent of instructor. Study of the cultural influence and personal characteristics of religious men as reflected in their writings. Selection of personalities will vary. May be repeated for credit up to nine units with different topics.

## 499. Directed Studies (1-3) F, S Faculty

Prerequisite: Consent of instructor. Directed studies to permit individual students to pursue topics of special research interest. May be repeated up to a total of six units.

## Russian-East European Studies

Director: Dr. George Kacewicz

Russian-East European Studies has an interdisciplinary program which offers students interested in this field the opportunity to pursue courses leading to a in-East European Studies. Courses used to meet this certificate , Education equirement may be counted also, wher cooperating departments.

Interdisciplinary in concept, it covers the fields of anthropology, economics geography, history, comparative literature, management, philosophy, political science and the Russian language.

The expanding opportunities for careers and public service in foreign policy The exparivalios, administration, international organization, understanding, make it useful to education and information for intercultural under important part of the world will organize studies leading to a certificate in this a career in business, education or tend to enhance the student's possibility for a career
government, and broaden the scope of understandir. Russian-East European
Interested students should apply to the
Studies, Dr. George Kacewicz, Political Science
Requirements for the Certificate in Russian-East European Studies

1. A bachelor's degree with an approved major
2. A minimum of two semesters of a Slavic language. listed below chosen in
3. 18 units selected from four of the disciplines than six units of any one consultation with the student's adviser. No
discipline shall apply towards
4. Cumulative grade point average approved certification program.
Russian-East European courses: Anthropology 331, 490t; Comparative Literature $349 \dagger, 428 \dagger, 447 \dagger$, $449 \dagger$; Economics 364,368 , $490 \dagger$; Geography 317,318 ; History 341A, 341B, 441, 490t, 495t; Management 450, P, 201A, 201B, 312, 314, Politiol Sian 101A-B, 201A, 201B, 312, 314, 315, 401.

[^14]director of the center is required.

## Social Work

## Department Chair: Erma Lee Hutton.

## Emeritus: Warren Ponsar.

## Professors: Hutton, Lee

## Associate Professor: Granger

Assistant Professors: Pierce, Portner

## Undergraduate Adviser: Erma Lee Hutton

The Department of Social Work offers courses leading to the bachelor of arts pree with a career in degree with a major in social welfare to students seeking a professich approach so social work. The program is accredited and is gecial service or allied fields as that the student is prepared to enter any area or thicial a professional social worker. This includes such fields as public and privarectiona services, child and family services, mental health, medical and correctiona services, chil services. The student will aiso be eligibields, as well as in administration, advanced for additional preparation in the above supervision and teaching.
clinical areas, consultation, research, sue student who, through evaluations and
The program is designed for the studen performance in the first course(s) taken in the depal worker
and promise for development as a professional social worker
men the most or Because of the neneral education units and lower division requirements, outside of the all general education units and lower division reqtal courses. This will give the department, be completed prior to entering for the content of social work courses student greater assurance of readiness for the department, Insofar as possible, the three upper division requirem experience
should be taken early in the student's upper division experience.
Students contemplating declaring, or already accepted come to the department for counseling and advising conchedules.
which courses should be taken and arrang aking courses particularly in the ethnic
Social work majors should consider studies programs,other social and behavioral sctudies, and Home Economics as Center for Urban Studies, Center for Women's Studies, ants. The department can electives or for fulfiliment of general education requirements. Thild be most useful to make recommendations concerning those courses which would be closely allied to students interested in acquiring
professional social work practice.
All courses in the department are designed for social work majors. Howertive many of these courses are suitable for fu
requirements for students outside the major. An note that 82 accredited graduate
Students interested in graduate work should note ther master's degree in schools in the United States offer the two-year program for the master's degree
social work. Many of these professional schools now grant advanced standing of up to one year to students who have completed a Council on Social Work Education accredited undergraduate social work program

Students should note that many courses are closed to those who have taken certain departmental listings in previous Bulletins. If, however, students believe there are substantial reasons to take one of these courses, they should contact the department concerning this petition.

Major in Social Work for the Bachelor of Arts Degree (code 2-8555)
Lower Division: Anthropology 120, Biology 107, Psychology 100, Sociology 100, an elementary statistics course, Social Work 220, 221.
Upper Division: Economics 300 (or 200 and 201), Psychology 370, Sociology 320 Social Work 330, 331, 340, 341, 342, 350, 351, 440, 441, 465, 495A , B

## Lower Division

220. Introduction to Social Welfare (3) F,S Lee, Faculty

Historical and philosophical perspectives of the evolution of social welfare services and social work practice and their interrelationship to culture, economic, political, psychological and social conditions. Discussion of overall concerns of social welfare and public and voluntary efforts to fulfill these. Overview of the social worker's role in relation to human needs and methods of delivery of socia work services. Social work majors must take this course concurrently with Socia Work 221. Not open to students with credit in Social Welfare 260. Open to nonsocial work majors.
221. Introduction to Social Welfare Practicum (1) F,S Hutton

Open to social work majors only. Minimum of three hours of experience per week in a social service or allied setting, approved by the department, to acquain students with the various requirements of social work practice in the field Observational and/or volunteer activities which will help the student determine the desirability of social work as a career. Students enrolled in Social Work 220 who are considering social work as a major may receive instructor's permission to enroll in this course concurrently.

## Upper Division

## 330. Human Behavior and Social Environment: Birth through Adolescence

(3) F, S Portner, Faculty

Prerequisite: Social work majors: Psychology 100, Sociology 100; non-social work majors: consent of instructor. Examination of a wide range of hum an behavior and its relationship to the social environment within a developmental framework. Integration of general system and role theories, and concepts of stigma Implications for social work practice. Open to non-social work majors.
331. Human Behavior and Social Environment: Young Adulthood through Old Age (3) F,S Portner, Pierce
Prerequisite: Social work majors: Social Work 330; non-social work majors: consent of instructor. Examination of a wide range of human behavior and its relationship to the social environment within a developmental framework Integration of general system theory, role theory, personality theory and concepts of stigma. Implications for social work practice. Open to non-social work majors.

## 340. Social Work Practicel (3) F,S Granger, Faculty

Prerequisites: Social Work 220, 221, 330. Concurrent enrollment in Social Work 341. Open to social work majors only. Social work as a helping process. Basic principles of and generic frameworks for social work practice. Interviewing techniques, the role of the sonial worker in helping ameliorate and resolve social emotional and environmental problems and the relationship of these to all social work intervention.
341. Social Work Practicum (1) F,S Hutton

Prerequisite: Concurrent enrollment in Social Work 340 or 342. Open to social work majors only. Minimum of three hours' experience per week in a social service or allied setting, approved by the department, to acquaint students with the requirements of social work practice in the field. Student participation in various social work activities. May be taken once for credit with Social Work 340 and once for credit with Social Work 342
342. Social Work Practice II (3) F,S Granger

Prerequisites: Social Work 331, 340, 341. Concurrent enrollment in Social Work 341 or 495A. Open to social work majors only. Social work practice with individuals and families. Theories, techniques, activities, roles of the social worker, differential approaches to evaluation, treatment and helping processes.

## 350. Social Policy I (3) F,S Hutton

Social policy as defined in legislation and as affected by judicial decisions. Legal background and development of social legislation affecting rights of individuals, minorities, families and the general welfare. Implications for social work practice will be considered. Not open to students with credit in Social Welfare 367. Open to non-social work majors.
351. Social Policy II (3) F,S Hutton, Pierce

Prerequisites: Social Work 220, 221,350. Policies, programs and issues related to social welfare institutions and services, including the interrelation of these with other parts of the social structure. Motivations and methods by which major social welfare policies and programs were developed in our society. Current values and ssues in social welfare policy. Not open to students with credit in Social Welfare 467.
370. Social Services for Families and Children (3) F,S Granger, Faculty Contemporary social welfare programs designed to meet the physical, psychological and social needs of families and children. Settings in which services are provided. Basic principles and methods of providing services, including the role of the social worker. Not open to students with credit in Social Welfare 461. Open to non-social work majors.

## 371. Probation, Parole and Other Social Services in Corrections (3) F,S

 FacultyContemporary governmental and private correctional services designed to meet The needs of the offender and the community. Includes probation, parole, institutional and community based programs. Historical background, principles of investigation, supervision, treatment and the role of the social worker. No
372. Social Services in Health Settings-Medical (3) F,S Lee, Faculty

Survey of the development of scientific medicine, the modern hospital, statutory health regulations and medical social work. Consideration of acute and chronic
 credit in Solfare 470 . Open to non-social work majors
373. Social Services in Health Settings-Psychiatric (3) F,S Faculty

Survey of psychiatric concepts, mental health laws, regulations governing the ractice of psychiatric social work and descriptions of settings providing mental health service. Consideration of acute and chronic mental and emotional
 eliver community. Not open to students :with redit in services to the patient, family social work majors.

## 440. Social Work Practice III (3) F,S Lee, Portner

Prerequisites: Social Work 331, 340, 341. Concurrent enrollment in Social Work 495A or B. Open to social work majors only. Analysis of group dynamics, theories and principles underlying practice with groups. Programs, practice techniques and roles involved in working with various types of groups. Not open to students with credit in Social Welfare 364.

## 441. Social Work Practice IV (3) F,S Faculty

Prerequisites: Social Work 331, 340, 341. Concurrent enrollment in Social Work 495B (may be taken concurrently with 495A with departmental consent). Open to social work majors only. Analysis of theories and principles underlying practice with communities. Adaptation of theories and activities to the variety of organizational contexts encountered. Techniques and activities involved in working with local communities and neighborhoods. Not open to students with credit in Social Welfare 366

## 465. Research Methods in Social Work (3) F,S Lee

Prerequisites: Social Work 340, 341, 342, one course in elementary statistics. (Social Work 342 may be taken concurrently with 465 under special circumstances.) Open to social work majors only. Must be completed prior to or concurrently with 495B. Introduction to research methods in the social work profession with emphasis on evaluation of the effectiveness and outcomes of social work and community service programs. Not open to students with credit in Sociology 455 or Social Welfare 455E

495A. Field Experience in Social Work (7) F,S Faculty
Prerequisites: Social Work 331,340, 341, 350. Concurrent enrollment in Social Work 342 and/or 440 . Open to social work seniors who have been accepted by the department for field work. Supervised practice experience in social welfare agencies and allied settings. Requires weekly two hours of campus seminar and 16 hours minimum in agency placement. Not open to students with credit in Socia Welfare 460A, B.

## 495B. Field Experience in Social Work (7) F,S Faculty

Prerequisites: Social Work 351, 495A. Concurrent enrollment in Social Work 440 and/or 441. Must be taken immediately after 495A. Open to social work seniors who have been accepted by the department for field work. Supervised practice experience in social welfare agencies and allied settings. Requires weekly two hours of campus seminar and 16 hours minimum in agency placement. Not open to students with credit in Social Welfare 460A, B.

## 499. Directed Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Independent study of special topics under supervision of a faculty member.

## Sociology

## Department Chair: Dr. Paul S. Ullman.

Emeriti: Audrey Fuss, Martin R. Haskell, George W. Korber, Alfred W. Sheets
Professors: Dank, Fradkin, Harman, Hartman, Hubbard, Massaro, Penalosa, Ullman, Walker.
Associate Professors: Aarons, Cereseto, Halliwell, Leis, Lunceford, Parker, Richmond, Slawski, Smith, Turk.

## Undergraduate Adviser: Mr. Herbert Aarons

Graduate Adviser: Dr. Marsha S. Harman
Graduate Studies Committee: Cereseto, Harman, Leis, Richmond, Slawski.
The primary purpose of the major in sociology is to develop the student's understanding of social phenomena. Courses are designed to provide insight into social processes and social systems. Sociology courses are suitable for fulfilling general education or elective requirements for students of other majors. In addition the major is intended to serve as preparation for careers in teaching, social and environmental studies, law, government service and
 social sciences. Sociology is also recommended as a second major or minor for students of all other social sciences; for the humanities, especially literature and theatre arts; for
studies; for journalism and other various also wish to consider the liberal studies Students interested in sociology may also studies program is located major with a concentration in sociology. The concentration may be elsewhere in this Bulletin. Detailed inforfice
obtained from the Sociology Department of the major may not also be used to Courses selected to fulfill the requirements
fulfill the requirements of any General Education category.
The Department of Sociology offers graduate study leading the general requirements degree. The graduate is urged to become acquainted withents of the department. The stated in this Bulfetin as well as the specific requirenviser prior to beginning study graduate candidate must consult with the selection of a faculty adviser, and other concerning departmental procedures, pertinent information. Further description of the description and Sociology is available in the department upon may vary from those contained requirements of the graduate program in sociology martment as to changes in the in this Bulletin. All students should check with the department as to chand again prior program at the time of application for admission to

## Major in Sociology for the Bachelor of Arts Degree (code 2-8560)

Lower Division: Fifteen units of lower division are required. Students must have credit for Sociology 100, 142, 255, Anthropology 120 and Computer Studies 200 Computer Studies 210 may be substituted for Sociology 255.
Upper Division: Satisfactory completion of at least 51 semester units of college work is required before students will be accepted into upper division sociology courses. All majors are required to have a minimum of 30 upper division units in sociology. This must include credit for Sociology 300,327, 335, 355, 356, 420, 455,456 , and six units of electives from other upper division courses.
A minor in another area of Social and Behavioral Sciences is recommended.

## Minor in Sociology (code 0-8560)

A minimum of 24 units which must include:
Lower Division: Sociology 100, 142.
Upper Division: Sociology 335 and a minimum of 15 units selected from other upper division courses in sociology.

## Master of Arts Degree with a Major in Sociology (code 5-8560) <br> \section*{Prerequisites}

1. A bachelor of arts degree in sociology from an accredited college or university substantially equivalent to that required for the baccalaureate degree at this University (see B.A. degree, major in Sociology), or
A bachelor of arts degree with a minimum of 30 upper division units in sociology substantially equivalent to those required of a major in sociology at this University.
2. In order to be considered for admission to the graduate program, a student must have an undergraduate grade point average in the required courses of the B.A. major in sociology of $3.0(B)$ or better.
3. Completion of Verbal and Quantitative section of the GRE with 400 or more points scored on each section and a combined score of at least 1000 points. (Students for whom English is a second language and physically handicapped students may be permitted to take an equivalent examination so as to test knowledge rather than speed or fluency.)

## Advancement to Candidacy

1. See general University requirements for advancement to candidacy.
2. In order to be recommended for advancement to candidacy, students must obtain the written approval of their master's program by two full-time, regular faculty members, one of whom will be the faculty adviser, and both of whom will serve on the student's three-member master's committee. Students must have established this committee prior to the completion of their first semester of graduate work in sociology, unless an exception is granted by the Department Graduate Studies Committee. The student's program must also be approved by the department graduate adviser.
3. Students must achieve a score at the median or above on the Advanced Sociology section of the GRE. This section of the examination may be taken during the first year of residence in the graduate program at this University. (Students for whom English is a second language and physically handicapped students may be permitted to take an equivalent examination for this requirement so as to test knowledge rather than speed or fluency.)

## Requirements for the Master of Arts

1. Complete a minimum of 24 graduate and upper division units in sociology with a minimum of 18 units in the 600 series including Sociology 635, 656, 696A, B, and 698. Grades of B or better are expected in Sociology 635, 656 and 696A,B for successful completion of the degree. Students who fail to receive
a grade of $B$ or better in these core courses $(635,656,696 A, B)$ may be removed from candidacy for the master of arts degree in sociology.
2. Complete six additional upper division or graduate units as approved by the student's master's committee. (These units may be in sociology or a field related to the student's area of specialization.)
3. The graduate student must complete a thesis successfully and pass an oral examination on the thesis.

## Lower Division

## 100. Principles of Sociology (3) F,S Faculty

Introduction to basic concepts of sociology and sociological analysis, emphasis upon group, status, role, personality, socialization, social processes, institutions, social organization and socio-cultural change.
135. Society and the Individual (3) F,S Faculty

Intended primarily for non-majors. Examines the social processes influencing the individual's development and behavior from infancy through the entire life cycle. Includes childhood personality development, self-images, social roles, peer influence, reference groups and social influence by occupational, political, ethnic and religious groups. Also analyzes the development of self-control and social control and social factors affecting attitude formation and change.

## 142. Social Trends and Problems (3) F,S Faculty

Concepts of social change, lag, trends and disorganization; population growth and mobility; minority groups; rural-urban relationships; communication agencies and problems; public health; social stratification; and war. Especially ecommended for teachers who want a general survey of social problems.
255. Elementary Statistics (3) F, S Anderson, Fradkin, Halliwell, Harman,

## Hubbard, Walker

 elementary high school algebra. Statistical techniques in social research. Relations of appropriate techniques to research problems. Assum ptions necessary to the use of statistical techniques. Not open to students with credit in Mathematics 180

## 275. Marriage (3) F,S Hartman

Survey of the mating, courtship, engagement, mate selection, areas of adjustment in marriage, parenthood, financial and homemaking problems.
290. Special Topics in Sociology (3) F,S Faculty
oriology selected for intensive study. Topics will be保 maximum of six units.

## Upper Division

300. Sociological Analysis (3) F,S Faculty

Soplication and critical analysis of sociological concepts and principles in professional and popular literature. Analysis of case study, field, experimental and survey materials are included. Emphasis will be placed on writing skills in sociology. This course should be mpler upper division course work.
320. The Family (3) F,S Hartman, Penalosa, Slawski, Ullman
. Family as a social institution in various cultures with stress on the American family systems. Analysis of forces producing change, organization and disorganization of family systems.
*325. Sociology of Women (3) F,S Turk
Socio-cultural position of women; a brief history of women's role and status societal attitudes toward women's place in society. Open to both men and women.
327. Social Order and Social Change (3) F,S Cereseto, Richmond, Slawski Prerequisite: Sociology 100. Introduction to classical and recent analysis of social order and social change. Study of institutions and organizational structure of social systems in the past and present and their effects on hum an life.
335. Social Psychology (3) F,S Aarons, Dank, Slawski, Smith

Prerequisite: Sociology 100 or Psychology 100. Examines social processes in personality development and the socialization process whereby the individual is integrated into social groups. Includes social influence of family, peers, reference groups and subcultures. Examines the impact of primary groups, social organizations and mass media on attitudes and behavior. Not available to students with credit in Psychology 351
*336. Sociology of Small Groups (3) F,S Hartman, Lunceford, Slawski, Turk, Ullman
Prerequisite: Sociology 100. Designed to give theoretical and practical understanding of sociological concepts and principles found in the dynamics of small groups; research and theory, the individual in a social situation, the group as a system of social interaction, leadership, methodology, and the small group approach to a problem.
*345. Juvenile Delinquency (3) F,S Aarons, Fradkin
Juvenile delinquency as a recent social "invention;" extent and distribution; major explanatory theories ranging from classical to radical views; societal reaction; the juvenile justice system with emphasis on the contemporary trend toward diversion programs.
*350. Population Structure and Problems (3) S, Odd years Harman
Presents the basic demographic variables (fertility, mortality and migration) and methods (vital statistics and census). Historical and current trends in U.S. and world population composition, growth and movement are examined with particular attention to social processes.
*355. Introduction to Social Research (3) F,S Fradkin, Harman, Hubbard, Walker
Prerequisite: Sociology 255 or 210 or consent of instructor. Basic research design. Principles of naturalistic methods and interviewing. Introduction to the use of census data and demographic methods. Analysis of the basis of social science explanations of behavior

## 356. Development of Sociological Theory (3) F,S Leis, Ullman

Prerequisite: Sociology 100. Social thought and historical forces leading to the emergence of sociology; and an exploration of classical sociological theories up to the early twentieth century including such thinkers as Comte, Spencer, Marx, Durkheim and Weber.
*410. Social Ecology (3) S, Even years Harman
Prerequisite: Sociology 100. Analysis of interdependencies of elements of populations, environment, technology and social organization. Examines socioecological relationships currently and in historical perspective, in simple and complex societies. Presentation and analysis of world and U.S. problems in social ecology. A field research project will be required.
*420. Social Stratification (3) F,S Cereseto, Parker, Penalosa, Richmond Prerequisite: Sociology 100. Characteristics and functions of social stratification, especially in the United States. Different theoretical perspectives, how social class affects the opportunity structures, for income, upward mobility and various measures of "the good life"' in America today.
*426. Sociology of Sexual Behavior (3) F,S Dank, Fradkin, Hartman, Turk
The social context of human sexuality; effects of socialization, social class, occupation and religion on sexual attitudes and behavior.
*430. Social Control (3) F,S Massaro, Parker
Prerequisite: Sociology 100. Nature and means of social control. Classification and analysis of different forms of social control. Relative significance of types of social control such as law, religion and the family. Deliberation of noninstitutional controls such as language, ideologies and status groups.
*435. Symbolic Behavior (3) F,S Massaro, Smith
Prerequisite: Sociology 100. Social communication in human behavior. Nature and function of language and related communication symbols in group life. Communication media, such as newspapers, books, radio, television, movies and their function in socialization.
*441. Criminology (3) F,S Dank, Fradkin
Prerequisite: Sociology 100. Incidence and characteristics of criminal behavior physical, economic and emotional causes of antisocial behavior; social effects of crime; probation and parole; prevention programs.
*442. Sociology of Prisons (3) S, Even years Aarons
Prerequisite: Sociology 100. Role of the prison in society as viewed from perspectives ranging from classical to radical; the prison as a total institution inmate-staff interaction and sub-cultures; imprisonment as "assault on the self;" the meaning of riots; the future of American prisons
*445. Ethnic Group Relations (3) F,S Lunceford, Penalosa
Patterns of ethnic group differentiation; world relationships between ethnic groups: a
*450. Marxist Sociology (3) F,S Cereseto, Leis, Richmond
Analysis of human behavior, society and social change from a Marxis perspective.
*455. Methods of Sociological Research (3) F,S Harman, Hubbard,

## Richmond, Smith, Turk, Walker

Prerequisites: Sociology 100, 255 or 210, 355 and one upper division course in sociology. Scientific methods in sociology, their purpose and limitations relationship between theory and research, research design, sampling measurement and social science techniques, reliability and validity.
*456. Contemporary Sociological Theory (3) F,S Leis, Penalosa, Ullman
Prerequisites: Sociology 100, 356 and one other upper division course in sociology. Critical analysis of the contributions of contemporary sociologists Intended primarily for majors in this field.
*459. Social Psychology of Homosexuality (3) F Dank
Prerequisite: Psychology 100 or Sociology 100. Social psychological and sociological analysis of various aspects of homosexual behavior. Exploration of the causes of homosexuality, social processes involved in developing a homosexual identity and the解 students theories and review 427 . (Same course as Psychology 459.)
*462. Medical Sociology (3) F,S Lunceford
In-depth sociological analysis of health care in the United States presented from
 a practical, interdisciplinary viewpoint. national health care, insurance, menta will emphasize topics of malpractice, national education and the physician-patient health, hospi
relationship.

## *464. Sociology of Aging (3) F Harman

Sociological perspective on the aging process, from the middle years through old age. Survey of theoretical perspectives, issues, institutions and research findings on aging. Focus on role and status changes with aging in U.S. Cross-cultural and ethnic differences will be explored. Social analysis of age-related policies and exploration of alternatives. Not open to students with credit in this subject under Sociology 490

## 485. Sociology of Language (3) S Penalosa

Structure and use of language varieties in relation to social interaction, social inequality, social change and nationalism.
*490. Special Topics in Sociology (1-3) F, S Faculty
Topics of special interest in sociology selected for intensive study. Topics will be announced in the Schedule of Classes. May be repeated with different topics to a maximum of 6 units
*495. Internship (1-4) F,S Harman, Smith
Prerequisites: Sociology 100, 142, 335, junior or senior standing, consent of instructor. Supervised field experience in public and private agencies, relating sociological principles to community situations. Designed to provide career-related work experience in both research and applied fields. Students may enroll for $1-4$ units, depending on field assignment and time required. May be repeated for a maximum of six units. (Six-10hours per week field experience.)
499. Directed Studies (1-3) F, S Faculty

Prerequisite: Consent of instructor. Independent study of special topics under supervision of a faculty member. May be repeated to a maximum of 4 units. In exceptional cases, may be repeated to a maximum of six units when approved by the department.

## 656. Seminar in Macro and Grand Sociological Theories (3) $S$ Leis, Parker, Richmond, Ullman

Prerequisites: Sociology 356, 456, consent of instructor. Course designed to provide understanding through in-depth study of a selection of classical and contemporary sociological theories or theorists at the level of "Macro" and "Grand" theory. Will include at least three major approaches or schools such as Weber, Marx, Durkheim, Sorokin, Parsons and structural-functionalism.

696A,B. Seminar in Research Methods (3,3) F,S Harman, Hubbard, Parker Prerequisites: Computer Studies 200, Sociology 255, 455. Advanced study of qualitative and quantitative research design, tools and techniques. A research project is required.

## 697. Directed Research (1-3) F,S Faculty

Prerequisite: Consent of instructor.
698. Thesis (2-6) F,S Faculty

Prerequisite: Consent of instructor. Preparation and completion of thesis.

## Graduate Division

## 620. Seminar in Family (3) S, Even years Faculty

Prerequisites: Six units of upper division sociology including Sociology 320, consent of instructor. Advanced study of the family as a social institution Emphasis is placed on recent research, recent social changes affecting family life, and on family disorganization and reorganization.
625. Seminar in Social Classes (3) S, Odd years Richmond

Prerequisites: Six units of upper division sociology including Sociology 420, consent of instructor. Social differentiation on basis of classes or caste. Origin and interrelationships of classes. Studies of social stratification. Class struggle.
629. Seminar in Social Change (3) F, Even years Richmond

Prerequisites: Six units of upper division sociology, consent of instructor. Study of the theories and evidence of sociocultural change with an emphasis on the development of the social characteristics of urban societies.
635. Seminar in Micro and Middle Range Sociological Theories (3) F Slawski Prerequisites: Sociology $335,356,456$, consent of instructor. Course designed to provide understanding through in-depth study of classical and contemporary sociological theories and theorists at the micro or interactional level as well as at the middle range. Will include at least three major approaches or schools such as Mead, Simmel, Merton, Homans, Blau and Goffman.
647. Seminar in Deviant Behavior (3) $S$ Cereseto, Dank

Prerequisite: Consent of instructor. A sociological analysis of various forms of deviant behavior in society.


## Spanish-Portuguese

Department Chair: Dr. Jack Schmitt
Professors: Cárdenas, DeLong-Tonelli, Donahue, Inostroza, Trinidad.
Associate Professors: Archuleta, Cannon, Schmitt.
Credential Advisers: Dr. Alfonso Archuleta, Dr. Harold L. Cannon
Undergraduate Adviser: Dr. Beverly DeLong-Tonelli
Graduate Adviser: Dr. Daniel Cárdenas
The Department of Spanish and Portuquese offers courses in language literate programs
 bachelor of arts degree in Spanish, master of arts degreanish for the B.A. in liberal studies and the special major for the B.A. degree
the partially fulfil
The department also offers courses which cross-cultural specialist credential, master of arts requirements for the bilingual cross-cultural specialist certificate. The program is also degree in linguistics and Latin American studies certer business, community or designed to meet the needs of those who plan Spanish and/or Portuguese is government employment where knowledge of Spanish and those who wish essential. In addition, the program provides a liberal educatess and of Hispanic to expand their awareness of the communication process arochure
literatures and culture. For certificate programs, see departmentudy leading to the
The Spanish-Portuguese Department offers graded to observe the general master of arts degree in Spanish. The candidall is the specific departmental requirements stated in this Bulletin, as well as requirements and to consult the graduate adviser thanish is the language used in al In all upper division and graduate leve
class discussion and written work. the Graduate Student Handbook of the
Students
Bacher of Arts Degree (code 2-6816)
Bac intermediate Spanish. Students who have completed Lower Division: One year of intermediate Spanish. Stivision courses as soon as sufficient high school Spanish may take
ower division requirements have been met. Upper Division: A minimum of 30 units of upper division courses, which 445 are include Spanish 312, 313, 335,336, 337, 338, 425. Courses 440 and be taken while completing work equired for teacher certification and also strongly recommends ow

Departmental Requirements: One year of a second foreign language is required of all majors.

## Minor in Spanish (code 0-6816)

A minimum of 18 units, at least 15 of which must be upper division and must include Spanish 312,313, and demonstration of oral fluency or 314. All students who plan to minor in Spanish should consult with the department.

## Master of Arts Degree with a Major in Spanish (code 5-6816)

## Prerequisites

1. A bachelor of arts degree in Spanish, or:
2. A bachelor's degree with a minimum of 30 upper division units in Spanish, comparable to those required of a major in Spanish at this University. Deficiencies will be determined by the graduate adviser after consultation with the student and study of transcript records.

## Advancement to Candidacy

1. Approval of a graduate program by the graduate adviser, the Departmental Graduate Committee and the Dean of Graduate Studies
2. The candidate may file for advancement to candidacy after she/he has filed a transcript of credits or a change of objective form and completed the prerequisites. The candidate must file not later than one sem ester or summer session prior to completion of course requirements.

## Requirements for the Master of Arts

1. Completion of a minimum of 30 units of approved upper division and graduate courses with a minimum of 24 units in Spanish.
2. A minimum of 15 units in the 500 and 600 series in Spanish, including Spanish 505 and 696. Spanish 697 (or, in special cases, 698) is required of all candidates.
3. A reading knowledge of French, German, Italian, Latin, Portuguese or Russian. Another language may be substituted for one of the preceding only under special circumstances.
4. A comprehensive examination is required of all candidates. Contact the department office for further information.

## Spanish

## Lower Division

101A-B. Fundamentals of Spanish (4,4) F,S Faculty
Concentration on oral comprehension and speaking.
101A. For those who are beginning the study of Spanish or who have had less than two years of high school Spanish.

101B. Prerequisite: Spanish 101A or two years of high school Spanish. Continuation of Spanish 101A.

201A-B. Intermediate Spanish (4,4) F, S Faculty
Continued development of audio-lingual skills.
201A. Prerequisites: Spanish 101A-B or three years of high school Spanish or equivalent.

201B. Prerequisite: Spanish 201A or four years of high school Spanish or equivalent.

## Upper Division

## 300. Hispanic Literature in Translation (2) Facult

Study of a specific author, generation, genre or work, to be announced each semester in the Schedule of Classes. Such topics as the following may be offered: Federico Garcia Lorca; the Latin American new novel, Unamuno, Ortega y Gasset, Don Quixote. May be repeated with different topics for a maximum of six units. Not applicable to 30 units of upper division work required for the B.A. in Spanish nor the minor in Spanish.
301. Spanish for Classroom Teachers (6) SS Faculty

Fundamentals of spoken Spanish and Hispanic culture in a "total immersion" audio-lingual setting; designed for teachers in districts with a high percentage of Spanish-speaking students. May be repeated once for credit. Applicability to degree and certificate programs very limited. Confer with department chair
312. Advanced Spanish I (3) F, S Faculty

Prerequisite: Spanish 201B or equivalent. Extensive reading of Spanish writings review of grammatical principles and a general consolidation of the four language skills: reading, comprehension, composition and conversation
313. Advanced Spanish II (3) F, S Faculty

Prerequisite: Spanish 312 or equivalent. Sequel to Spanish 312, with continuing emphasis on extensive reading of Spanish texts and periodicals, regular composition work based on these readings, and the development of increased mastery of the spoken language through student discussion of the readings.

## 314. Spanish Conversation (1) F,S Faculty

Prerequisite. Upper division standing in Spanish. Functional course in Pa pecific, everyday situations and to provide help to those who intend to speak Spanish in travel, work or classroom instruction (Activity 3 hours.)

## 335. Introduction to Spanish Literature <br> (3) F,S Cárdenas, DeLong-Tonelli,

 TrinidadPrerequisite: Upper division standing in Spanish
Spain's literature from the "Poem of Mio Cid" to 1700

## 336. Introduction to Spanish Literature II <br> (3) F,S Cannon, Cárdenas,

DeLong-Tonelli, Trinidad 1700 to the present time.
Prerequisite: Upper division sta
337. Introduction to Spanish American Literature I (3) F,S Archuleta,

Donahue, Inostroza, Schmitt
Prerequisite: Upper division standing in Spanish. Survey of the outstanding chronicles of the Conquest and the influence of Spanish culture in the formation of chronicles of the Colonization of Latin America and its the New World. Covers the
struggle for independence.
338. Introduction to Spanish American Literature II (3) F,S Archuleta,

Donahue, Inostroza, Schmitt Prerequisite: Upper division stand independence to the present time
*410. Introduction to Literary Analysis (3) S Cárdenas, DeLong-Tonelli, Inostroza
Prerequisite: One 300 level course in Spanish or consent of instructor. of literature as a work of art. Different levels
structurere as a work of literary appreciation
412. Art of Translation (3) $S$ Faculty

Prerequisites: Spanish 313 with a grade of B or better, consent of instructor Seminar in lexical, syntactical, stylistic, cultural problems of translation, Spanish to English, English to Spanish. Analysis of selected translated texts. Practice in effective translating.
*425. Spanish Phonetics and Phonology (3) F,S Cárdenas, Trinidad Prerequisites: Spanish 312 and 313 or consent of instructor. Articulatory phonetics as a means to form native Spanish pronunciation habits with emphasis upon the difficulties encountered by speakers of American English.
*426. Spanish Morphology and Syntax (3) F Cárdenas, Trinidad Prerequisite: Spanish 425 or consent of instructor. Morphemic and syntagmatic analysis of Spanish; introduction to transformational grammar
*427. Contrastive Analysis of Spanish and English (3) S Cárdenas, Trinidad Prerequisite: Spanish 426 or consent of instructor. Study of the scientifically and empirically known points of conflict and differences between the two languages.
*440. Spanish Civilization (3) $S$ Trinidad
Prerequisite: Upper division standing in Spanish or consent of instructor Characteristic features of Spanish culture with special attention to the various institutions, economy, social organization, cultural configurations, and the ways of thinking.
*445. Latin American Civilization (3) F Archuleta, Donahue, Schmitt Prerequisite: Upper division standing in Spanish or consent of instructor Analysis of main currents in Latin American civilization.
*450. Spanish American Novell (3) F Archuleta, Inostroza
Prerequisite: Spanish 338 or consent of instructor. Study of the Spanish American novel from its origin to 1930. Not open to students with credit in Spanish 455.
*451. Spanish American Novel II (3) S Archuleta, Inostroza, Schmitt
Prerequisite: Spanish 338 or consent of instructor. Study of the Spanish American novel from 1930 to the present. Not open to students with credit in Spanish 455.
*454. Modern Spanish Theatre (3) F DeLong-Tonelli, Donahue, Trinidad Prerequisite: Spanish 336 or consent of instructor. Spanish theatre from Benavente to the present.
*456. Nineteenth Century Spanish Novel (3) F Cannon, Donahue, Trinidad Prerequisite: Spanish 336 or consent of instructor. Ranking nineteeth century Spanish novelists.
*457A. Spanish American Short Story (3) S Donahue, Schmitt Prerequisite: Spanish 338 or consent of instructor.
*457B. Spanish American Essay (3) S Inostroza, Schmitt Prerequisite: Spanish 338 or consent of instructor.
*459. Twentieth Century Spanish Novel (3) S DeLong-Tonelli, Donahue, Trinidad
Prerequisite: Spanish 336 or consent of instructor. Representative twentieth century novelists.
*474. The Drama of the Golden Century (3) F, odd years Trinidad
Prerequisite: Spanish 335 or consent of instructor. Spanish drama from Juan de Encina to Caldero/n dela Barca
*499. Independent Study (1-3) F, S Faculty
Prerequisites: Consent of instructor and department chairperson. Individual projects or directed readings with a professor of the student's choice. May be repeated to a maximum of six units.

## Graduate Division

505. History of the Spanish Language (3) F Cárdenas, Trinidad

Prerequisite: One course in Spanish linguistics or consent of instructor. Analysis of written and spoken Spanish from its inception through its current use in the Hispanic world. Knowledge of Latin strongly recommended.
515. Romance Linguistics (3) S, oddyears Cárdenas, Inostroza, Trinidad

Prerequisite: Spanish 505 or equivalent. Methods used in Romance philology and linguistics; origin and evolution of Romance languages; comparative characteristics of standard Romance languages. Not open to students with credit in Spanish 415.
520. Modernismo in Spanish American Literature (3) F, odd years Inostroza Origin and development of the Modernista Movement in poetry and prose during the period 1880-1920.
521. Contemporary Spanish American Poetry (3) F Inostroza

Study of representative Spanish American poets from 1920 to the present.
535. Spanish Medieval Literature (3) S, even years Cárdenas, Trinidad Prerequisite: Spanish 505. Medieval literature from the recently discovered "uwashahas" (Iyric poetry) to the Golden Century
538. Spanish Poetry of the Golden Age (3) F DeLong-Tonelli

Study of traditional ballads, Renaissance and Baroque poetry with emphasis on Garcilaso, Gongora and other poets
540. Spanish American Drama (3) S Donahue, Inostroza Analysis of major works of ranking Spanish American playwrights.
555. Mexican Novel (3) S, even years Archuleta, Inostroza Intensive study of the major Mexican novelists from Lizardi to Carlos Fuentes.
585. Contemporary Spanish Poetry (3) S DeLong-Tonelli, Trinidad Study of the most representative contemporary Spanish poets.
639. Seminar in Hispanic Studies (3) S Faculty

Concentration on a specific literary or linguistic problem. May be repeated once with a different topic.
696. Bibliographical Methods of Research (3) F Faculty

Introduction to methods of research, scholarly writing.
697. Directed Research (1-3) F,S Faculty Prerequisites. Spanish 696, consent of department chair the guidance of a faculty member.
698. Thesis (2-4) F,S Faculty

Prerequisites: Spanish 696, consent of Graduate chair. Planning, preparation and completion of for the M.A. degree.
degree Does not count toward 30 units required for the M.A.degree.
degree. Does not count toward 30 uni

## Portuguese

## Lower Division

101A-B. Fundamentals of Portuguese (4,4) F,S Archuleta, Schmitt
Introduction to grammar, reading, pronunciation, writing and conversation. 101A is for those who are beginning the study of Portuguese or who have had less than two years of high school Portuguese

101B. Prerequisite: Portuguese 101A or two years of high school Portuguese. Continuation of 101A

## Special Major

(INTERDISCIPLIN ARY STUDIES)

## Director: Dr. William Svec.

## Special Major for the Bachelor of Arts Degree (code 2-0405)

The special major for the bachelor of arts degree provides an opportunity for解 and professional goals are not accommodated by standard解 er majors. The special major consis a means of bypassing normal graduation epartments. It is not intendich students may graduate who fail to complete the puirements or a means by which studed. A candidate must apply for approval of a egree major in which they are enrolle (more than 30 units) special major when at least one full year of academ requirements. Each special emains to be completed to meet minimum degree rea

## Procedures

Students requesting a special major must:

1. Prepare a written statement giving their reasons for and explaining why they in terms of their academic and professionard major,
cannot meet these goals through a stand review by the Special Major Director
2. Present the proposed program for initary forms for the following steps.
from whom they will obtain the necessalty sponsor from each of the two basic
3. Secure the signed agreement a areas and the Special Major Dioc
committee for the special major. Major Committee and the Special Major
4. In consultation with the Special Major Commich will constitute the special Director, develop a specific list of course major program.
5. Secure the signed approval ordan in order to give the areas from which the special major courses admission equivalent to that of special major student priority for court.
students majoring in the department.
6. The completed programs must be approved and must be filed in the Academic and Vice President for Academic Office Advising Center and the Records Office

## Requirements

The special major consists of not less than 36 units, of which at least 24 units must be upper division.
A minimum of 12 upper division units shall be taken in each of the two mepartments. Exceptions to this requirement may be made only in cases epartments. Exceptions than where an interdisciplinary program
two departments and such a program is constituted on a cohesive core of courses leading to a specific professional or academic goal
3. Units applied to satisfy General Education requirements may not be counted toward the Special Major.
Application forms for the special major are available in the Academic Advising Center, Library E-106. The director is Dr. William Svec, Library E-106

## Master of Arts Degree in a Special Major (code 5-0405)

A student may submit a proposal for a degree program leading to the master of arts degree in a special major (interdisciplinary studies) when special needs and interests cannot adequately be met by any of the existing graduate degree programs offered by the University. The degree program is administered by the Dean of Graduate Studies. Procedural guidelines and forms are available in the Academic Advising Center, Library E-106.

A graduate committee shall be established by the student and appropriate aculty in consultation with the Special Major Adviser. The committee shall consist of not less than three faculty and shall be representative, insofar as possible, of the areas in which the student intends to pursue the degree. The Dean of Graduate Studies, or his designee, shall serve on the committee as an ex officio member.

The proposed program must not be substantially available within any existing graduate programs offered at CSULB and must have adequate focus and coherence in cognate disciplines. All course work shall be in support of the student's major objective and shall be selected in consultation with the student's committee and approved by the committee, the Special Major Adviser and by the Dean of Graduate Studies.

## Prerequisites

1. A bachelor's degree.
2. Twenty-four units of preparatory (prerequisite) course work, selected in consultation with the student's graduate committee. This work must have been completed by the student with a minimum 3.0 g.p.a. after attaining junior standing at an accredited college or university, or be completed with a minimum 3.0 g.p.a. prior to advancement to candidacy for the degree.

## Advancement to Candidacy

To satisfy the general requirements of the University and the special requirements for the master of arts degree in a special major, the student must comply with the following procedures:

1. Prepare for and convene a meeting of the following persons: (a) the chair of the student's graduate committee, (b) the graduate adviser of the chair's department, (c) all other members of the graduate committee, (d) the Director of Graduate Studies of the Schools of Applied Arts and Sciences, Business Administration, Education or Engineering, if their schools are involved, and (e) the Dean of Graduate Studies or designee.
2. By consultation with and verification of the members of the committee establish that: (a) any unique guidelines of the degree issuing department or school (the department of the student's graduate committee chair) have been complied with, (b) that all preparatory (prerequisite) course work has been satisfactorily completed and that the "Prerequisite Check Sheet for the Master of Arts Degree in Special Major" reflects this, (c) that all transcripts have been filed with the Admissions Office and that a complete set of them are available to the committee for their inspection, (d) that the "Statement of Rationale" is complete and acceptable, and (e) that the "Student Program for the Master of Arts Degree in Special Major" conforms to the University regulations and the "Requirements for the Master of Arts Degree in a Special Major."
3. File the following forms with the Special Major Adviser: "Statement of Rationale," "Prerequisite" form, "Program" form with any attachments, and

## a "Change of Objective" form.

## Requirements for the Master of Arts

Student program forms are provided by the Academic Advising Center, Library E106. Prepare a program conforming to University regulations. Requirements for the degree are as follows:

1. The special major degree program must include not less than 30 upper division and graduate level units approved by the student's committee, graduate adviser of the committee chair's department and the Dean of Graduate Studies
No less than 15 units shall be in the 500/600 level series
b. No more than six units in any one or combination of:
(1) Approved CSULB extension. No extension class credit earned at another college may be used to satisfy degree requirements. Extension credit may not be used to reduce the minimum units required in the program, nor may excess grade points earned in extension classes be used to offset a grade point deficiency in the total graduate program.
(2) Transfer credit.

A thesis or comprehensive examination, will be completed in partial fulfillment of the requirements for the master of arts degree in the special major. The selection of the thesis or comprehensive option will be made by the graduate committee in consultation with the student.
3. Students electing the thesis shall enroll for thesis credit in the department of the thesis committee chair.
A favorable vote of the faculty of the department of the thesis or comprehensive chair and by the graduate advisers in the departments a degree may be conferred.

## Speech Communication

## Department Chair: Dr. Richard E. Porter

Emeriti: Dale D. Drum, Joseph A. Wagner
Professors: Buck, Cain, Castleberry, Hauth, Hays, Howe, Jenson, Loganbill, Powell Shanks, Skriletz, Wills.
Associate Professors: Anatol, Applbaum, Briggs, Healy, Porter, Rogers, Yousef.
Credential Advisers: Dr. Nancy Briggs, Dr. Dorothy J. Skriletz.
Undergraduate Adviser: Dr. Richard E. Porter

## Graduate Adviser: Dr Earl R Cain

The Department of Speech Communication serves four general functions. First, it provides a program for the student planning a career in rhetoric-public address and communication theory. Second, the department provides a variety of general and communication the curriculum designed to give all students broad ducation cours as it provides a number of courses which service experiences in the liberal arts. Thirsech Communication Department. Fourth, it the needs of majors outside the Speech Cong credential candidates under the Ryann provides a single subject major for teaching credential Act.

To fulfill its first function, the department offers specialized curriculum to students who are planning to utilize a comprenension
and practice in business, professional fields, or education.
practice in business, profion, courses are offered to satisfy both the category Basic Communication requirement in general educa
general education electives for cultural enrichment. which meet the needs of
To fulfill its third function, courses are enriched by specialized instruction in students whose major
peech fulfill its fourth function an option is presented for students wishing a single
To fulfill its fourth function, an optial under the Ryan Act. This option provides subject major for a teaching credenication and an English credential for teaching both a B.A. major in speech
in the secondary schools.

## Speech Proficiency Assessment

Communication 271, 331,333,335,352, 355 and 358 Students enrolledin Speech com proficiency as part of the course. All speech at CSULB will be tested for speech prange for an assessment for speech seeking a teaching credential must arrasmentinformation is published in the proficiency through the

## Master of Arts Degree in Speech Communication

The Department of Speech Communication offers graduate study leading to the master of arts degree in speech communication. A basic core of communication studies, rhetorical studies and research methods is required, but there also is opportunity for additional work in small group communication, interpretive communication of literature, reader's theatre, communication education or forensics according to special interests of students

Several teaching assistant positions in speech communication are available. Interested students should make application to the department chair.

## Major in Speech Communication for the Bachelor of Arts Degree

## General Speech Option (code 2-6841)

Lower Division: Six units required from Speech Communication 130 and 246 or 271.
Upper Division: (a) Departmental Core, 12 units required from: Speech Communication 435, 440, 446 and 448; (b) six units required from Speech Communication $331,332,333,335,338$, or 344 ; (c) six units required from Speech Communication 432, 434, 447, 449 or 451 ; (d) six units required from Speech Communication 433, 436, 437, or 450; (e) three units required from Speech Communication 490 or any upper division speech communication course excluding 499, selected in consultation with an adviser.

## Communication Theory Option (code 2-6839)

Lower Division: Six units required from Speech Communication 130 or 132 and 246. Upper Division: (a) Departmental Core, 12 units required from Speech Communication 435, 440, 446 and 448; (b) six units required from Speech Communication 332, 334, 335 or 344; (c) 12 units required from Speech Communication 447 (required), nine units from Speech Communication 432, 434, 449 or 451 ; (d) three units required from Speech Communication 490 or any upper division speech communication course, excluding 499, selected in consultation with an adviser.

## Rhetorical Studies Option (code 2-6840)

Lower Division: Six units required from Speech Communication 130, 131 or 133 and either 246 or 271.
Upper Division: (a) Departmental Core, 12 units required from Speech Communication 435, 440, 446, 448; (b) six units required from Speech Communication 331, 332, 333,335 or 338 ; (c) six units required from Speech Communication 433, 436, 437; (d) three units required from Speech Communication 449, 450, or 490; (e) three units required from Speech Communication 490 or any upper division speech communication course excluding 499, selected in consultation with an adviser.

## Teaching Option (code 2-6849)

Lower Division: Speech Communication 246 or 271.
Upper Division: (a) Nine units chosen from Speech Communication 331, 332, 333 and 335; (b) three units chosen from Speech Communication 435, 436, 440; (c) three units chosen from Speech Communication 446, 448, 449; (d) three units from Speech Communication 450; (e) three units from English 184; (f) three courses from English 250A, 250B, 370A, 370B; (g) three units from English 310; (h) four units from English 320, 325; (i) three units from Comparative Literature 232 or English 482; (j) three units from Speech Communication 355.

## Minor in Speech Communication (code 0-6841)

A minimum of 21 units in speech communication, of which at least 15 must be upper division, chosen in consultation with a faculty member of the department.

## Master of Arts Degree with a Major in Speech Communication (code 5-6841)

## Prerequisites

1. A bachelor's degree with a major in speech communication to include Speech Communication 435, 440, 446 and 448 or their equivalents, or.
2. A bachelor's degree with 24 units of upper division work in speech communication, including the courses listed above or their equivalents. Deficiencies may be made up concurrently during the first two semesters of graduate work.
3. Graduate students must consult with the departmental graduate adviser for information concerning procedures and requirements for approval of their course of study prior to enrolling in their graduate program.

## Advancement to Candidacy

1. Removal of all undergraduate deficiencies
2. Completion of at least six units of 500 and/or 600 level courses including 696 with a minimum grade point average of 3.0 .
3. A graduate program approved by the student's faculty adviser, Graduate Committee and department chair.

## Requirements for the Master of Arts

1. A minimum of 30 units in upper division and graduate courses approved by the student's faculty adviser and the Department Graduate Committee to include:
a. A minimum of 24 units of upper division and graduate work in speech communication;
b. Six units of electives in any approved area, with the exce
student teaching and special methods courses include a minimum of 21
2. The above 24 units of speech communication must include a minimum of 21
units of graduate work in the 500 and 600 series composed of the following:
a. Speech Communication 696 to be completed as early as
graduate program and prior 50,546 ; one course selected from Speech
b. Speech Communication 540, 54, one course selected from Speech Communication 639 or $640 A$
Communication $646 A, B, C, D, F$. , 600 level course work approved by the
c. Nine elective units of 400 , Only student's faculty adviser and the Departmented from among 400 series three of these nine units may be selected from among 400 series courses.
d. Speech Communication 698 (4 units) if the thesis option is elected.
e. Speech Communication 697 (1 unit) if the comprehensive examination is elected.
3. Satisfactory completion of a thesis or comprehensive written examination.

## Lower Division

130. Essentials of Public Speaking (3) F,S Faculty and persuade. Logical Composition and delivery of speeches to inform organization is stressed.
131. Essentials of Argumentation (3) F, S Faculty Theory and practice of argumaluative techniques.

## 132. Small Group Discussion (3) F,S Faculty

Basic principles and techniques of discussion. Relationship of discussion to democratic processes and contemporary society including a study and practice of critical thinking and problem-solving techniques in various group discussion settings.

## 133. Elements of Oral Interpretation (3) F,S Faculty

Theory and practice in the oral interpretation of prose and poetry.
200. Nonverbal Communication (3) F,S Hays

Basic characteristics of the nonverbal elements of human communication in the oral communication setting.
236. Forensic Activity (1) F,S Howe

Prerequisite: Consent of instructor. Participation in intercollegiate forensic activities. Any student who expects to participate in such activities during the semester should enroll. The student's specific assignments will be determined in consultation with the staff. Maximum credit, four units
246. Interpersonal Communication (3) F,S Hays

Basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.
271. Voice and Articulation (3) F,S Hauth, Healy, Loganbill, Wills

Physiological and anatomical bases of normal voice production with intensive training in articulation, pronunciation, projection and related oral skills.

## Upper Division

303. Communication for Accounting and Finance (3) F,S Faculty

Prerequisites: English 100 or equivalent; Speech Communication 130 or 132 or 246 or equivalent; upper division standing; open only to accounting and finance majors. Oral and written communication principles and practice in the accounting and finance professions.

## 331. Argumentation and Debate (3) F,S Howe, Rogers

Techniques of argumentation and their application to debate; logic, reasoning and fallacies of reasoning; experience in various forms of formal argument and debate; techniques of debate program administration.
332. Small Group Communication (3) F,S Faculty

Emphasizes development of communication skills for participation in small group problem-solving interaction; consideration of group structure and dynamics as they relate to small group communication participation.

## 333. Advanced Oral Interpretation (3) F,S Buck, Loganbill, Shanks

Derivation of meaning in various literary forms and its oral interpretation to specific audiences.
334. Business and Professional Speech (3) F,S Healy

Application of principles of speech in basic business, industrial and professiona forms and contexts; techniques of preparation, presentation and evaluation.
335. Persuasive Speaking (3) F,S Faculty

Audience behavior; theories of motivation, attention, interest; an understanding and analysis of types of audiences with methods of audience adaptation.
336. Forensic Activity (1) F,S Howe

Prerequisite: Consent of instructor. Participation in intercollegiate forensic activities. Any student who expects to participate in such activities during the semester should enroll. Student's specific assignments will be determined in consultation with the staff. Maximum credit, four units.

## 337. Conference Management (3) F,S Castleberry, Shanks

Organization and direction of professional, business and political conferences or onsentions; program simulation; leadership of and participation in decision making and parliamentary sessions.
338. Ensemble Interpretive Reading (3) S Buck, Loganbill, Shanks

Programming and presentation of prose, poetry and drama by an ensemble of readers. Emphasis is placed on experimental presentations and on the development of analytical insight into literary forms.
344. Theory and Techniques of Interviewing (3) F,S Briggs, Hays, Jenson,

Rogers, Skriletz, Yousef Theory and techniques of oral communication in the process ond persuasive Practical application in employment, information gathering and persuasive interviews.
346. Group Facilitation in Speech Communication (3) F,S Hays

Prerequisite: Con practice of group facilitation ncludes supervised experience in group facilitation. (Lecture 1 hour, activity 4 hours.)
352. Story Telling (3) F,S Faculty

Cultural heritage in story telling; analysis of story types for oral presentation; techniques of preparation, presentation and listening.
355. Forms of Speech Communication (3) F,S Hauth, Skriletz

Principles of human and interpersonal communication in public speaking, oral reading, group discussion and their application to the classroom. Fulfills the oral communication requirement for the English Secondary Education credential.
358. Speech Arts for Children (3) F,S Briggs, Wills

Use of creative dramatics, improvisations, puppetry, choral speech, radio, elevision and fluency, responsiveness and imagination in children. Integration of speech arts activities with curricular subjects will be stressed. Opportunity to apply the theories in actual situations.
*432. Small Group Communication Leadership (3) F Anatol Emphasizes development of leadership skills in small group problemsories of communication environments; leadership theories, to leadership in small group problem-solving
*433. Trends in Oral Interpretation (3) F Loganbill development of oral Trends and issues in the theoretical
interpretation as applied to current times.
*434. Communication in the Organizational Setting (3) F,S Anatol, Hays,
Jenson, Yousef
Communication problems in the organizational sems
organizational difficulties with communication problems
*435. Critical Dimensions of Oral Communication (3) F Cain, Hauth, Powell
An analion of investigation into examples of
An analysis and evaluation
political, religious, social and com 439
*436. Communication Strategies of American Speakers (3) F Hauth, Powell, Rogers
Comparison and contrast of famous American speakers and their techniques effects and environments from the colonial period to present.

## *437. Communication Strategies of European Speakers (3) F Briggs, Buck Castleberry, Howe, Wills

Comparison and contrast of famous European speakers and their techniques, effects and environments from Demosthenes and Cicero to Churchill and Hitler.
*440. Survey of Rhetorical Theory (3) F,S Buck, Cain, Castleberry Major rhetorical contributions from the Classical to the Modern Period.
*446. Communication Theory (3) F, S Hays, Jenson, Porter, Yousef Conceptual frameworks in communication theory; application of learning, motivation, perception and related theories to the study of speech.
*447. Measurement in Communication Theory (3) F,S Jenson,Porter Application of the scientific method to the study of speech; explanation of the role statistics, experimental and descriptive methodologies play in speech research.
*448. Language and Symbolic Processes (3) F,S Briggs, Hauth, Jenson General semantics, linguistics and psycholinguistics in the analysis of oral language behavior; nature of language and meaning, including symbolism, abstraction, categorizing and distortion.

## *449. Studies in Oral Persuasion and Attitude Change (3) F,S Anatol, Jenson, Porter, Yousef

Attitude formation and change through oral communication; factors in persuasion; problems in determining the effects of persuasive messages; source credibility, message variables, and personality factors in the process of persuasion.
*450. Comparative Theories of Speech Communication (3) F Skriletz
Prerequisite: Major or minor in speech communication or consent of instructor. History, philosophy and scope of the discipline of speech communication.
*451. Intercultural Communication (3) S Porter, Yousef
Study of the relationship between culture and communication with emphasis given to social, psychological, linguistic and nonverbal variables; problems in the practice of intercultural communication.
490. Special Topics in Speech Communication (1-3) F, S Faculty

Topics of current interest selected for intensive study in speech communication. May be repeated with different topics for a maximum of six units. Topics will be announced in the Schedule of Classes.
499. Special Studies in Speech (1-3) F, S Faculty

Open to students with upper division or graduate standing and consent of instructor. Individualized laboratory or library research selected in consultation with instructor. Written report of the research is required. Not acceptable for graduate credit toward the master's degree.

## Graduate Division

531. Administering the Forensic Program (3) S Howe

Prerequisite: Consent of instructor. Principles of constructing and administering a forensic program, including recruiting, squad direction, budgeting, tournament policies and current literature on forensic direction. Not open to students with credit in Speech Communication 431.
540. Modern Rhetorical Theory (3) F Cain, Hauth

Prerequisite: Consent of instructor. The rhetorical theory of British and American rhetoricians since 1750.

## 546. Issues in Communication Studies (3) $S$ Jenson, Porter

Prerequisite: Consent of instructor.Investigation and evaluation of contemporary research dealing with intra-personal and sociocultural communication systems; nonverbal communications; language and symbolic systems; persuasion and attitude change; contributions to human communication theory from other disciplines; and current trends and directions in communication research.
590. Special Topics in Speech Communication (3) F Faculty

Prerequisite: Consent of instructor. Investigation of topics of current interes d oncern to stud announced in the Schedule of Classes. May be repeated for credit with different topics, but no more than six units may count toward the master's degree in speech communication.
632. Seminar in Small Group Communication (3) $S$ Anatol

Prerequisite: Consent of instructor. Research in small group discussion.
633. Seminar in Communicative Interpretation (3) F Loganbill, Shanks

Prerequisite: Consent of instructor. Theories of communicative interpretation of iterature, with emphasis upon the theory and evaluation of oral presentation of literature as an art form and a pedagogical instrument
639. Seminar in Rhetorical Theory and Criticism (3) S Cain, Hauth, Powell

Prerequisite: Consent of instructor. Presentation and discussion of advanced esearch in the principal concepts and issues of rhetorical theory and criticism
640. Seminar in Rhetorical Studies (3) S Faculty discussion of advanced Prerequisite: Consent of instructor. Presentation and discussic address, (b)British concepts and research in the following areas: (a)ablic address. Offered areas will be and European public address, and (c)American pubic ated for credit but is limited to nnounced in the Schedule of Classes. May be repeated three units in any one area and to six units toward the master's degree
646. Seminar in Communication Studies (3) F,S Faculty

Prerequisite: Consent of instructor. Presentation and discussion of advanced esearch in the following areas: (a) persuasion and attitude change, (b) organizational communication, (c) intercultural communication, (d) nonverbal communication, (f) language and symbolic processes. Offered areas will be designated in the Schedule of Classes. May be repeated for credit but is limited to three units in any one area and to six units toward the master's degree
647. Seminar in Experimental Methodologies (3) $S$ Jenson, Porter

Prerequisite: Speech Communication 447 or consent of instructor. Advanced work in scientific approaches to the study of speech communication; the problems of measurement, quantification, and measuring instruments; theory and design of scientific research, and analysis of findings.
650. Seminar in Communication Education (3) S Hays, Skriletz

Prerequisite: Consent of instructor. Advanced studies in historical and contemporary theories and problems in speech communication pedagogy.
696. Research Methods (3) F,S Cain, Porter, Skriletz
 Methodolo problems and library research, location and
research techniques of a descriptive, historical and experimental nature.
697. Directed Research (1-3) F,S Faculty

Prerequisites: Approval of department graduate committee, consent of instructor. Directed research leading to the definition and discussion of a selected problem or issue in speech communication and the presentation of research results in a formal paper submitted to the department. (Required of all candidates for the master's degree not electing a thesis option.)

## 698. Thesis (2-4) F,S Faculty

Prerequisites: Speech Communication 696, consent of the department Preparation, completion and submission of an acceptable thesis in partial fulfillment of the requirements for the master's degree.

## Theatre Arts

## Department Chair: Mr. Ralph W. Duckwall

## Emeritus: Edward A. Wright.

Professors: Camburn, Duckwall, Green, Kahan, Lyman, MacArthur, Shoup, Stiver, Watts.
Associate Professors: Appel, Bailor, Eggers, Gibson, Rankin, Rugg, Smith, Skalka.

## Assistant Professors: Avcollie, Cox.

Undergraduate Advising Coordinator: Mr. Ralph W. Duckwall.

## Graduate Adviser: Dr. Jerry R. Bailor.

The Department of Theatre Arts offers three basic programs leading to the chelorfore acting/directing) technical theatre (scenery/costumelighting design) and acting/directing), technical reatill provide a background for the master of arts degree in theatre arts which, in turn, is the basis for a junior college credential and other professional objectives.
This flexibility of program planning in theatre arts has been organized to serve
This flexibility of program planning in theatre arts has student needs in tiree principal areas: (1) Enrichmens and insights derived from background through the development of apprecian electives. (2) Development of theatre arts courses taken as general education lifors satisfactions as an interests and skills that will offer the student of director, technical director, avocational outlet. (3) Preparation for the professions of direct recreational theatre, scene designer and performer in the cond professional theatre. Several course children's theatre, educational theatic literature are available jointly with the offerings in theatre and dramatic Comparative Literature Department. These courses cove literature.
drama from both the viewpoint of theatre and drat without credit in the departmental
All majors are required to participate with or wie, majors enrolled in any acting production program each semester. Furthermore, majors enrate in departmental course are expected to be available, try out anpected to accept any role in which productions in that semester. The student is exp approval from their advisers before he/she is cast. Majors are also expected to seek approw which lies outside of the making any commitment to a
epartmental academic atmosphere. as extensive library resources available for
The Department of Theatre Arts has extensivena Playhouse, a collection students including the entire library of books. The rare book department of consisting of approximately 5,400 scripts and books use rare costume and scenic the University Library houses for departmials, period theatrical posters and rare designs, outstanding Oriental theatre ma 1,400 authentic period costumes including manuscripts. Also, a compilation of over 1,400 auth
part of the Pasadena Playhouse collection is available for student study and demonstration.

The W. David Sievers Memorial Scholarships in acting, named for the first faculty member of the theatre program, are awarded annually to new students who exhibit potential in the field of performance. Awards consist of a modest sum and are determined through competitive audition judged by faculty and fellow students. In addition, the Fine Arts Affiliates of the University and the Dramatic Allied Arts Guild of Long Beach provide for monetary awards to qualified students in all areas of theatre. For further information contact the Scholarship Committee of the Department of Theatre Arts

The Theatre Arts Department holds membership in the National Association of Schools of Theatre. The bachelor of arts degree with a major in theatre arts is accredited by the association.

The Department of Theatre Arts offers graduate study leading to the master of arts degree. The candidate is urged to observe the general requirements stated in this Bulletin, as well as the specific departmental requirements stated here and more fully, in the Department Handbook, available upon request from the depart ment.

A limited number of graduate assistantships are available. The graduate assistant works closely with a member of the graduate faculty, but is not responsible for instruction.

There are funds available for qualified persons who wish to act as departmental readers, assisting faculty members with papers, library orders, bibliographies, etc.

Applications for these positions are available from the departm ent office.

## Major in Theatre Arts for the Bachelor of Arts Degree

The theatre arts core is required of all majors regardless of option.
Lower Division: Theatre Arts 114, 242, 244, 246, 248.
Upper Division: Theatre Arts 321, 322, 346, 374, 476. Theatre Arts 010 (no unit credit) is required each semester of enrollment.
No more than eight units of theatre arts activity (cast and/or crew) will apply toward degree requirements. Crew requirements for all majors: One major running crew assignment in residence in each of the areas of costume, make-up, stagecraft and lighting, to be satisfactorily completed with or without credit during the semester following completion of the related course. Students with transfer credit in those related courses must fulfill the same running crew requirements, with or without credit, within the first three semestars of matriculation into the University.

## Option in Performance: Acting/Directing (code 2-5847)

Theatre Arts $214,216 \mathrm{~A}$ or B or 316A or B, 426, and 16 units approved from Theatre Arts $310 A, B, 312,318$ for up to six units, $324,325,331$ for up to six units, $352,361,363,375,380,414,416,431,432,443,452,459 A, B, 470 A, B, 474,490,498$.

## Option in Technical: Scenery/Costume/Lighting Design (code 2-5848)

Theatre Arts $341,444,446,448$ and 12 units approved from Theatre Arts 342, 347, 440A, B, 443, 444, 445, 447, 470A, 470B, 490, 498.

## Option in Children's Theatre (code 2-5845)

Theatre Arts $352,353,356,358,452,459 A, B$ and seven units of electives.

## Master of Arts Degree with a Major in Theatre Arts (code 5-5844)

Prerequisites

1. A bachelor's degree with a major in theatre arts, or:
2. A bachelor's degree with 24 units of upper division work in theatre arts, in cluding courses comparable to those required at this University.
Each student applying for admission to a graduate degree program in theatre arts must initiate, in the department office, a request to receive a departmental
valuation, based upon diagnostic examination and an analysis of official un dergraduate transcripts to determine any deficiencies and all areas which must be strengthened by the graduate program.

## Advancement to Candidacy

1. Satisfy the general University requirements.
2. Remove all undergraduate deficiencies as determined by the departmental evaluation and/or the Dean of Graduate Studies
3. Submit a program for approval by the student's departmental faculty adviser the department chair, the graduate adviser and the Dean of Graduate Studies.

## Requirements for the Master of Arts

1. A minimum of 30 units beyond the bachelor's degree in approved upper division and graduate courses, including:
a. 18-24 units in theatre arts, of which at least 15 units must be in the 500 and/or 600 series completed at this University. Courses required include Theatre Arts 696, or equivalent, and Theatre Arts 698. The graduate student also will include specialized studies and/or course work in dramatic theory and criticism and theatre history. (Determination of the specific courses to be made by the Theatre Arts Graduate Committee and approved by the Theatre Arts Graduate Adviser.)
6-12 approved units outside of theatre arts. (No more than six units may be in education. Student teaching and special methods courses will not apply.)
The student has the choice of selecting one of three options to satisfy the degree requirement: (1) an area of specialization and a research thesis, (2) an area of specialization and a creative project, or (3) general competence in theatre arts and a comprehensive examination. Each student will be evaluated after 15 units of graduate work to determine whether she/he may continue in the option. If the graduate student or the Evaluating Committee should wish to change the option for any reason, the change will be made following this 15 -unit evaluation. Following option approval, the student is expected to enroil for two Theatre Arts 698 each semester until sity. Maximum credit acceptabimum credit is two units. is four units; for option (3) maximum credit is two units

## Lower Division

10. Theatre Arts Showcase (0) F,S Faculty Participation in weekly programs dealing
Required of theatre arts majors each semester
110A,B. Theatre Arts Activity-Cast (1,1) F, S Faculty to be cast in either Participation in acting; open to students who expect to ber cast assignment or afternoon or evening
equivalent required.
11. Stage Diction (3) F,S Faculty

Theory and practice in developing comm
113. Introduction to Acting (3) F,S Faculty

Review of actors and acting, past and presonality projection. Open only to nontheatre arts majors
114. Fundamentals of Acting (3) F Faculty

Development and preparation of the actor's instrument:
Exercises in relaxation, sensory work, motivations and relationships are utilized
122. Appreciation of Theatre Arts (3) F,S Eggers, Rankin

Appreciation and understanding of the arts of the theatre for the non-drama major; standards for critical evaluation of contemporary theatre including stage, screen and TV; lecture, discussion, field trips and written critiques; not open to students with credit in Theatre Arts 124.

## 24. Introduction to World Theatre and Drama (3) F,S Lyman, Stiver

Introduction to all aspects of theatre, including criticism, dramatic literature, movements, themes, historical background and theatrical production from different parts of the world. (Same course as Comparative Literature 124.)

140A,B. Theatre Arts Activity-Crew
$(1,1) \quad F, S$ Faculty
Participation in technical play production activities of either afternoon or evening University-sponsored productions; specific assignments determined at initial meeting; 45 hours minimum participation time plus major crew assignment or equivalent required.
210A,B. Theatre Arts Activity-Cast (1,1) F,S Faculty
Prerequisite: Sophomore class standing. Participation in acting; open to students who expect to be cast in either afternoon or evening University-sponsored productions; major cast assignment or equivalent required.

## 214. Intermediate Acting (3) F,S Faculty

Prerequisite: Theatre Arts 112, 114. Introduction to scene study. Application of techniques of body, voice and imagination to dramatic texts thereby stimulating an acting process for the development of a role. Should be taken directly following Theatre Arts 114.
216A,B. Rehearsal and Performance (2,2) F,S Lyman
Prerequisite: Theatre Arts 214 and/or consent of instructor. Preparation and rehearsal for performance in short scenes, one-act plays and University-sponsored 702 productions; no more than four units of Theatre Arts 216 and/or Theatre Arts 316 may be applied toward the major.

240A,B. Theatre Arts Activity-Crew (1,1) F, S Faculty
Prerequisite: Sophomore class standing. Participation in technical play production activities of either afternoon or evening University-sponsored productions; specific assignments determined at initial meeting; 45 hours minimum participation time plus major crew assignment or equivalent required.
242. Elementary Stagecraft (2) F, S Skalka

Basic physical equipment of the theatre: elementary scenic drafting, construction, assembly and scene painting. Preparation of scenic and property elements for University-sponsored productions. To be taken concurrently with Theatre Arts 248.
244. Stage Make-up (2) F,S Smith

Practical introduction to techniques of theatrical make-up. Male students must be clean-shaven because of the nature of the course. Preparation of make-up materials for University-sponsored productions. To be taken concurrently with Theatre Arts 246.

## 246. Costume Crafts (2) F,S Camburn

Techniques of costume and accessory construction for the stage; use of fabrics, materials and equipment. Preparation of costumes and accessories for Universitysponsored productions. (To be taken concurrently with Theatre Arts 244.)
248. Stage Lighting (2) F,S Green, Skalka

Theory and practice of modern stage lighting; functions of light; design of lighting layout; properties of various instruments; practical experience in the hanging and focusing of lighting equipment for University-sponsored productions. To be taken concurrently with Theatre Arts 242. Not open to students with credit in Theatre Arts 348 prior to Fall Semester, 1978.

## Upper Division

## 10A,B. Theatre Arts Activity-Cast (1,1) F,S Faculty

Prerequisite: Junior class standing. Participation in acting; open to students who prect to be cast in either afternoon or evening University-sponsored productions. Major cast assignment or equivalent required.
*312. Advanced Stage Diction and Dialects (3) Even years Faculty Prerequisite: Theatre Arts 112 or equivalent. Advanced study and special problems in stage speech and a study of special dialects for the stage.

## 313. The Screen Actor (3) F,S Kahan

Study of major screen performances by outstanding actors and actresses of the past and present. Discussion of the different types of screen acting including character acting, romantic acting, comic acting and impersonation. Regular screening of full length films.
*316A,B. Rehearsal and Performance (2,2) F,S Lyman
Prerequisite: Theatre Arts 214 and/or consent of instructor. Preparation and rehearsal for performance in short scenes, one-act plays and University-sponsored隹 may be applied toward the major.
*318. Advanced Scene Study (3) F Appel, MacArthur, Shoup
Prerequisites: Dance 162, Theatre Arts 214, 216A,B,316A,B and/or consent of instructor. Intensive scene study in modern dramatic texts. The class is designed ocontinue and strengthen the process of role development for the actor through cenic exercises. May be repeated to a maximum of six units.
321. History of the Theatre and Drama to 1660 (6) F Bailor, MacArthur

Development of theatre arts from primitive origins through Moliere. Not open to students with three units of credit in Theatre Arts 321
*322. History of the Theatre and Drama Since 1660 (6) S Bailor, MacArthur
Prerequisite: Theatre Arts 321 A,B or consent of instructor. Development of heatre arts from the Restoration to the present. Not open to students with three units of credit in Theatre Arts 322.
324. World Theatre Today (3) S Lyman, Rugg

Current解 ardional point of view, Wexpressionism, Dada, Surrealism, the Absurd garde movement of post World War I (Expressionism, Dada,

History and background of Asian theatre; style of execution and production en Europe and America; emphasis on India, China and Hivence of Asian thealre
331. Acting for the Musical Theatre (3) S Kahan, Shoup

Prerequisite: Theatre Arts 114 and/or consent of instructor. Problems of performing in opera, operetta and musical comedy. May be repeated to a maximum of six units.

340A,B. Theatre Arts Activity-Crew (1,1) F, S Faculty
Prerequite: Junior chas standing. Participation in technical play production in ssignm plus majer crew assignment or equivalent required.
*341. Graphics for the Theatre (3) F Camburn
Interpretation of form, architecture, landscape, drapery and the costumed figure or the theatre designer through basic drawings, watercolor, gouache and mixed media. (No previous art training required.)

## 342. Advanced Technical Theatre (3) F,S Duckwall, Skalk

Prerequisite: Theatre Arts 242. Scene painting, scenic drafting, problems o rigging and mounting various stage productions. Supervision in the practica application of these elements in University-sponsored productions. Not open to students with credit in Theatre Arts 342A,B
344. Theatre Decor (3) S Camburn

Chronological study of interior and exterior architecture, stylistic trends urniture and decorative accessories and their application for the theatrical director, designer and technician.
*346. Costume History for the Stage (3) F,S Camburn, Duckwall
Chronological study of fashions, modes and mores of major historical periods and their application in contemporary stage productions.
*347. Advanced Costume History (3) F Camburn
Prerequisite: Theatre Arts 346 or equivalent. Specialized consideration of historical costume periods for the theatre designer. Emphasis on research source, textiles, color, structure and technical reproduction for the stage.
349. Production Lighting (2) F,S Green, Skalka

Study of contemporary lighting practices and basic lighting design for production forms other than conventional drama
*352. Creative Drama (3) F,S Rugg, Smith
Theory and techniques of developing creative capacities through improvisation and original dramatizations; participation and leadership in creative dramatics.
*353. Dramatic Literature for Children's Theatre (3) F Rugg Survey of dramatic literature for the child audience.
*356. Puppetry (3) S, odd years Faculty
Introduction to the history and forms of puppetry. Practical experience in productions of puppet plays.
*358. Recreational Dramatics (3) F,S Rugg
Problems of staging theatrical productions, puppet shows, variety programs, plays at community recreation centers. Story dramatization, dramatic games, simplified staging techniques appropriate to recreation programs.
*361. Improvisations in Mime (3) $F$ Hamilton
Prerequisite: Theatre Arts 114. Use of an improvisational structure to introduce mime styles for developing characterization, expression of emotion and drama narrative needed in the various historical periods in theatre.
*363. Mime (3) F,S Hamilton 361 or consent of instructor Prerequisites: Dance 162, Theatre Arts 114, 361 or consent of in for the Technique of classical mime. Use of the human body as an
*374. Fundamentals of Play Direction (3) F,S Lyman, Stiver Prerequisites: Theatre Arts 114, 242, 246, and consent of instructor Interpretation of the play; casting; composition and movement; vocal techniques tempo and climax; organization of production staff. For theatre arts majors and minors only.
*375. Intermediate Play Direction (3) F Stiver
Prerequisites: Theatre Arts $214,374,321$ or concurrent enrollment and consent of instructor. Intensive study of thematic structure; director-actor relationship; individual characterization; special problems of working with the new play, comedy and nonrealistic theories; workshop in directing scenes

## 380. Playwriting (3) F,S Lyman

Creative writing for the stage. General consideration of realistic and non-realistic theatrical styles and conventions; exercises in source, character development, dialogue, plot, structure. Students will develop a one-act play and discuss one another's scripts in a workshop format. Selected scripts may be produced at the end of the semester.

410A,B. Theatre Arts Activity-Cast (1,1) F,S Faculty
Prerequisite: Senior class standing. Participation in acting; open to students who expect to be cast in either afternoon or evening University-sponsored productions. Major cast assignment or equivalent required
*414. Period Scene Study (3) F,S Appel, MacArthur, Shoup
Prerequisites: Theatre Arts 318 and/or consent of instructor. Scenic exercises in period plays. Analysis of the play's structure in terms of language, socio-political background, human behavior. Exercises in scenes from Greek, Shakespeare, Comedy of Manners, Farce. May be repeated to a maximum of six units.
*416. Rehearsal and Performance in Acting Styles (2) F,S Stiver
Prerequisite: Theatre Arts 414. Rehearsal and performance of scenes from various periods in theatre history. In addition, scenes and one-act plays will be rehearsed and prepared for performance at the end of the semester.
421. Classical Drama (3) F Faculty
(Same course as Comparative Literature Gr
422. Renaissance Theatre and Drama (3) F Faculty

Prerequisites: Two courses in literature or theatre arts or consent drama in Spain Achievements, problems, trends of Renaissance theative Literature 422. .)
France, Italy and England. (Same course as Compar
423. Continental Drama to Ibsen (3) S Faculty European drama, in translation, frome 423.
*426. Dramatic Theory and Criticism (3) F Kahan
Study of dramatic types including tragedy, comedy and melodrama; major historical and modern criticism
428. Selected Periods in Theatre and Drama (3) S Faculty Prerequisites: Two courses in literature or theatre arts or consa and theatre, to be Study of special movements and periods in the history of drama and 428 .)
selected each semester. (Same course as Compar Kahan, Shoup
*431. Directing for the Musical Theatre (3) F Kahan, Shal of short scenes, one Prerequisite: Consent of instructor. Direction anductions. (Not open to students acts and University-sponsored musical theatre
with credit in Theatre Arts 430A, formerly 166A
*432. Lyric Theatre (3) F Kahan, Shoup History and production techniques of masicaretta, ballet, musical comedy and content and sta

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## 440A,B. Theatre Arts Activity-Crew (1,1) F,S Faculty

Prerequisite: Senior class standing. Participation in technical play production Privities of either afternoon or evening University-sponsored productions; specific assignments determined at initial meeting; 45 hours minimum participation time plus major crew assignment or equivalent required
*443. Advanced Stage Makeup (3) F, S Smith
Prerequisite: Theatre Arts 244. Makeup techniques for characterization, style and technical processes. Male students must be clean-shaven because of the nature of the course. Crew assignment required in University-sponsored productions
444. Scene Design (3) F Camburn, Duckwall

Prerequisite: Theatre Arts 342A or consent of instructor. Creative planning and projects of designs for specific University-sponsored productions
445. Period Scenic Design (3) S Camburn, Duckwall

Prerequisite: Theatre Arts 444 or consent of instructor. Creative planning of cenic designs for various types of period plays with emphasis on Greek Elizabethan, 18th and 19th century dramas.
446. Costume Design (3) F,S Camburn, Crellin

Prerequisite: Theatre Arts 246 or equivalent. Technique of designing stage costumes of various historical periods; creative planning and projection of designs for specific University-sponsored productions. May be repeated once for credit.
447. Advanced Costume Crafts (3) S Odd years Camburn, Crellin

Prerequisite: Theatre Arts 246 or equivalent. Advanced technical problems in costume and accessory construction; production planning pattern drafting.
*448. Stage Lighting Design (3) F Green, Skalka
Prerequisite: Theatre Arts 248 and/or 349 or equivalent. Techniques of designing ighting for various stage forms; creative planning and projection of designs for specific productions.
*452. Advanced Creative Drama (3) S Rugg, Smith
Prerequisite: Theatre Arts 352 or consent of instructor. Practical application of creative drama techniques in leadership situations with children.
*459A,B. Children's Theatre Production (2,2) F,S Rankin, Rugg
Preparation and rehearsal of various theatre forms to be produced for the child audience. Productions to be available to tour in the community.
*470A,B. Ensemble Production ( 3,3 ) F,S Faculty
Prerequisites: Consent of instructor and director of Studio Theatre. Preparation, rehearsal and performance in University-sponsored Studio Theatre productions.
*474. Advanced Play Direction (3) F,S Stiver
Prerequisites: Theatre Arts 375, consent of instructor. Consideration of problems in directing period styles, contemporary non-matrix theatre forms and original scripts. Course will culminate in a free public performance of exerpts, published scripts. repeated to a maximum of six units.
*476. Theatre Management (3) F Eggers
Examination of administration, management and promotion of a producing Exatre organization; practical application required in University-sponsored productions.

## 480. Advanced Playwriting (3) S Lyman

Prerequisite: Theatre Arts 380 or consent of instructor. Advanced creative writing or the stage. Emphasis on an examination and creation of alternate theatre forms cripts from improvisation and/or non-matrix material; one of the Absurdist styles: oliticl suited to environmental theatre. Selected material to be produced as part of an annual Spring Festival of Alternate Theatre.
*490. Special Topics in Theatre Arts (1-3) F,S Faculty
Prerequisite: Consent of instructor. Topics of current interest in theatre arts Plected for intensive study. May be repeated for a maximum of six units. Topics will be announced in the Schedule of Classes.
498. Special Studies in Theatre Arts (3) F,S Faculty

Prerequisite: Consent of instructor and department chairperson (consent of instructor and graduate coordinator if taken for graduate credit). Independent projects and research of advanced nature in the area of theatre arts under faculty projects and research area will be designated by letter at time of registration as (a) acting, (b) directing, (c) costume, (d) scenery, (f) time of registration as (heatre, (h) theatre management, (i) dance, (j) theatre playwriting, ( g ) children's theatre, ( m ) the ( n ) lighting history, (k) theatre criticism, (m) makeup, ( $n$ ) lighting

## Graduate Division

514. History and Theory of Acting (3) S Kahan, MacArthur

Minimum of sits ing of consent of instructor. Selected areas of study in the history, theories and criticism of acting
524. Aesthetics of the Theatre (3) F Bailor

Prer and theoricable to the theatre art with emphas acting and play direction.
570A,B. Ensemble Production Practicum (2,2) F,S Faculty
Prerequisites: Consent of instructor and graduate adviser. Advanced individua projects and research under faculty supervision. Practical experience in the areative arts with direct application to the studio theatre production program.
574. History and Theory of Directing (3) $S$ Stiver

Prerequisites. Minimum of six units of directing or consent of instructor Selected areas of study in history, theories and criticism of directing
621A,B. Seminar in Theatre History and Dramatic Literature $(3,3)$ S Kahan, Stiver
Prerequisite. Theatre Arts 321 or consent of instructor. Intensive study of one major playwright or period in the history of theatre.
623A,B. Seminar in Contemporary Theatre $(3,3)$ F Stiver
Prerequisite: Theatre Arts 322 or consent of instruct movements in playwriting area of contemporary theatre. Problems of philosophy.

626A,B. Seminar in Dramatic Theory and Criticism (3,3) S Kahan Prerequisite: Theatre Arts 426 or conser
criticism. Major critical writings and Camburn
642A,B. Seminar in Theatre Decor $(3,3)$ work in theatre history, design and Prerequisite: Minimum of 9 units of work costuming or consent of instructor.
694. Advanced Studies in Theatre Arts (3) F,S Faculty

Prerequisite: Consent of instructor and graduate adviser. Advanced individual projects with faculty supervision in an area of theatre arts specialization. Limited to three units in any one area per semester and no more than six units in one sem ester with a total of nine units in any one area. Areas will be designated by letter at time of registration as (a) acting, (b) directing, (c) costumes, (d) scenery, (f) playwriting, $(\mathrm{g})$ children's theatre, ( h ) theatre management, (i) dance, ( j ) theatre history, (k) theatre criticism, (m) make up, (n) lighting.

## 696. Research Methods (3) F Bailor

Methods and scope of research including form and style of thesis writing and project recording. (Must be in progress or completed prior to approval of subject for project or thesis.)
697. Directed Research (2) F,S Faculty

Prerequisite: Advancement to candidacy. Required of all candidates who elect the comprehensive option. Individual study under the guidance of a faculty member.
698. Thesis or Project (1-4) F,S Faculty

Prerequisites: Theatre Arts 696 and consent of department chair. Preparation, completion and submission of an acceptable thesis or creative project in partial fulfillment of the requirement for the master's degree.

# Urban and Regional Studies 

## Faculty and Advisory Board

## Director: Dr. Margaret Stark

Professors: Cerillo (History), Krause (Art), Rooney (Economics), Segelhorst (Economics).<br>Associate Professors: Outwater (Geography), Peters (Geography), P. Schmidt (Political Science), Splansky (Geography), Stark (Urban and Regional Studies).

The Urban and Regional Studies Program offers specialized training in a variety of significant urban and regional problem areas. The certificate program is designed to provide training in the analysis of urban and regional problems and serves as an excellent supplement to standard degree programs at both the serves as an excellent supplemels. It offers essential training for those seeking undergraduate and graduate levels. both private sector and public sector careers communities.
region, its development, problems and special cariety of disciplines, the program is
Since urban problems cut across such ach. This is accomplished within the characterized by an interdisciplinary approa with interdisciplinary training and core curriculum by utilization of faculty with istifacipurriculum by allowing experience and within elective elements of the cerlited courses from a variety of students to draw together in a distinctive mix related courses urban and regional other departments and to integrate these wis a program which provides essential studies core course offerings. The result tools necessary to the understanding, background knowledge and the skills and
analysis and treatment of urban regions.
A second hallmark of the Urban and Regional sonents designed to enrich the strong emphasis given to practical field components da Certificate in Urban and experience and training of students. Students wo graduate degree programs not Regional Studies as part of their undergraduan regions and specialized training in only acquire an interdisciplinary focus on complete a practical field study program urban and regional problem analysis, but comction. This is accomplished through a designed to augment formal classroom instrogram consisting of the Urban model university/community educationaject Internship Program and The Long Beach Project.

## Certificate in Urban and Regional Studies

The Certificate Program in Urban and Regional Studies is a 24 -unit course of study comprised of 15 units of core requirements and nine elective units to be dry drawn from one of three possible

Special Populations, Land Use and Economic Development, and Policy Development and Administration.

Requirements for the Certificate in Urban and Regional Studies

1. A bachelor's degree.
2. Consultation with the director of the program
3. Twenty-four units distributed as follows:

Required Courses: Urban and Regional Studies 201, 301, 401, 402, 494.
The Urban and Regional Studies core curriculum consists of five courses: Urban and Regional Studies 201, 301, 401, 402 and 494. These courses seek to impart the substantive knowledge, empirical skills and practical or applied experience required of those who want to work as professionals in this field. Six units (Urban and Regional Studies 201 and 401) stress essential knowledge about the development, organization and problems of urban regions; six additional units (Urban and Regional Studies 201 and 401) introduce primary urban data sources, provide instruction in the development of descriptive statistical profiles of urban areas and stress application of these profiles to the assessment of needs of urban regions and the evaluation of proposed policy responses to given urban problems; a final three units (Urban and Regional Studies 494) provides for supervised student internship in both public sector agencies and private sector offices working on urban and regional problems and/or projects.
Elective Courses: Nine units of certified elective units.
The elective curriculum requires nine units of certified elective units, to be taken in one of three possible special area concentrations and to be selected in consultation with an urban and regional studies adviser. No more than six units shall be from one department and electives must be outside the student's major. Special area concentrations and qualifying electives are as follows:

Community Needs and Special Populations. Nine units to be selected from the following courses: American Indian Studies 310; Asian American Studies 345; Black Studies 210; History 469; Mexican American Studies 350; Psychology 375; Sociology 347; Urban and Regional Studies 490 (when topic selected is appropriate to this area concentration).

Land Use and Economic Development. Nine units, three units of which must be in Economics, to be selected from the following courses: Anthropology 469; Art 417; Economics 300, 334, 436, 437; Finance 448, 452; Geography 446, 467; History 474; Political Science 442; Urban and Regional Studies 490 (when topic selected is appropriate to this area concentration).

Policy Development and Administration. Nine units to be selected from the following courses: Economics 300, 441, 451; Political Science 327, 426; Management 425; Urban and Regional Studies 490 (when topic selected is appropriate to this area concentration), 497A,B .

A brochure describing the Urban and Regional Studies Certificate Program in greater detail is available in the Office of the School of Social and Behavioral Sciences

## University/Community Programs

The university/community program consists of two complementary parts. The first, known as the Urban Internship Program (Urban and Regional Studies 494) is an internship experience in which students work under the supervision of professinal staff of public sector agencies and in private sector offices concerned with urban and regional problems and/or projects.

The second part is The Long Beach Project (Urban and Regional Studies 497A,B) which utilizes the Long Beach urban community as a laboratory for learning. Students study and participate in the formal decision-making structure of city government, and work at the staff level in city departments and in private sector offices working on urban problems and/or projects in the Long Beach metropolitan area.

Both parts are tied to the University through courses designed expressly to give students course credit and provide faculty supervision for their internship and community laboratory experiences.

Students interested in the Urban and Regional Studies Certificate Program should apply to the Director of Urban and Regional Studies, School of Social and Behavioral Sciences.

## Lower Division

201. Introduction to Urban Issues and Problems (3) F,S Outwater, Stark

Examination of significant urban problems and issues: land use, housing options, declining downtowns, suburbanization, industrial park and commercial/office park development, planned communities, growth control, coastal land management, neighborhood and historic preservation.
recreation and open space, special urban populations and districts.

## Upper Division

301. Introduction to Regional Science (3) F,S Outwater, Peters
e study of the impact of space upon man's interaction with his nvironment. Emphasis upon the skills necessary to the preparation by class environment. Emphasis upon the sopulation change, housing, transportation, employment and education in a regional context.

## 401. The Changing Urban Region (3) F,S Stark

Examination of critical urban problem areas within the context or urban decentralization and the decline of older core areas. Introduction to urban data and
 roles in the diagnosis and treatment of urban problems.
402. Methods in Urban and Regional Studies (3) F,S Stark Prerequisite: Urban and Regional Studies 301. Com and research using available community problems with thorough field investigablic agency documents and U.S. community data sources, including primary pubrehensive research and analysis Bureau of the Census block and tract data. Comprethods of presentation of their skills are developed and students learn effective methods of presentation of theats analysis and findings in both verbal and written media. Each student project treats a study area in a city of the student's choosing, and is
dem onstrate research and presentation skills in job interviews.
490. Special Topics in Urban and Regional Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Topics of current interest in urban and regional studies selected for intensive development. Elective credits toward the certificate count only when the special topic designated is within the students special area of concentration for credits. Topics will be announced in the Schedule of Classes.
494. Urban Internship Program (3) F,S Stark Prerequisite: Consent of instructor. Student internship expector offices in order to Los Angeles and Orange County private sector and and complexities involved in gain an understanding of the processes unities. Students meet weekly in a attempting to solve problems of urbablems and proposed strategies of treatment seminar format to discuss urban problems and propors as well as to report on observations and with faculty and community leaders as
insights gained from the field placement experience.

497A,B. The Long Beach Project ( 3,3 ) F,S Outwater, Stark
Prerequisite: Consent of instructor. Analysis of urban public policy issues and policy formulation processes with a focus on the City of Long Beach. Students will learn while participating, as appointed members, on the boards and commissions of the City of Long Beach, serving at the staff level in city departments, or in private sector offices working on urban problems and/or projects in the Long Beach metropolitan area. Students meet weekly in a seminar format to discuss urban problems with community leaders and practitioners and to share observations and insights gained from individual field placement. In addition, during the second semester, students engage in special research projects designed in consultation with the supervising faculty and the student's placement supervisor.
499. Directed Studies (1-3) F,S Faculty

Prerequisite: Consent of instructor. Independent study under the supervision of a faculty member.

## Vocational Education

## Professors: Dean, Grainge, Stanger

Associate Professor: Resurreccion.

## Assistant Professor: Bott.

Director and Graduate Adviser: Dr. Norman R. Stranger
Undergraduate Adviser: Dr. C. Thomas Dean
Designated Subjects Credential Coordinator: Dr. Paul A. Bott
The vocational education program is designed to enable persons to gain the skills and knowledge requisite for successful employment in secondary schools community colleges and adult programs as teachers, coordinators and supervisors of woral and career preparation programs.

## Center for Career Studies

The Center for Career Studies is a non-profit, tax exempt, research and Tovelementing and evaluating organization operating as an ith, the Sciences. The center has as independent unit within the School of Applied Arts career education, occupational its primary purpose serving the mutual goas of development as they exist education, vocational education and mandic and private sectors of the major community programatically within the public ained from the center.
Additional information may be obtained (Credential Code 300)
Designated Subjects Credential (Credential Code 300)
This program of instruction identifies and develops successful employment in the identified teaching competencies as required by the California Commission for designated subjects programs, as requed in conjunction with the School of Teacher Preparation and Licensing. Education.
Bachelor of Vocational Education (code 4-1027)

The bachelor of vocational education degree and qualify for a Swan Bill evaluation teaching in a vocational education program and qualin Sacramento. To qualify for the through the State Board of Vocational Examination Code. Section 23956 must be evaluation the requirements of the State Education Code, Section exing experience met. This regulation stipulates a minimum period of vocational teaching experience amounting to 1,620 clock hours in a full-time position of 1,000 cong this degree may approved trade extension class. Additional informad Arts and Sciences
be obtained from the dean of the School of Applied Arts and Sciences

## Master of Arts in Vocational Education (code 5-1027)

The master of arts degree in vocational education is available to qualified students preparing for professional careers in the fields of career occupational/vocational education. A major thrust is the development of qualified eadership personnel to serve vocational education programs in public and private education as well as manpower development programs in California and the nation.
Multidisciplinary and interdisciplinary in nature, the program complements existing graduate programs serving individual disciplines usually associated with occupationally-oriented curricula. Opportunities are provided for graduate students to improve their competencies related to programs dealing with the major career clusters: business and office, communications and media, construction, consumer and homemaking, environmental control, fine arts and humanities, health hospitality and recreation, manufacturing, marine science, public service and transportation.
As a result of curricular flexibility, the student may pursue individualized goals of either comprehensive study or specialization within the scope of vocational education. All candidates are required to complete a core of courses which includes a thesis or written comprehensive examination and oral defense of the thesis and comprehensive examination. Detailed information about the curriculum options is contained in the School of Applied Arts and Sciences Graduate Handbook and the Handbook for the Master of Arts in Vocational Education available upon request from the graduate adviser.

Each applicant must submit a copy of the official transcript of all college work to the graduate adviser of vocational education in addition to copies required by the Office of Admissions and Records.

## Prerequisites

1. A bachelor's degree in vocational education, with a minimum of 24 upper division units in vocational education comparable to courses offered at this University; or
2. A bachelor's degree with a minimum of 24 upper division units comparable to courses offered at this University in the discipline in which the degree was awarded and a vocational education credential.

## Advancement to Candidacy

1. Satisfaction of the general University requirements for advancement to candidacy.
2. Completion of all prerequisite requirements.
3. Establishment of degree objectives with the Records Office.
4. Maintenance of $B$ average ( 3.0 GPA ) in all work completed in graduate program.
5. Approval of Vocational Education Graduate Adviser and Director of Graduate Studies and Research, School of Applied Arts and Sciences.
6. Pass CSULB Advanced Writing Test or English 300 with a grade of A or B.

## Requirements for the Master of Arts

1. Completion of Vocational Education 501, 502, 503, 504, 696.
2. Completion of 30 units of approved upper division and graduate courses and a thesis (Vocational Education 698) and an oral examination over the thesis approved by Department Graduate Committee; or 36 units of approved upper division and graduate courses and an oral and written comprehensive examination.

## Upper Division

*400. Career Education and the World of Work (3) F,S Faculty
Key occupational clusters, career guidance fundamentals; the career development process; youth opportunities for leadership; the changing character of technology and a study of selected career development modules.
*401A,B,C. Concepts and Elements of Career and Vocational Education (1,1,1) F,S Faculty
Analysis of the elements and components of career and vocational education including study of the basic concepts, the rationale, the legacy, the various publics and program elements. Not open to students with credit in Vocational Education 400.

402A,B,C. Developing Vocational Programs (1,1,1) F,S Faculty
Specific methods and techniques of the vocational curriculum development process, including needs assessment, program planning, instructional materials development and the various evaluation methodologies. Not open to students with credit in Vocational Education 430.

403A,B,C. Implementing Vocational Programs (1,1,1) F,S Resurreccion
Study of the role of vocational teachers in assisting students to grow, mature, ain knowledge, competencies and attitudes. Emphasis is placed on the learning rocess, deveping learning activities and evaluation of student achievement. Not pen to surnal Education 432.
411. Fire Services Administration (3) F Faculty

Organize fire services. Line, staff and auxiliary functions. Problems of pupervision. Special methods and equipment. Not pen to students with credit in Criminal Justice 441 Lecture-discussion 3 hours.)
412. Fire Prevention Administration (3) $S$ Faculty

Prerequisite: Fire prevention or consent of instructor Organization of Fire Prevention Bureau; laws and regulations, building and fire code admin of Fire Prevention Burion with governmental and other organizations; unctions intration; coordinationing. Not open to students with credit in Criminal Justice 442. (Lecture-discussion 3 hours.)
413. Fire Protection Administration (3) F Faculty

Application of the American Insurance Association's evaluation to fire protection Applial administration; objectives of the evaluation; assessmation results; evaluation factors affecting rating; administrative use it Criminal Justice 443. (Lectureprocedures. Not ope discussion 3 hours.)
414. Fire Disaster Administration (3) S Faculty. Fire disaster protection Prerequisite: Fire fighting tactics and stratral communications and field organization; disaster laws; establishment and equipment; overhaul and security; control centers; support groups, manpower Not open to students with credit in disaster and civil defense relationships.)
Criminal Justice 444. (Lecture-discussion 3 hour
415. Fire Defense Planning (3) F Faculty Prerequisite: Fire company organization and managal assistance. Application defense needs, facilities, master plan development, federal assistance. Applirement impact of of ISO Grading and Guide for Determining Fire Flow rears.)
insurance. Field trips required. Lectional Education (3) F,S Faculty
*417. The Work Ethic: Implications for Vocationals that comprise the values of work
Study of the development of various elementrong studies of the work ethic held by contemporary society and means of incation.
into instructional programs of vocationalion (3) F,S Faculty
*418. The Marketplace for Vocational Educat serve persons who have the need to
Studies of public and private agencies thatation; where such persons are placed, identify, prepare for and use vocational education, whe trends and needs.
successes and failures, and
*420. Evaluation of Vocational Education Programs (2) F Faculty Analysis of evaluation models usable for vocational education programs and systems, including the phases of needs assessment, program planning, progress, implementation and outcome evaluation.
*455. Cooperative and Work Experience Education Modes (2) S Faculty
Review of planning and implementing on-the-job learning experiences and the necessary linkage between the campus and the work place.
*456. Attitude Awareness for Vocational Teachers (2) F,S Faculty
Introduction to and application of the principles of communication, human relations, understanding other people, attitude recognition and development, and mental steps to motivation. Contributions of the behavioral sciences to more effective teaching in a vocational setting will be examined and plans for their implementation will be prepared.
*460. Vocational Education for Special Needs Learners (3) F,S Faculty
Identification, assessment and instructional development strategies for handicapped and disadvantaged students in vocational education.

## *461. Methods of Teaching Disadvantaged Youth in Vocational

 Education (2) F,S FacultyTechniques for teaching disadvantaged youth in vocational classes. Emphasis on methods, motivation, counseling and instructional organization.
*470. Seminar in Vocational Education (3) F,S Bott
Study of the major problems and issues confronting the vocational educator and practitioner.
*480. Internship in Vocational Education (1-4) F,S Faculty
Internship in community or school manpower development programs which involve instruction administration and research within the career education spectrum.
*483. Senior Project (1-3) F,S Faculty
Identification of, planning, preparation and completion of a project to solve problems particular to a business, educational or industrial setting. Written report required.
*485. Identifying Management Competencies (3) S Faculty
Students will develop and make plans for operationalizing their philosophies of leadership and supervision, prepare for self-improvement of leadership capabilities prepare a plan for the development, operation and evaluation of a Designated Subjects program, prepare budgets, written communications and demonstrate other supervision and coordination competencies.
*490. Independent Study in Career Education (1-3) F,S Faculty
Individual research and study under the direction of a faculty member in areas not an integral part of any regular course. Written report is required. May be repeated to a maximum of three units.
*497. Practicum in Vocational Education (1) F,S Faculty
Action-oriented organized learnings directed toward identifying the major problems and issues confronting vocational education and suggesting practical solutions for the practitioner. (A) Theoretical aspects, (B) Technical aspects, (C) Related informational aspects, (D) Attitudinal aspects, (F) Management aspects, (G) Human aspects.
*499. Special Topics in Career Education (1-3) F,S Faculty
Topics of current interest in career education will be selected for intensive group study. Topics will be announced in the Schedule of Classes. May be repeated to a maximum of six units.

## Graduate Division

501. Manpower Development and Career Education

## Programs (3) F,S Resurreccion

Education and training programs covering the spectrum of occupational preparation emphasizing vocational education and manpower development components.
502. Vocational Education Administration (3) F,S Stanger administrative Concept
03. Management of Vocational Education Programs (3) F,S Roberts

Advanced principles and procedures of management emphasizing local and Advanal education programs.
504. The Environments of Vocational Education (3) F,S Welsh

Interrelationships among vocational education, business, industry, government and society.
696. Research Methods in Vocational Education (3) F,S Bott
eleting defining and presenting methods of research; demonstration of research theory to problem solution.

## 697. Directed Studies in Vocational Education (1-3) F,S Bott,

## Resurreccion, Stanger <br> Prerequisite: Advancement to candidacy. Research in an area of specialization

 under the direction of a faculty member.698. Thesis (1-4) F,S Bott, Grainge, Resurreccion, Stanger
. Thesis (1-4) F,S Bott, Grainge, Resurnning, preparation and completion
Prerequisite: Advancemocational education field.

## Women's Studies

The main objectives of Women's Studies are: (1) to encourage scholarly inquiry nto the nature roles status and history of women, (2) to provide the facilities
 devesary for the disuitful interaction o development of women s full poth within the University community and in the women with one another, both wacademicminor
community at large, and (4) to offer an acadern to all individuals. In addition to the
The program is interdisciplinary and open to alfered in the following areas or women's studies courses, courses are currently Studies, Comparative Literature departments: Anthropology, Asian-American Sics, Honors, Psychology, Radio Economics, English, History, Home Econo, Sociology, Speech Communication, Television, Religious Studies, Social Welfare, Socent.
Physical Education and Human Resources Man imerican studies with an option in
Students may also graduate with B.A. women in America (for further information ondal major program.
studies adviser) or with a B.A. through the spion about the women's studies program
For advisement and additional information
contact the Coordinator, Women's Studies: 0-0013
Requirements for the Minor in Womested with approval of a women's studies A minimum of 21 units,
adviser, from the following categories: 415,485 (or History 485).

1. Women's Studies Core: $101,102,4$ ts selected from Anthropology 330, Black
2. Cross-Cultural Courses: Three units $490 \dagger$. English 498t, Mexican American Studies 490t, Asian American Studies 4901 Eng Women's Studies 401 (or Studies 415, American
History 401), 315, 490t. 314 .
3. Electives: At least six units selectedre units of 498 or 499 may be applied to $350,356,405,490 t, 498,49$.

## Lower Division

101. Women and Their Bodies (3) F,S Fody of literature and ideas related to An in the biology and sexuality of women.
[^15]
## 102. Women in Contemporary Society (3) F,S Faculty

An introduction to some of the basic questions raised by the contemporary feminist movement relating to the social, political and economic status of women

## Upper Division

314. Women's Lives (3) F,S Faculty

Study of the lives of well-known and little-known women based on biographical and autobiographical sources.

## 315. Black Women in America (3) F,S William

Examination of the roles of American black women as expressed in their literature. The course will be taught from an interdisciplinary perspective and will commence with colonial literature

## 350. Women and Mental Illness (3) S Faculty

Introduction to the rapidly expanding body of literature related to the history, anthropology, psychology and sociology of mental illness with particular emphasis on the relationship between the occurrence of mental illness among women to sex role socialization and stereotypes
356. The Lesbian (3) S Faculty

This course will examine the position of the lesbian in society, including attitudes portrayed in media, health, mental health, professions, sports, education, law and religion and the resulting societal stigmas. Focus on the role and function of a homosexual woman in a heterosexual world. The Gay Liberation movement and the relationship between Lesbianism and Feminism will be explored.
401. History of Women in Cross-Cultural Perspective (3) S Faculty

Comparison of how different social and cultural systems have affected the changing historical roles of women. Analysis of women's work roles, social status and political participation in selected developed and undeveloped Western and Asian, capitalist and socialist societies. Area emphasis to vary from semester to semester Independent student research projects. Open to all qualified men and women.
405. Topics in Women's Oral History (3) F,S Faculty

Using oral history this course will focus on women's experience in different periods in the 20th century. Different topics will be emfphasized each semester including a study of women's changing history through a comparison of two generational groups; the "feminine mystique" 1920 and 1950; Rosie the Riveter women during World War II. May be repeated with different topics for a maximum of six units
410. Women and Religion

## (3) F Faculty

A study of the Judeo-Christian understanding of the nature of woman and her role in church and society from biblical times to the present. Biblical, historical theological and practical aspects of the subject will be investigated.

## 415. Feminist Theory (3) F,S Faculty

Prerequisite: Women's Studies 101, 102 or consent of instructor. Examination of major feminist writings dealing with the emancipation of women; analysis and discussion of reformist, revolutionary and psycho-social theories for bringing about female-male equality.
485. History of Women in the United States (3) F,S Faculty

Study of the changing role and status of women in American society from 1600 to the present. Emphasis will be placed on the similarities and differences in the position of women in various sub-cultures, on the roles of women at different economic levels and on past and present feminist movements.

## 490. Special Topics (1-3) F,S Faculty

 different topios for a maximum of six units. Examples of topics offered are issues in Sex and Race, and Women, Work and Social Change498. Field Work (1-3) F,S Faculty

Prentructor. Practical experience in campus or community organizations concerned with women's issues. May be repeated for a maximum of six units.

## 499. Directed Studies (1-3) F, S Faculty

Prerequisites: Women's Studies 100, consent of instructor. Independent work in Frequisites: Women's Studies 100, consenctor. May be repeated for a maximum of six units

## Faculty

## As of January 1, 1979

(Number in parentheses indicates year of appointment)

## Emeriti


B.A., De Pauw University; Ph.D., University of .................. . Professor, English

Ralph K. Allen (1956). ......................................... University of Washington. Emeritus, B.A., William Jewel 1970.

Roy C. Anderson (1950) . . .................................... Roy C. Anderson (1950) College; M.A., University of Michigan; Ed.D., Stanford University.Emeritus, 1974.

Professor, Physical Science
Olaf P. Anfinson (1956) .................................... Colorado State College of B.Ed., Winona State Teach

Kenneth W. Appelgate (1965) ............................. 1972
B.S., M.A., Ph.D., University of Washington. Emeritus, . Professor, Civil Engineering

Cecil Armour, P.E. (1968) .............. Toronto: P. in C.E., Province of Ontario B.A.Sc., M.A.Sc., University of

Canada,California. Emeritus, 1972 . Professor, English
Clarence P. Baker (1952). .............................. University of California
B.S., Haverford College; M.A

Los Angeles. Emeritus, 1977. Professor, Home Economics
Zelpha Bates (1953) ............................................ Teambia University; Ed.D.. New
B.A., Washburn College; M.A., 1967

York University. Emeritus, 196
Protessor, Art
Bela L. Biro (1959)
Ph D. University of Budapest. Emeritus, 1968
 Eelyn L. Blackman (19), M.P.H., Ed.D.. University of California, Berkeley B.A., University

Director of the University Library
Chan (1949) .................................iversity of Southern California
haries J. Boorkman (1949)
B.A., B.S. in L.S., University of Illinois; M.A., Union
Emeritus, 1976 . Dehool of Business Administration ..................... University of Michigan. Emeritus, 1977.
Dean O. Bowman (1973).
University; Ph.D., University J. Wesley Bratton (1950) ......................................... Seativersity of Southern California
B.A., Seatic College; M.S. Emeritus, 1969.
Ernest G. Brind (1965) ............ Associate Professor, Mechani
B.E., M.S., Ed.D., University of Southern California. Emeritus, 1971. Arts Libraria Ruth M. Bryan (1962) . . . . . . . . . . . . . . . . . . . . . . . . Assistant Fine Arts Liverarian
B.A., M.A., University of Lis., University of B.A., M.A., University of California
Southern California. Emeritus, 1977.

Southern California.
Executive Dean, Administration
B.S., University of Southern California; M.A., Stanford University; Ed.D., University of Southern California. Emeritus, 1969.
R. Burdett Burk (1954)

Professor, Elementary Education
R. Burdett Burk (1954)............................. Indiana University. Emeritus, 1975. Maude C. Carlson (1952) . Head Social Science Reference Librarian
Emeritus, 1967. A.M., M.A. in L.S., Unive 2) ....

George R. Cerveny (1952)
ritus,
B.S., M.A., University of Idaho; Ph.D., New York University. Em eritus, 1967.

Teresa B. Chambers (1969)
Head Science Librarian
Teresa B. Chambers State University; Mi.L.S., University of Southern California. Emeritus, 1978.
James E. Cockrum (1955). ........................................ Teachers College, Columbia University;
B.Ed., Southern Illinois University; M.A., Te B.Ed., Southern Illinois University; M.A.,
Ed.D., Indiana University. Emeritus, 1978.

Joseph Contreras (1961)
Associate Professor, Spanish-Portuguese B.A., M.S., University of Southern California. Emeritus, 1977.

Corinne A. Crogen (1951) ................. Professor, Women's Physical Education B.Ed., La Crosse State Teachers College; M.S., Wellesley College; Ed.D., University of Michigan. Emeritus, 1974.
Marcel J. DeLotto (1954) . . . . . . . . . . . . . . . . . . . . . . Professor, Physical Education
 University of Oregon. Emeritus, 1972

Counselor California. Emeritus, 1973.
Dale D. Drum (1956)
Professor, Speech Communication

John H. Dudley, P E (1960) ......................... Professor, Civil Engineering
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John Trevennen, Jr. (1952) .......................... Emeritus, 1978.
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Robert E. Vivian, P.E. (1958).
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Chien Wenjen (1959).
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Babbush, H. Edward (1958) . . . . . Director, Office of Career Planning and Placemen
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Baker, Philip C. (1969).
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Bliss, James H. (1964)

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\section*{California State University Long Beach Long Beach, California 90840 Address Correction Requested}```


[^0]:    DECEMBER
    MET $T$ T
    $\begin{array}{rrrrrrrr}2 & 3 & 4 & 5 & 6 & 7 & 8 \\ 9 & 10 & 11 & 12 & 13 & 14 & 15\end{array}$
    $\begin{array}{lllllll}9 & 10 & 11 & 12 & 13 & 14 & 15 \\ 16 & 17 & 18 & 19 & 20 & 21 & 22\end{array}$ $\begin{array}{lllllll}16 & 17 & 18 & 19 & 20 & 21 & 22 \\ 23 & 24 & 25 & 26 & 27 & 28 & 29 \\ 30 & 31 & & & & & \end{array}$

[^1]:    INon residents and foreign visa students must pay tuition each semester in addition to tees and expenses Charged all students (California residents)
    Foreign visa students may request installment payment of their non resident tuition fees from their foreign will be allowed each semester. \& Certain courses may require material fee

[^2]:    $\dagger$ Single parents with more than one child, or married students with children should add $\$ 1,200$ per child
    to cover additional costs.

[^3]:    (a) This amount will be reduced by the CSUC share of the statewide budget reductions required by Budget Act (a statewide reduction of $\$ 54,000,000$ in personal services piting Expense and Equipment) and Section 27.2
    i For budgetary purposes, full time equivalent (FTE) translates onat to the hiring freeze).
    load. The term assumes that a full time student in The California State University total academic student for 15 units of academic credit. Some students enroll for more than 15 unitsersity and Colleges is enrolled than 15 units
    : The average costs paid by a student include the student aervices teen tee, student body fee, and the nonresident fuition. This amount is dee, health facilities fee, college union fees and dividing by the total full time equivalent student enrollm ent. Individual students total of all student less than $\$ 312$ depending on whether they are part time, full-time, resident or nois students may pay more or
    it Not included in the Average Cost Per Student (FTE), and Percentagident or nonresident students.
    cost of all the system's permanent facitities and equipment on the 19 campuse . The estimated replacem ent billion, excluding the cost of land.

[^4]:    $\dagger$ Example: A student deficient tweive (12) grade points at the time of the disqualification must earn at east six (6) excess grade points in classes taken after disqualification. All transferable college courses completed after disqualification at all institutions are averaged to determine excess grade points earned and reinstatement eligibility. Only grades of $A$ and $B$ earn excess grade points. Grades of $A$ earn two (2) excess grade points per unit of class: grades of $B$ earn one (1) excess grade point $p$. $D$ and $F$ reduce the number of earn excess grade points and do not contribute to reinstateme (1) grade point per unit of D and two (2) grade excess grade points earned by $A$ and $B$ grades at the rate of one (1) grade point per unit of $D$ and iwo (2) grade points per unit of $F$.

[^5]:    ${ }^{\circ}$ Credit grade is assigned same grade point value as C grade in order to compute student's progress. Neither points or units of CR grade or units of NC grades are used in computing G.P.A.

[^6]:    Mechanical Engineering Ocean Engineering

[^7]:    Applicable when focus is on Asia
    Comparative Literature 325 and Theatre Arts 325 are the same course, as are History 481 and Religious
    Studies 481 . Students can apply only one of each group toward requirements

[^8]:    698. Thesis (2-6) F,S Faculty

    Prerequisite: Consent of faculty adviser. Planning, preparation and completion of a thesis related to a field in economics

[^9]:    $\dagger$ On an approved mediaeval or Renaissance topic only certain special studies topics may be repeated for
    credit with approval.

[^10]:    $\dagger$ Clinical Laboratory Technology, Public Health Microbiology.

[^11]:    - A conviction of a crime which substantially relates to the qualifications, functions or duties of physical therapist may prevent a person from obtaining a license to practice

[^12]:    *304. Recent Political Theory (3) F,S Scott
    Dominant concepts, theories and theorists of the late 19 th and 20th centuries Marx, Nietzche, Freud, Dewey, Camus

[^13]:    *475. Interviewing and Case Study Methods (3) F,S Fieber
    Prerequisite: Psychology 314. Study and development of the clinical techniques of observation, case history and the interview. (Lecture 3 hours.)

[^14]:    Micher Russian-East European Studies. Consultation with

[^15]:    $\dagger$ If applicable and approved by the women's studies adviser

