California State University Long Beach

1980

undergraduate study bulletin

UNIVERSITY PUBLICATIONS

("S" indicates student publication)

Title	*Publisher*
Alumni Today	Alumni Office
Campus Guide	Concerns for the Handicapped Committee
Continuing Education Bulletins	Director of Continuing Education
El Informe Bilingue	Chicano Bilingual Special Services Program
Forty-Niner (newspaper) (S)	Associated Students
Forty-Niner Engineer (S)	Engineering Students
Forum	Faculty Organizations
Gambit	Department of English
Genre	Department of Comparative Literature
Gold Dust	Department of Women's Physical Education
Graduate Bulletin	Director of Academic Planning
Interface	School of Engineering
Intro (S)	Sigma Delta Chi
Mag	Department of Comparative Literature
News	Fine Arts Affiliates
Occasional Paper	Bureau of Business Services and Research
Perspective	Vice President for Administration
Re (weekly calendar)	Associate Dean of Student Affairs
Reprint Series	Bureau of Business Services and Research
Research Notes	Director of Research
Review of Southern California Journalism (S)	Sigma Delta Chi
Rosebud	Department of Journalism
Schedule of Classes	Coordinator of Scheduling
Student Handbook	Associate Dean of Student Activities
Summer Sessions Bulletin	Dean of Summer Sessions
The History Teacher	Society for History Education, Inc.
The Lantern (S)	Associated Students
The Nugget	49er Athletic Foundation
The Prompter	Department of Theatre Arts
Undergraduate Bulletin	Director of Academic Planning
University Review	Alumni Office
University Bulletin	Information and Publications Office
Western Economic Journal	Department of Economics (Executive Office at this University)

CALIFORNIA STATE UNIVERSITY

LONG BEACH

BULLETIN

VOL. 26, NO. 3 MAY 1, 1975

UNDERGRADUATE CATALOG

GENERAL INFORMATION AND ANNOUNCEMENT OF COURSES

Fall and Spring Semesters 1975-76

6101 E. Seventh Street, Long Beach, California 90840
Telephone, 498-4111

Published five times annually as follows: One in December, one in April and three in May by California State University, Long Beach, at Long Beach, California. Second class postage paid at Long Beach, California.

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 name of a faculty member as academic advising coordinator who should be contacted for either academic advisement or assignment to an adviser.

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 Undergraduate Bulletin is under the direction of Dr. Boyd Davis, Director of Academic Planning. Production staff consists of Barbara Parks, Editor; Mark Mayuga, Designer; Janet Egbert, Secretary; Gary Moats and Arthur T. Martinez, Photographers.

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1975-76 Calendar

Fall Semester, 1975

September 1 ..... Labor Day—holiday.

September 2 ..... Beginning of fall semester.

September 3 ..... Registration and change of program.

September 3 ..... Instruction begins. Refer to *Schedule of Classes*.

September 16 ..... Last day to add new class to program.

September 30 ..... Last day to withdraw from a course and not have it appear on permanent record (instructor drops included).

October 11 ..... Entrance Examinations: College Entrance Examinations Board Scholastic Aptitude Test.

October 18 ..... Entrance Examinations: American College Testing Program Examination.

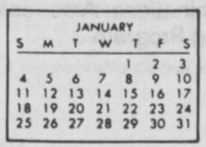
November 1 ..... Entrance Examinations: College Entrance Examinations Board Scholastic Aptitude Test.

November 11 ..... Veterans' Day—holiday.

November 27-28 ..... Thanksgiving recess.

December 6 ..... Entrance Examinations: American College Testing Program Examination.

December 13 ..... Entrance Examinations: College Entrance Examinations Board Scholastic Aptitude Test.



December 13 ..... Last day of instruction.

December 15-20 ..... Final examinations.

December 20 ..... Christmas recess begins.

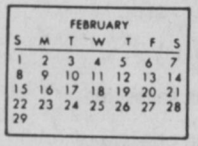
January 5 ..... Final grades due.

January 12 ..... End of fall semester.

Winter Session, 1976

January 5-23

Spring Semester, 1976

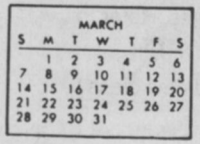


January 19 ..... Beginning of spring semester.

January 19-23 ..... Completion of registration. Refer to *Schedule of Classes.*

January 26 ..... Instruction begins.

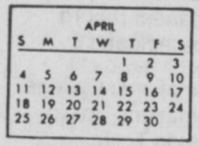
February 6 ..... Last day to add new class to program.



February 14 ..... Entrance Examinations: American College Testing Program Examination.

February 16 ..... Washington's Birthday—holiday.

February 23 ..... Last day to withdraw from a course and not have it appear on permanent record (instructor drops included).



April 10 ..... Entrance Examinations: American College Testing Program Examination.

April 12-17 ..... Spring recess.

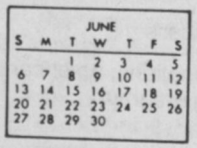
May 15 ..... Last day of instruction.

May 17-21 ..... Final examinations.

May 24-27 ..... Final examinations.

May 31 ..... Memorial Day—holiday.

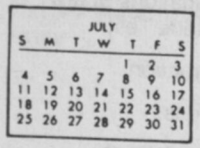
May ..... Commencements to be announced.



June 1 ..... Final grades due.

June 1 ..... End of spring semester.

June 5 ..... Entrance Examinations: College Entrance Examinations Board Scholastic Aptitude Test.



June 12 ..... Entrance Examinations: American College Testing Program Examination.

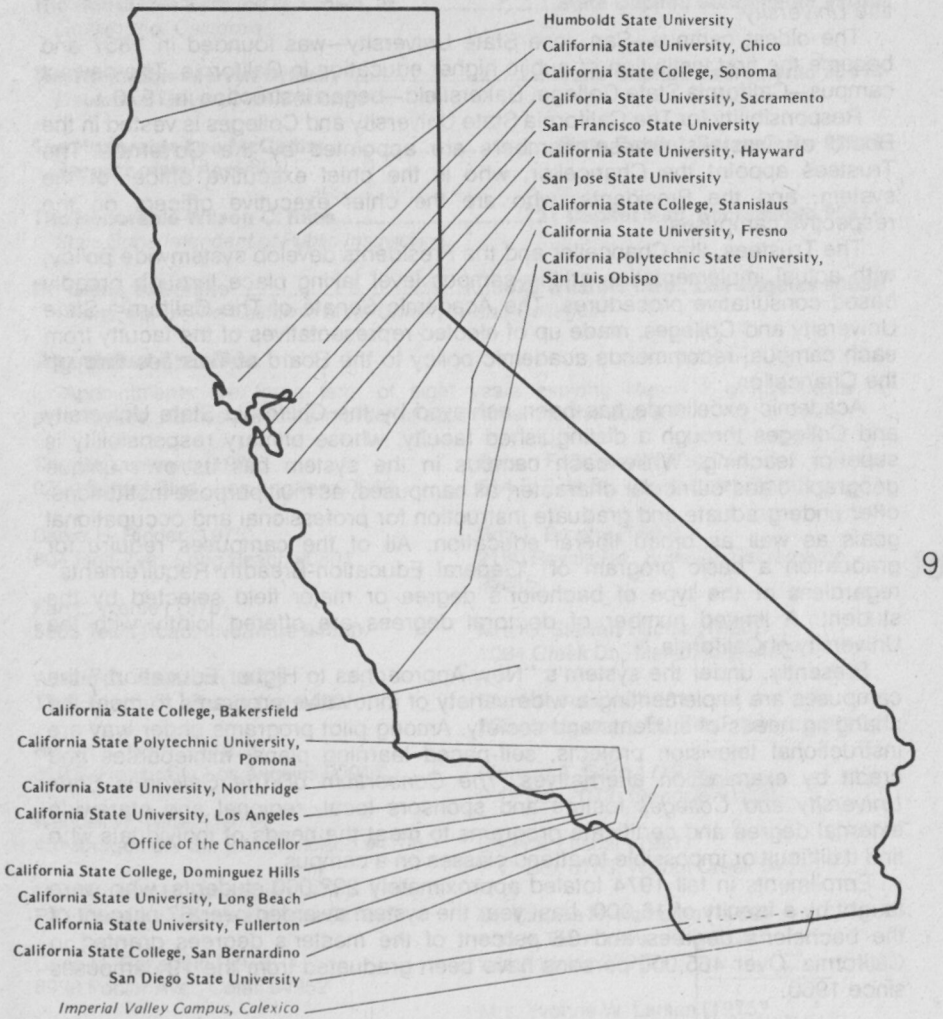
1976 Summer Session

June 7 - July 17

June 21 - July 30

July 19 - August 27

THE CALIFORNIA STATE UNIVERSITY AND COLLEGES



The California State University and Colleges

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

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

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

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

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

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

Enrollments in fall 1974 totaled approximately 292,000 students, who were taught by a faculty of 16,000. Last year the system awarded over 57 percent of the bachelor's degrees and 36 percent of the master's degrees granted in California. Over 465,000 persons have been graduated from the 19 campuses since 1960.

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213 938-2981

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213 498-4111

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Pomona, California 91768
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714 598-4592

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Sacramento, California 95819
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916 454-6011

California State College, *San Bernardino*
5500 State College Parkway
San Bernardino, California 92407
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714 887-6311

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San Diego, California 92182
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714 286-5000

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Calexico, California 92231
714 357-3721

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1600 Holloway Ave.
San Francisco, California 94132
Paul F. Romberg, President
415 469-2141

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San Jose, California 95192
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408 277-2000

California Polytechnic State University,
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San Luis Obispo, California 93407
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805 546-0111

California State College, *Sonoma*
1801 East Cotati Avenue
Rohnert Park, California 94928
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707 795-2880

California State College, *Stanislaus*
800 Monte Vista Avenue
Turlock, California 95380
Carl Gatlin, President
209 633-2122

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

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Counselor ..... Thomas Stevens
Counselor ..... David B. Whitcomb
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Assistant Test Officer ..... Richard E. Cantey
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Associate Director of Housing, Services ..... Kermit U. Parker
Director, Health Center ..... Donald L. Martinson
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Assistant Director, Recruitment ..... Ramon Cruz

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Dance Department ..... Celeste Kennedy
Music Department ..... Gerald R. Daniel
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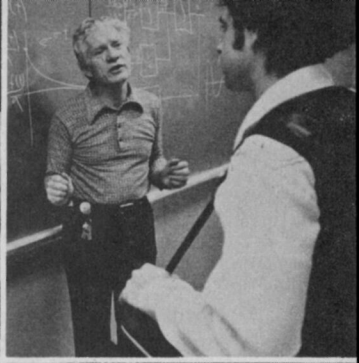
School of Letters and Science ..... Richard H. Wilde
Associate Dean ..... Charles W. Austin
Associate Dean ..... William M. Resch
Associate Dean ..... Dorothy M. Goldish
Assistant to the Dean ..... Frank L. Costa
American Indian Studies ..... David Hood
Anthropology Department ..... Dorothy Libby
Asian American Studies ..... Lloyd T. Inui
Biology Department ..... Bruce E. Beekman
Black Studies Department ..... Skyne Uku
Chemistry Department ..... Roger D. Bauer
Communicative Disorders Department ..... June Cooper
Comparative Literature Department ..... John C. Jernigan
Economics Department ..... Simeon J. Crowther
English Department ..... Helen C. Gilde
French-Italian Department ..... F. M. Swensen
Geography Department ..... John C. Kimura
Geological Sciences Department ..... Paul J. Fritts
German, Russian and Classics Department ..... Wilm Pelters
History Department ..... Eugene L. Asher
Journalism Department ..... M. L. Stein
Linguistics ..... Janet Sawyer
Mathematics Department ..... Thomas A. McCullough
Mexican-American Studies Department ..... Alex Osuna
Microbiology Department ..... Frank E. Swatek
Philosophy Department ..... Shane Andre
Physics-Astronomy Department ..... Dean Ayers
Political Science Department ..... Robert L. Delorme
Psychology Department ..... John R. Jung
Radio and Television Department ..... B. Joe Langston
Social Welfare Department ..... Erma L. Hutton
Sociology Department ..... Harold G. Hubbard
Spanish-Portuguese Department ..... Beverly DeLong-Tonelli
Speech Communication Department ..... Owen Jenson
Director of Special Programs ..... Byron C. Kluss
Center for Asian Studies ..... Sharon L. Sievers
Center for Environmental Studies ..... Ruth L. Russell
Center for Latin American Studies ..... Theodore E. Nichols
Center for Urban Studies ..... Richard Outwater
Center for Women's Studies ..... Deborah Rosenfelt
General Honors Program ..... Gene Dinielli
Director, Southern California Ocean Studies Consortium ..... Murray Dailey

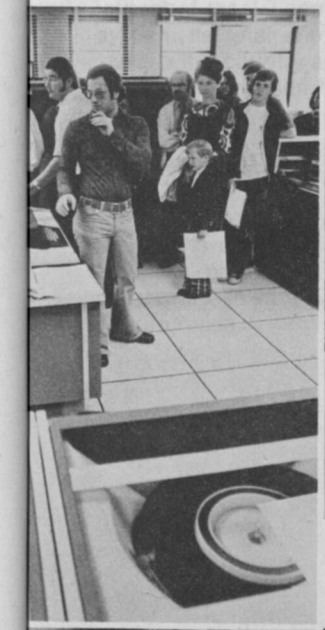
University Councils and Committees

The Academic Senate is the basic advisory body of the faculty. The Academic Senate councils and standing committees are the following:

ADP and Information Services Advisory Committee
Athletic Board of Control
Campus/Police Relations
Committee on Committees
Ecological and Environmental Practices Committee
Elections
Faculty College Union
Financial Affairs
Graduate
Innovative Proposals Review
International Programs
Judiciary
Legislative and Public Relations
Library
Mass Communications Commission
Matriculation and Registration
Panel on Professional Standards
Personnel Policies and Practices
Planning and Educational Policies
Research
Rules
Scholarships and Loans
Scholastic Standards
Student Affairs
Student Conduct Advisory
Student Housing
Teacher Education
Television
University Operations
University Organization and Administration Affairs



n March of 1975 students
faculty planned the event,
es, friends and community
led to the campus, and
body enjoyed the first an-
Spring Fling which included
room and laboratory dis-
, native dancing exhibi-
and demonstrations of the
of computers and modern
ing techniques in a Univer-
etting.



SPRING FLING 75!

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 site 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 recognized 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 over 31,000 students from almost every state in the country and over 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 Association of Schools of Art
Business Administration (undergraduate)	American Association of Collegiate Schools of Business
Chemistry (undergraduate)	American Chemical Society, Committee on Professional Training
Communicative Disorders	American Speech and Hearing Association, Education and Training Board
Engineering (Civil, Electrical, Materials, Mechanical)	Engineers' Council for Professional Development
Music	National Association of Schools of Music
Nursing	National League for Nursing
Physical Therapy	American Medical Association in collaboration with the American Physical Therapy Association
Teacher Education	National Council for Accreditation of Teacher Education
Theatre Arts	National Association of Schools of Theatre

Memberships

The University holds membership in the following:

Administrative Management Society
Alliance of California Arts Councils
American Alumni Council
American Association of Collegiate Registrars and Admissions Officers
American Association of Collegiate Schools of Business
American Association for Higher Education
American Association of State Colleges and Universities
American Association of University Women
American College Public Relations Association
American College Health Association
American Council on Education
American Education Theatre Association, Inc.
American Film Institute
American Home Economics Association
American Personnel and Guidance Association
American Society for Engineering Education
American Society for Industrial Security
American Society for Training and Development
American Society of Allied Health Professions
American Theatre Association
Association for School, College and University Staffing
Association for University Business 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 Concert Managers
Association of College and University Housing Officers
Association of Departments of English
Association of Departments of Foreign Languages
Broadcast Education Association
California Association of College and University Housing Officers
California Association of Police Training Officers
California Association of Public Purchasing Officers
California Association of Women Administrators and Counselors
California Council on the Education of Teachers
California Educational Placement Association
California Intercollegiate Press Association
California Park and Recreation Society, Inc.
California Peace Officers Association
California Personnel and Guidance Association/California College Personnel Association Division
College Art Association
College Entrance Examination Board
College Placement Council
Computers in Education Division of ASEE
Consortium of Latin American Studies Programs
Council of Educational Facility Planners, International
Council of Graduate Schools in the United States
Council of Physical Therapy School Directors
Council of University Institutes for Urban Affairs

Council on Social Work Education
International Association of Chiefs of Police
International Association of College and University Security Directors
International Industrial Television Association (ITVA)
Long Beach Regional Arts Council, Inc.
Mediaeval Academy of America
National Association of College and University Business Officers
National Association for Foreign Student Affairs
National Association of Industrial Technology
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 (NASPAA/ASPA)
National Association of Student Personnel Administrators
National Association of Summer Sessions
National Collegiate Athletic Association
National Collegiate Honors Council
National Commission on Accrediting
National Institute for Financial Aid Administration
National League for Nursing
National Rehabilitation Association
National Safety Council
Pacific Association of Collegiate Registrars and Admissions Officers
Pacific Coast Athletic Association
Pacific Coast College Health Association
Peace Officers Association of Los Angeles County
Regional Planning Association of Southern California
Society for College and University Planning
Southern California Conference on the Future of International Studies
Southern California Industrial Safety Society
Tele-Communications Association
University Resident Theatre Association (URTA)
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 Economics Association
Western Region Association of Advisors for the Health Professions

Buildings and Facilities

The University is proud of its beautiful campus, featuring monumental sculpture from the first International Sculpture Symposium and its 3,200 flowering peach trees. In addition there are many modern instructional facilities designed to provide a close student-faculty interaction on what is essentially a large urban campus.

There are 55 permanent buildings which house, in addition to administrative offices, faculty offices and general classrooms, specialized award-winning facilities for theatre arts, for art, music, science, psychology, language arts, physical education, nursing, home economics, industrial arts, engineering, business and education and learning resources. Also included are the student residence halls which have received awards of merit for excellence in architectural design, an impressive University Union which is located at the crossroads of the campus and provides a focal point for the total campus community, a major Library, Bookstore, Cafeteria and Health Center.

Additional facilities under construction throughout the campus are a Student Services/Administration center near the Union, an Industrial Technology building, a two-story addition to the Student Health Center which will provide expanded health care services and a Social Science/Public Affairs Building. A tram system covering a large area of the University provides transportation from parking lots to main campus locations for the convenience of students.

The Library

The University Library is housed in a modern, six-story building. It has over 560,000 volumes and 4,552 current periodical subscriptions. The book collection is supplemented by bound periodicals, art prints, slides, sound recordings, television cassettes, micro-texts, film strips and a map collection. The Library is divided into six major subject areas: fine arts, education, humanities, social sciences, science and technology, and business and economics, with special reading rooms for each. In addition, there is a media resources library, periodicals room, reserve book room, bibliography room, graphics gallery, micro-text center, government documents collection and archives. Special services include typing rooms, copying machines, viewing and listening rooms and a computer bibliographic facility.

The University Student Union

Completed in 1972, the University Union with its large interior patios, flexible multipurpose 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 all University-related student groups and the Associated Students government and business offices, as well as the student activities area.

The Union provides an information desk which is designed to handle questions of any kind, messages and a daily calendar of events. The scheduling desk provides a central scheduling and coordinating service for the entire campus. The student activities area offers conference rooms, office space, organizational files, work and meeting space for all student groups. There are also food services with a wide variety of menus.

Cultural activities are highlighted throughout the Union in the art exhibit area, the international reading lounge with publications from around the world, the reading and music listening lounges and the Clyde Johnson Memorial Collection of College Insignias from around the world.

Recreational facilities include bowling, billiards, table tennis, table games, hobby/crafts room, television lounge, swimming pool, outdoor barbecue facilities and Arcade.

The large multipurpose room, meeting and dining rooms and small auditorium provide a variety of facilities to various organizations for banquets, luncheons and meetings, speakers and concerts.

The Forty-Niner Shops

The Forty-Niner Shops, Inc., is a nonprofit corporation which operates the University Bookstore and the University Food Service. In addition to required textbooks, the Bookstore offers reference and popular books, stationery supplies and miscellaneous items for personal use. The University Food Service, composed of the main cafeteria, residence hall cafeteria, University Union food service and the mobile chuck wagon service located at other central gathering areas on campus, provides food service for the entire University.

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.

It houses a child development and educationally related child day care program which is available to the children of students, faculty, staff and administrators. Students may enroll their children for a minimum fee and for a time period based on the number of hours which they are attending classes. Following the student registration, enrollment is open to children of faculty, staff and administrative personnel. The center is designed to meet the needs of children from ages two and a half through five years, and 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

This building, a gift of the Soroptimist Club of Long Beach, provides a facility for parties, receptions and informal meetings.

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 first 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 1952, the Alumni Association has more than 50,000 members and its major objective is to assist and advance the general welfare of California State University, Long Beach, promote good will in the community and engage in the support of 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 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 of 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 by providing continuing education programs; a variety of academic, athletic and cultural programs; library, bookstore and University Union privileges; job placement and career counseling services and University publications. Association members also receive membership in the Universal Buyers Service and participate in discount and travel programs.

Under the newly established "Fund for Excellence," the Alumni Association will be able to be of even greater aid to the University by providing financial assistance to areas of greatest need or to those specific programs designated by a donor.

Continuing Education

Extension

The University offers a variety of the courses from this *Bulletin* as well as many special classes through a comprehensive program of continuing education. A schedule of these offerings is published twice yearly, in early August and in mid-December. 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 Continuing Education.

There are two kinds of courses offered as extension classes:

Courses numbered 100 through 499 listed in this Bulletin. Credit earned in such courses offered through extension applies to degrees conferred 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.

Other offerings in continuing 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 to schedule specialized programs during the approximately three-week interval between the fall and spring semesters. This program is offered through the Office of Continuing 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.

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Fees, Financial Assistance and Expenses

Fees, Financial Assistance and Expenses

Schedule of Fees, 1975-76

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:

All Students

	Number of Units				
	1-3.9	*4-6.0*	*6.1-7.9*	*8-11.9*	12 *or more*
Student Services Fee	$51.00	$57.00	$57.00	$63.00	$72.00
Facilities Fee	3.00	3.00	3.00	3.00	3.00
Student Body Fee	6.00	6.00	10.00	10.00	10.00
University Union Fee	7.50	7.50	10.00	10.00	10.00
Total Per Semester	$67.50	$73.50	$80.00	$86.00	$95.00

Nonresidents (U.S. and Foreign)*

Nonresident tuition (15 or more units) maximum	$650.00
(less than 15 units) per unit or fraction	43.00

Summer Session

Fee per unit	$ 30.00
University Union fee per session	5.00
Student Body fee per session	1.00
Health fee per session	2.00

Extension

Extension tuition

Lecture or discussion course, per unit	$ 28.00
Activity course, per unit	36.50
Science laboratory course, per unit	56.00

Other Fees or Charges

Application (and reapplication) fee (non-refundable) payable by check or money order at time of applying	$ 20.00
Late registration fee (non-refundable)	5.00
Student identification card	1.00
Check returned for any cause	5.00
Complete transcript of record	1.00
Diploma fee	6.00
Organ practice, per student, per semester	10.00
Organ practice, per student, per summer session	per week .50
Parking fee per semester for all students	15.00
Parking fee per semester for less than four-wheeled self-propelled vehicles—automotive	3.75

Note: Nonresidents and foreign-visa students must pay tuition in addition to these required fees and expenses. The total non-resident tuition charged does not exceed $1,300 per academic year.

Residence hall room and board fee per academic year depending on type of accommodations (approximate) ..... $1,250 to $1,450

Failure to meet administratively required appointment or time limit (including but not limited to special aptitude examinations, failure to keep appointments for health examinations, special final examinations) 2.00

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 Registration

No fees of any kind shall be required of or collected from those individuals who qualify for such exemption under the provisions of the Alan Pattee Scholarship Act (Education Code Section 23762).

Student Services Fee

The student services fee provides financing for a number of programs not covered by state funding, including social and cultural development activities for students; counseling; testing; placement; financial aids administration; health services; housing information and services; and the administration of student services.

The 1975-76 student services fee is subject to change by future Board of Trustees action as required by budget actions of the State Executive and Legislature.

Refund of Fees

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 days following the start of instruction each semester; $10 shall be retained to cover the cost of registration. There is no refund for a partial withdrawal or drop in unit load.

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 refunded. Application for refund under such circumstances may be made any time before any academic credit is given for the courses for which the student is 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 refund*
(1) Before or during the first week of the semester	100%
(2) During the second week of the semester	90%
(3) During the third week of the semester	70%
(4) During the fourth week of the semester	50%
(5) During the fifth week of the semester	30%
(6) During the sixth week of the semester	20%
(7) Seventh week through the end of the semester	None

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 refund*
1-30 days	75%
31-60 days	50%
61-90 days	25%
91-end of semester	None

Associated Students Fees and University Student Union Fees

The Associated Students 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 or University Union fees because of a reduction in unit load from more than six units to six or less units.

Financial Assistance

In order to be considered for the financial aid programs administered by CSULB entering students must complete Part C of the application for admission and continuing students must complete the application procedure in accordance with the instructions on the CSULB application form.

Non-U.S. citizens are *not* eligible for consideration for financial aid unless they have been admitted to immigrant status and are classified as permanent residents. Such individuals must show their alien registration receipt card-form number I-151 (green card).

Students receiving financial aid from the University in the form of federal funds must also keep the Financial Aid Office notified of any outside grants, scholarships or loans.

Students and prospective students interested in receiving financial aid should visit the Financial Aid Office as early as possible for appropriate counseling and advice in the determination of eligibility for any of the following programs:

California Educational Opportunity Program Grants (State EOP Grants)

These grants are available to exceptionally needy undergraduate participants in the Educational Opportunity Programs of The California State University and Colleges.

Federal Supplemental Educational Opportunity Grants (Federal SEOG Grants)

Federal grants for undergraduates with exceptional financial need are available. Grants must be equally matched with loans or other financial aid disbursed by the University to meet the student's financial eligibility.

National Direct Student Loans (NDSL-formerly NDEA Loans)

Long-term loans, interest-free while in school are available also. The amount of NDSL loan awarded to eligible students each year depends upon the financial eligibility of the applicant and available funds. Students who are under 18 years of age are required to obtain co-signers for these loans. Repayment of the principal at three per cent interest begins nine months after graduation or withdrawal from post-secondary education, and may be extended over a 10-year period. There are cancellation provisions for those who teach in specified areas and types of teaching or who enter the military service.

Federal Nursing Loans

These are available to students enrolled in the Nursing Department. Applicants must have financial eligibility based upon standard criteria. There are loan cancellation provisions for those who enter the nursing profession in any public or private non-profit institution or agency.

Federal College Work-Study Program

A part-time employment program available to students who have established financial eligibility, it offers positions on the campus and in the public and private non-profit community organizations.

Law Enforcement Education Program Loans and Grants (LEEP)

Students enrolled in full-time programs leading to careers in law enforcement are eligible for loans covering the cost of fees and books. Law enforcement officers who are part-time students are eligible for grants covering the cost of fees and books. If they are on an academic leave and enrolled full-time, they are eligible for grants covering the cost of fees and books as well as for loans. LEEP loans may be cancelled at the rate of 25 per cent per year for full-time service in a public law enforcement agency.

CSULB Scholarships

Continuing students who wish consideration for scholarships *based on academic achievement* may contact the Financial Aid Office after January 1 for application forms. The application deadline is March 1. Scholarship funds are limited and usually do not exceed $200.

Federally Insured Student Loans

These long-term government-insured loans are made available through banks and other lending institutions. To receive a loan, a student must be certified as enrolled or accepted for enrollment to CSULB by the campus Financial Aid Office and must also meet the specific requirements of the Federal govenment as well as various banks or other lending institutions. Application forms and information concerning FISL loans may be obtained from the Financial Aid Office.

Basic Educational Opportunity Grants

This program of federal grants is available to eligible undergraduates. A Basic Opportunity Grant "Application for Determination of Basic Grant Eligibility" may be obtained from the Financial Aid Office. When the application is completed it must be sent with a self-addressed envelope which is attached to the application for evaluation of eligibility. At no charge to the applicant the amount of the expected family contribution is calculated. Students who receive notice of eligibility for the program must submit the notification to the Financial Aid Office in order to obtain their award.

California State Scholarships

State scholarships are grants to cover the cost of fees only and are awarded on the basis of academic achievement, promise and financial need. The scholarships may be renewed annually for students maintaining satisfactory academic progress and retaining financial eligibility for a maximum of four annual awards or until completion of an eight-semester undergraduate course, whichever is earlier. Application forms are available from the Financial Aid Office.

California College Opportunity Grants

These grants are for entering college students or for students who will not have completed more than one semester of college work (or 16 units on a part-time program). Recipients are generally, though not exclusively, ethnic minorities and come from low-income families. First-year grants are for living expenses *only* and range from $500 to $900 according to the student's need for financial assistance. Renewal grant recipients attending four-year colleges, such as CSULB, in their second, third and fourth year will be eligible to receive grants that cover tuition and fees in addition to living expenses. Application forms are available from local high schools or by writing to the California State Scholarship and Loan Commission, 1410 Fifth Street, Sacramento, California 95814.

Emergency Loans

Short-term loans up to $50 repayable during the semester are available for emergency expenses through the Financial Aid Office. Processing requires three days.

Student Part-Time Employment

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

Some scholarships are handled by the various departments. Students should consult their department office or the Financial Aid Office for information. Several financial aid programs available to students at the University which are not handled by the Financial Aid Office include the following:

Veterans Programs

The University aids students who are veterans through the following programs: Veteran Readjustment Assistance Act of 1974 (PL 93-508), Disabled Veterans (PL 87-815), Wives or Widows of Disabled or Deceased Veterans (PL 631), War Orphans (PL 634), Children of Disabled Veterans (PL 88-361), Dependents of Deceased or Disabled Veterans (California State Educational Assistance), as well as State Scholarship and State Fellowship programs and the State Vocational Rehabilitation programs. Any students wishing to use their veterans' benefits should check with the Veterans Affairs desk each semester at registration. For additional information check in the Veterans Affairs Office.

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.

Alan Pattee Scholarship

Children of deceased public law enforcement or fire service employees, who were California residents and who were killed in the line of duty, 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 23762. Students qualifying for these benefits are known as Alan Pattee scholars.

Estimated Expenses for Books and Supplies

The average expense for textbooks and other prescribed items for class use approximates $50-$65 per semester. The student should be prepared to meet these expenses at the time of registration.

Average Annual Costs and Sources of Funds Per Full-Time Equivalent* Student in the California State University and Colleges

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

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

1974-75 Total Costs of Campus Operation (Including Building Amortization)

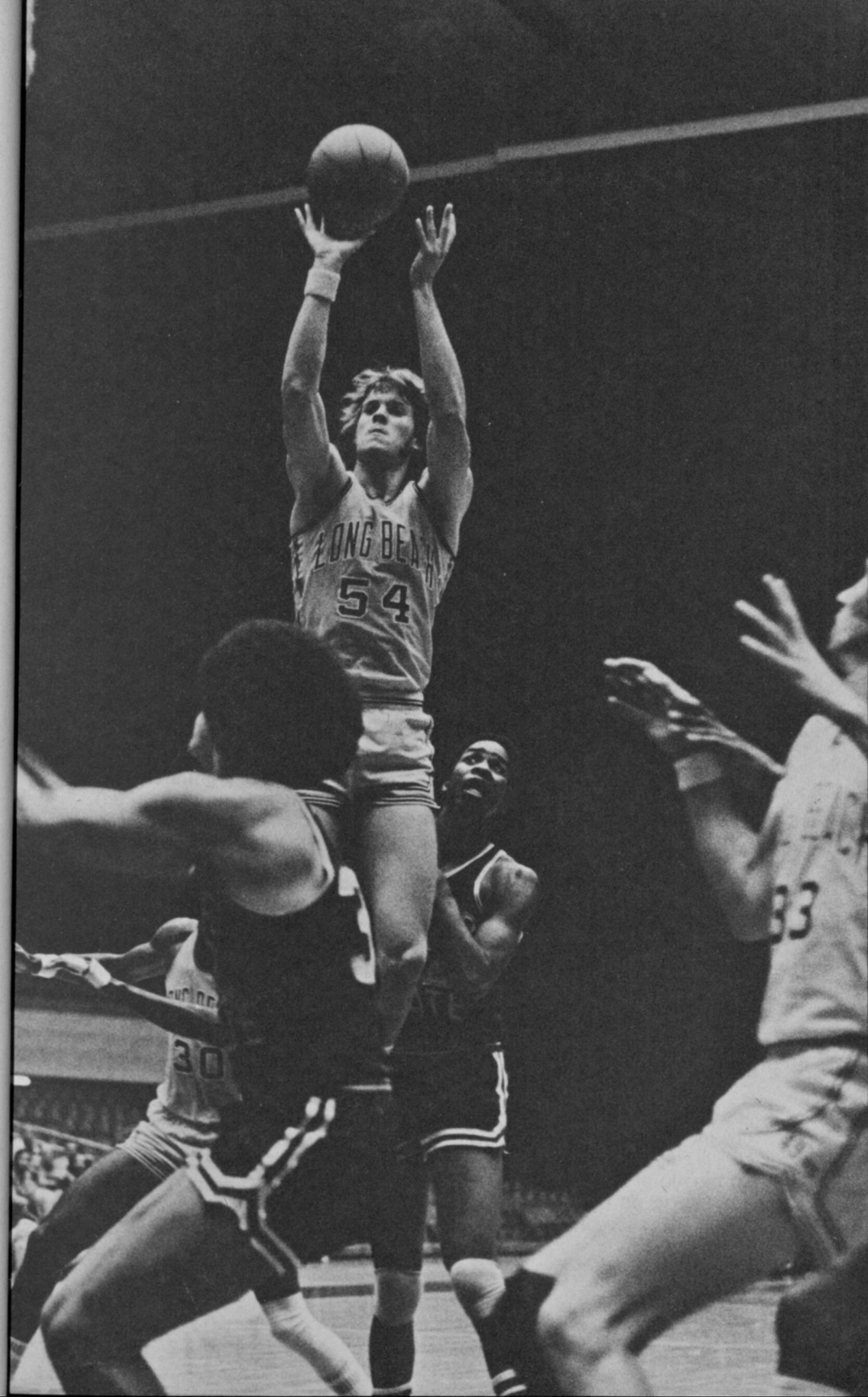
Enrollment: 231,295 FTE

Amount	Amount	Average Cost Per Student (FTE)*	Percentage
State Appropriation (Support)	$488,163,528	$2,111	81.0
State Funding (Capital Outlay)**	28,615,000	124	4.8
Student Charges	58,806,800	254***	9.7
Federal (Financial Aids)	27,456,316	119	4.5
Total	$603,041,644	$2,608	100.0

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

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

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

The Student Affairs Division provides a variety of services for students. The major components of the division are Executive-Student Affairs: Dean of Students, Career Planning and Placement, Counseling and Testing, Health Services, Housing, Intercollegiate Athletics, International Students, Student Activities, Student Development Programs 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 Association, 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 Women Returning to Campus, a year-round orientation, a leadership training program and outreach counseling programs.

The division is particularly dedicated to assisting students in times of difficulty and stress, whether the problem is academic, 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 conduct on campus.

Executive-Student Affairs: Dean of Students

The Executive-Student Affairs: Dean of Students, assisted by two Associate Deans for Student Affairs, is responsible for the management, supervision and coordination of the Student Affairs Division, including the traditional responsibilities of the Dean of Students.

Career Planning and Placement

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

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.

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.

In working with teacher candidates the Office of Career Planning and Placement gives special emphasis to liaison with local school districts. Candidates may maintain files of references which will be sent in support of educational job applications.

Counseling Center (Center for Human Development)

The staff of the University Counseling Center includes licensed psychologists and psychiatrists and offers the University community a wide range of services. These include crisis intervention, individual and group personal counseling, vocational counseling and testing; major counseling for students who have entered the University without selecting a major or wish to change majors; and educational counseling for problems related to course work, i.e., reading, note taking and test taking.

Consulting psychiatric services are available in the center and a close working relationship is maintained with the student medical services. Students requiring medication may secure it with a minimum of difficulty.

The Counseling Center also provides outreach programs such as:

Learning Assistance Center

The center offers individual and personal programs in these areas: individualized programs in reading, writing, computation and typing, preparation for GED, ACT and GRE tests; special collection of materials such as content glossaries, handbooks, outlines, programmed instruction, audio and audio-visual materials for self-learning and individualized review; diagnostic and prescriptive materials for self-help in study management, textbook study-reading, listening/note making, exam techniques, memory and concentration.

Explorations in Communication

This outreach program offers members of the University community an opportunity to meet in small groups to discuss campus issues.

Veterans Affairs Office

The Veterans Affairs Office gives students veterans educational assistance and information regarding GI Bill benefits, tutorial and learning assistance and many other subjects. It has a bulletin board which lists jobs available for veterans and coordinates special veterans' workshops on personal financial management and career guidance.

All veterans receiving benefits under Title 38 (GI Bill) must register each semester with the Veterans Affairs Office to continue these benefits. The office is open from 8 a.m. to 7 p.m. on weekdays.

Office for Women Returning to Campus

Assistance is offered to women who are beginning their college work, transferring from a community college, reentering a university after an absence of many 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. Career information for women is also available.

The Office for Women Returning to Campus is the ongoing liaison between campus and community for women. Faculty or older women students are available as speakers for community organizations, community colleges and women's centers.

Handicapped Student Services

Handicapped Student Services is concerned about the integration of disabled students into the University and the community. A number of services are available including priority registration and career planning. On request a *Campus Guide* is sent to disabled individuals intending to enter the University which lists both the goals and services of handicapped student programs, accessible entrances and exits to campus buildings and a description of various campus structures designed to assist the handicapped.

Located on the second floor of the University Student Union, the Handicapped Student Services Office is open Monday through Friday from 8 a.m. to 5 p.m. The staff is available at other times by calling 498-5361 for an appointment.

Health Services

While physical examinations are no longer required for enrollment, each new student must complete a health history record to be kept on file at the Health Service. Students enrolling in physical education assume the responsibility for satisfactory health status appropriate for class activity.

Physicians, nurses, technicians and receptionists are on duty at the Student Health Center from 8 a.m. to 5 p.m. Monday through Friday. A registered nurse is on duty from 5 p.m. to 10 p.m. Monday through Thursday for first-aid care.

During summer sessions, periods between semesters and all weekdays when classes are not in session, the Health Service provides emergency care only and is open from 8 a.m. to 5 p.m. *No off-campus calls are made at any time.*

Medical emergencies arising at any time the Health Service is closed will be directed to the Campus Police Office.

Services include physical examinations, health and psychiatric counseling, emergency care and first-aid, out-patient care for illness or injury, immunizations, physical therapy, X-ray, laboratory work and consultation in most medical specialties.

Prescriptions for costly drugs must be filled in community pharmacies, but some routine medications will be available in the Health Service. The Health Service does not issue excuses from class for injury or illness except for physical education activity classes. The decision to excuse a student from class is made by the instructor.

University medical services do not extend to major, complicated or severe illness or injury which are the responsibility of the individual student and/or his or her family. It is strongly recommended that students secure supplementary group health, accident and hospital insurance available at the Health Service at low premium. Generally, these policies must be purchased during or shortly following registration for classes.

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 and the room and board rate for the academic year is approximately $1,350-$1,500, depending on the type of accommodation. A $20 security deposit, payable at the time the rental fee is paid, is also required.

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, students who are residents of California, students under 18 years of age, students living outside a 20-mile commuting zone and entering freshmen.

Off-Campus Residence Hall

One off-campus coeducational residence hall is available for 300 students. This facility is approximately one mile from the campus and is privately owned and operated. The room and board rate for the academic year is approximately $1,400. Application forms and further information may be obtained from the Student Housing Office.

Other Off-Campus Housing

A card file of rental listings is maintained in the Student 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 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 Union.

Intercollegiate Athletics

Athletic teams of the University compete under rules of the National Collegiate Athletic Association and the Pacific Coast Athletic Association and hold membership in both organizations.

The University sponsors a diverse program of intercollegiate athletics for both men and women.

The intercollegiate program for men is governed by the rules and regulations established by the University Athletic Board of Control, Pacific Coast Athletic Association and National Collegiate Athletic Association. The intercollegiate sports offered include football, basketball, baseball, track, cross country, water polo, swimming, gymnastics, wrestling, golf, tennis and crew.

Also, men may participate in the Associated Student-sponsored soccer and rugby teams.

Women's intercollegiate sports are governed by the Association of Intercollegiate Athletics for Women and the Southern California Women's Intercollegiate Athletic Conference. Activities offered are basketball, golf, gymnastics, field hockey, swimming and diving, tennis, track and field, volleyball and coed badminton, fencing and archery.

The men's intramural program receives strong faculty support, yet is organized and controlled largely by the students. The modern and varied equipment of the physical education facility is utilized in the program which includes 25 different activities, ranging from billiards to flag football.

The women's intramural program provides all students, faculty and staff the opportunity to participate in 30 different physical activities and sports for fun and recreation. The participant may select one or more of the activities offered,

which range from Alpine skiing to volleyball, from the regular schedule or the self-directed program. Regular scheduled activities are offered at noon each Monday, Wednesday and Friday. League competition is available for women's, men's and/or coed participation at the advanced, intermediate and novice skill levels.

International 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 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 1,300 students from some 90 foreign countries attending the University. The center provides the following essential 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.

Students from abroad should review courses listed under International Student Programs (see Special Programs section). *This is especially important for learning American English and meeting certain General Education requirements.*

Community Relations

The staff and a corps of volunteers from the International Community Council for Foreign Students and Visitors work 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.

Judicial Affairs

The Judicial Affairs Office interprets and enforces campus and State regulations. In the development of campus rules and regulations contributions are sought from students, staff, faculty and administration.

Copies of *CSULB Policies, Regulations and Information,* as well as copies of the Student Disciplinary Action Procedures for The California State University and Colleges, may be obtained at the office upon request.

Student Activities

The Office of Student Activities, located on the plaza level of the University Union, offers advising to the Associated Students government and to campus clubs and organizations. Mail for campus clubs and organizations is distributed through this office.

A complete listing of currently registered organizations is kept in the Office of Student Activities. There are over 150 recognized campus organizations in the following 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. Information regarding their current officers may be obtained through the office. New campus organizations may be formed by obtaining an application from the office. Student activities coordinators assist all of the campus organizations with leadership, program and scheduling matters related to their groups.

The Student Activities staff also advises the various committees and commissions of the Associated Students. Every student pays an A.S. fee each semester which is used to support programs such as the Isabel Patterson Child Development Center, Family Planning Clinic, lectures, performing arts, films, student publications, legal aid, student departmental associations, athletics and a variety of other activities.

The Student Activities Office is interested in developing programs which meet the co-curricular needs of all students. Students are encouraged to bring suggestions and questions to the staff.

Educational Participation in the Community

One program which is funded jointly by the University, Associated Students and contributions is EPIC, a project which places over 500 student volunteers in programs of service to the Long Beach community. The program offers students

the opportunity to complement their classroom work with practical experience. EPIC offers experience in tutoring, teacher aid, pre-school aid, bilingual services, neighborhood centers, educational field trips, programs for senior citizens, cultural awareness and cultural pride. Some of the programs offer unit credit through an academic department.

During the 1975-76 academic year EPIC 297 and 497, EPIC Field Experience, will be offered on a one-year trial basis. For course descriptions see the Special Programs section of this *Bulletin.*

The EPIC office is located on the mall level of the University Union.

Fraternities and Sororities

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

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 Counc–for fraternities), Office of Student Activities, University Union.

University Radio Station

Radio station KSUL (90.1 on the FM dial) provides students the opportunity to gain practical experience in the broadcasting field. CSULB students are primarily responsible for running the station; however, faculty, staff and members of the Long Beach community also participate.

Student Development Programs

The Office of Student Development Programs (SDP) represents the consolidation of educational support services for minority and low income students. Programs currently under SDP include the Educational Opportunity Program (EOP), Chicano Bilingual Special Services, Student Special Services and the Upward Bound program. These programs are designed to facilitate admissions and assist minority and low income high school and junior college students who have the potential to succeed in college.

The Educational Opportunity Program attempts to identify potential candidates, guide them through the admissions process, assist in the procurement of financial assistance and supply academic and personal support with the hope that the student will develop the skills and sensitivity required in providing expertise and leadership to his or her community. Admission into EOP is made on the basis of financial need and academic potential rather than past scholastic achievement.

SDP, through EOP and the Student Special Services program, offers counseling, tutorial and instructional services to each student admitted through the Educational Opportunity Program to insure maximum opportunity for success in the University. Each student is assigned a student counselor for information and assistance with any academic or personal problems. In addition, individual and group tutorial sessions and EOP sponsored orientation classes in basic skills and academic subject areas are available.

The Chicano Bilingual Special Services Program provides bilingual tutorial and learning skills assistance to Mexican-American students in need of upgrading communication through a dual language framework. Academic assistance is given in both Spanish and English.

The Upward Bound project is a pre-college preparatory program designed to identify and assist minority and low income 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 skills with tutorial and counseling assistance given to each student. The program also facilitates these students' admission into college and provides pre-counseling and orientation. Presently the Upward Bound project is working with four local high schools: Artesia, Centennial, Excelsior and 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 school counselors or the Testing Office at California State University, Long Beach.

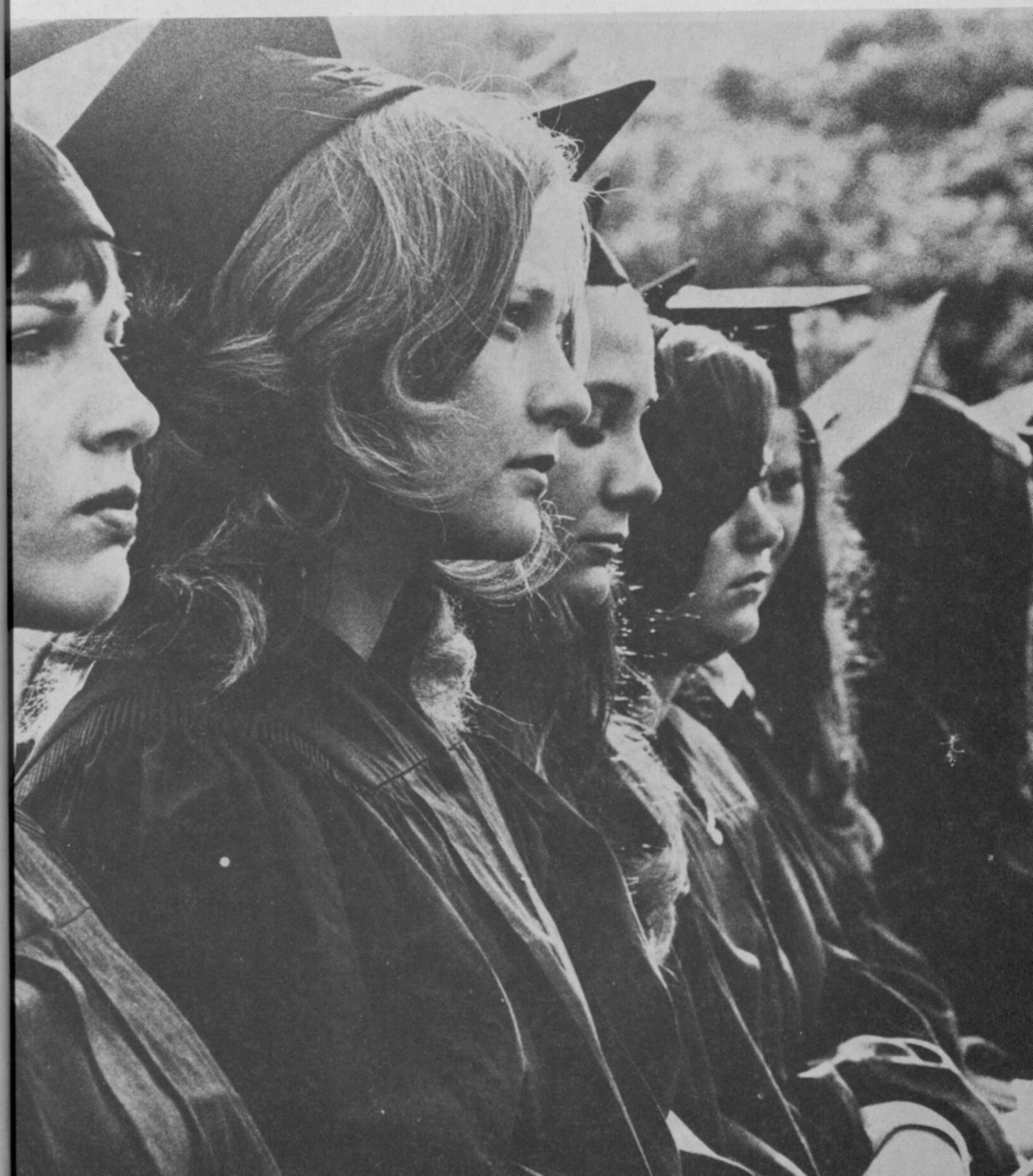
Candidates for the Elementary Education Department or school nursing programs are required to take the Aptitude part of the Undergraduate Record Examination.

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

The Mathematics Placement Test is required of all students who take certain math courses as department requirements or course prerequisites. Students should check specific requirements in the University *Bulletin*. Exceptions: Students who plan to enter Mathematics 100 or who have satisfactorily completed a college course in calculus within the past four years.

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.

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



Admission to the University

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 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.

School Relations Office

The School Relations Office provides information about the University and its academic programs to educators 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 the instructional offerings. Educators, counselors and students wishing to visit the campus should contact this office at 498-5358 for appointments.

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 non-refundable application fee should be in the form of a check or money order payable to The California State University and Colleges. Undergraduate applicants may file only at their first choice campus. Alternate choice campuses and majors may be indicated on the application, but *applicants should list as alternate campuses only those campuses of The California State University and Colleges that they will attend if their first choice campus cannot accommodate them.* Generally, alternate degree majors will be considered at the first choice campus before an application is redirected to an alternate choice campus. Applicants will be considered automatically at the alternate choice campus if the first choice campus cannot accommodate them. *Transcripts and other supporting documents should not be submitted until requested by the campus.*

Category Quotas and Systemwide Impacted Programs

Application category quotas have been established by some campuses, in some majors, where the number of applicants is expected to exceed campus resources. All applications received in the initial filing period will receive equal consideration for such categories. A small number of undergraduate programs are impacted throughout the 19-campus system, and applicants to such programs are expected to meet supplementary admission criteria for admission to these programs. These programs are identified and announced each fall. Applicants will receive from the campuses further information about the supplementary admission criteria to be used and how and when applicants can meet them. Applicants to impacted programs must apply during the initial filing period.

Post-Baccalaureate Application Procedures

All applicants for any type of post-baccalaureate status (e.g., master's degree applicants, those seeking credentials and those interested in taking courses for professional growth, etc.) must file a complete application within the appropriate filing period. *Second baccalaureate degree aspirants should apply as undergraduate degree applicants.* 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 non-refundable application fee. Since applicants for post-baccalaureate programs may be limited to the choice of a single campus on each application, redirection to alternative campuses or later changes of campus choice will be minimal. In the event that a post-baccalaureate applicant wishes to be assured of initial consideration by more than one campus, it will be necessary to submit a separate application (including fee) to each. 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.

Application Filing Periods

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

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

Application Acknowledgement

All applications filed with the Admissions Office are acknowledged. Applicants who can be accommodated are requested to arrange to have appropriate records forwarded promptly to the Admissions Office and will receive a notice of acceptance once eligibility has been determined.

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 contact 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. The full table of grade point averages, with corresponding test scores and the equation by which the index is computed, is reproduced on p. 64. Test results of either the CEEB Scholastic Aptitude Test (SAT) or the American College Testing Program examination (ACT) are acceptable in establishing eligibility.

Registration forms and test dates for either test may be obtained from school or college counselors, from the following addresses, 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
Iowa City, Iowa 52240

SAT Address

College Entrance Examination Board
P.O.Box 1025
Berkeley, California 94770

First-Time Freshmen (California high school graduates and residents)

An applicant who is a graduate of a California high school or a legal resident for tuition purposes must have an eligibility index which places him or her among the upper *one-third* of California high school graduates. The minimum acceptable index for applicants using the SAT score is 3072; using the ACT score, 741.

First-Time Freshmen (high school graduates from other states and U.S. possessions)

The admissions requirements for non-resident applicants are more restrictive than those for California residents. An applicant who is a non-resident for tuition purposes and is a graduate of a high school outside California must have an eligibility index which places him or her among the upper *one-sixth* of California high school graduates. The minimum acceptable index for non-resident applicants using the SAT score is 3402; using the ACT score, 826.

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

An applicant who is over 18 years of age, but who has not graduated from high school, 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 Transfers (resident and non-resident)

Beginning fall term 1974, transfer eligibility is based on *transferable* college units attempted, rather than on *all* college units attempted. The California Community College transfer should consult a college counselor for information on transferability of courses. Applicants in good standing at the last college attended may be admitted as undergraduate transfers if they meet either of the following requirements:

1. They were eligible for admission in freshmen standing (see First-Time Freshmen requirements) and have earned an average grade of C (2.0 on a scale where A = 4.0) or better in all transferable college units attempted.
2. They have completed at least 56 transferable semester units or 84 transferable quarter units with an average grade of C (2.0 on a scale where A = 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 TOEFL score, a medical certificate of health, and evidence of financial resources adequate to provide for all expenses (approximately $330 United States currency per month) during the period that they expect to be registered as a student in the University.

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 enroll 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.

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 register 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 courses offered. Adults who do not wish to enroll 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 (C) in all acceptable college work attempted.
3. They were in good standing at the last college attended.
4. They can, in the judgment of the University, succeed in that degree objective.

Returning Students

Any student previously enrolled in the University who has been absent more than one semester, or who has attended college during the absence from CSULB, must 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 University are also required to follow the procedure for new students.

Any student who has been absent for no more than one semester who enrolled at the University and withdrew or otherwise left the University before the end of the fourth week of instruction, must file a complete application with the Admissions Office for admission the following semester. The application fee will be 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 freshman 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 the 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 ACT = 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 composite ACT score.

G.P.A.	A.C.T. Score	S.A.T. Score	G.P.A.	A.C.T. Score	S.A.T. Score	G.P.A.	A.C.T. Score	S.A.T. 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	(—)[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 semester 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 catalog.

Admission of Post-Baccalaureate and Graduate Students

Post-Baccalaureate Standing. Unclassified.

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

Post-Baccalaureate Standing. Classified.

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

Graduate Standing. Conditionally Classified.

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

Graduate Standing. Classified.

A student who is eligible for admission to a 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 and Research.

Extension and Military Credit

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 credit may not be used to fulfill the minimum residence requirement.

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

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 Admissions Office. 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 Admissions Office.

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 semester units of college credit appropriate to the curriculum in which the student enrolls.

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.

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.

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 or more, seniors.

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 the residence questionnaire has been received by the Admissions Office.

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

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

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

The general rule is that a student must have been a California resident for at least one year immediately preceding the residence determination date in order to qualify as a "resident student" for tuition purposes. 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 1975-76 academic year are September 20, 1975 and January 25, 1976. If you have any questions respecting the applicable date, the Office of Admissions and Records can give you the residence determination date for the term for which you are registering.

There are several exceptions for 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 credentialed, full-time employees of school districts.
8. Full-time State University and Colleges employees and their children and spouses. This exception applies only for the minimum time required for the student to obtain California residence and maintain that residence for a year.
9. Certain exchange students.
10. Children of deceased public law enforcement or fire suppression employees, who were California residents, and who were killed in the course of law enforcement or fire suppression duties.
11. A person in continuous full-time attendance at an institution who had resident classification on May 1, 1973, shall not lose such classification as a result of adoption of the uniform student residency law on which this statement is based, until the attainment of the degree for which currently enrolled.

Any student, following a final decision on campus on the residence classification, may make written appeal to:

The California State University and Colleges
Office of General Counsel
5670 Wilshire Blvd.
Suite 1260
Los Angeles, Calif. 90036

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

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

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*.

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.

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 Dean of Admissions and Records.

General Regulations and Procedures

Notice

The Board of Trustees of The California State University and Colleges, in Section 43800 of Title 5 of the *California Administrative Code,* has reserved the right to add, amend, or repeal any of its regulations, rules, resolutions, standing orders and rules of procedures, in whole or in part, at such time as it may choose. None shall be construed, operate as, or have the effect of an abridgement or limitation of any rights, powers or privileges of the Trustees. The Chancellor reserves the right to add, amend or repeal any of his Executive Orders, at such time as he may choose, and the President of California State University, Long Beach reserves the right to add, amend or repeal provisions of this catalog and rules of the University, including handbooks, at such time as he may choose. No Executive Order shall be construed, operate as, or have the effect of an abridgement or limitation of any rights, powers or privileges of the Chancellor nor shall any catalog provision or rule of the University be construed, operate as, or have the effect of an abridgement or limitation of any rights, powers or privileges of the President.

Every effort has been made to assure the accuracy of the information in this catalog. Students are advised, however, that such information is subject to change without notice. Therefore, they should consult the appropriate instructional departments, schools or administrative offices for current information.

Grades and Administrative Symbols

General Policy

1. 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.
3. Instructors are expected to keep a record of students' scores on each of the demonstrations of competence on which the final grade is based.
4. Students have a right to be informed promptly of their scores on each of these demonstrations of competence.
5. Instructors are expected to provide students with an opportunity for 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 the semester or summer 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.

Grades

Students' work in each course is recorded in the Records Office on one of seven grades. Five indicate successful completion of the course and the work assigned in it; A (excellent), B (above average), C (average), D (below average), CR (credit-evaluation of work at A, B or C level of competence). If students do not successfully complete a course, they will be assigned a grade of F (failing) or, if they requested to be graded on the credit/no credit basis, a grade of NC (no credit). 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).

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. 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 offst 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 student in residence at CSULB in any class or classes he or she chooses, 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 courses 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 CR/NC units.

To receive a grade of CR or NC for a class in which they are enrolled, students must inform the Registrar 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 enrólled 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 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 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. One copy of the agreement is to be given to the student and one copy is to be filed with the department chairperson.* 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 "I" 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.

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 to record progress in 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 Records Office whether he or she has ever attended the class or not; otherwise, the student will receive a grade of "F" in the course. Application for withdrawal is made at the Records Office or, in the evening, at the Information Desk in the Administration Building.

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. Copies of such approvals are kept on file in the 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 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 Records Office.

4. **Medical withdrawals.** A student who becomes seriously ill or is hospitalized and hence is unable to complete the academic term may withdraw by submitting a written request to the University Health Service from the attending physician stating the medical diagnosis and the last date of attendance in class. The Health Service, after approving such a request, will forward its recommendation to the Records Office.

5. **Unofficial withdrawals.** A student withdrawing unofficially from a class or from the University will receive failing grades in all courses which he or she stops attending. An unofficial withdrawal is one in which a student stops attending classes without filing official withdrawal forms.

6. **Instructor withdrawals.** An instructor *may* withdraw a student who has never attended a class within the first four weeks of instruction by forwarding an instructor's withdrawal card to the Records Office. Students, however, should not rely on the instructor's doing this and should officially withdraw from classes themselves to avoid getting "F'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.

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

Final Grade Reports

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

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, capriciously or unjustly 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 is 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 school grade appeals committees 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

A student who has received a grade of D, F or NC 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 or NC grade will be omitted from the computation of units attempted and grade points earned. Subsequent repetitions 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.

The student must 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 chairman of the department in which the course is offered.

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

Scholastic Probation and Disqualification

Academic Probation

Undergraduate students are placed on academic probation if at any time their cumulative grade point average in all college work attempted *or* their cumulative grade point 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.

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 term.

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	*Progress Point Computation*
A receives 4 points per unit	A receives 4 points per unit
B receives 3 points per unit	B receives 3 points per unit
C receives 2 points per unit	C receives 2 points per unit
D receives 1 point per unit	D receives 1 point per unit
F receives 0 points per unit	F 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 semester 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-academic 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 administrative-academic 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

A student who is disqualified from California State University, Long Beach has usually been on probation one or more semesters. Following disqualification the student must demonstrate his or her scholastic ability and desire to complete an academic program by reducing the grade point deficiency by one-half through summer session, extension classes, or attendance at another college. After reducing the grade point deficiency by one-half, the student may then petition the University Scholastic Standards Committee for readmission. It is to be noted that all courses taken while the student is disqualified must be acceptable for degree credit and that grade points earned at another institution do not offset grade point deficiencies at California State University, Long Beach.

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 in GPA computation, *are included in progress point* computation.

STUDENT A

REGISTERED UNITS			PERFORMANCE		
CR/NC	Letter graded	Total registered units	Grades	Progress points	Grade points
3			NC	..	..
3			NC	..	..
	3		A	12	12
	3		A	12	12
6	6	12		24	24

Progress OK since student earned 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 excellent record sustains them.

STUDENT B

REGISTERED UNITS			PERFORMANCE		
CR/NC	Letter graded	Total registered units	Grades	Progress points	Grade points
3			CR	6*	..
3			NC	..	..
	3		B	9	9
	3		B	9	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

REGISTERED UNITS		PERFORMANCE		
CR/NC	Letter graded	Total registered units	Grades	Progress points	Grade points
	3		C	6	6
	3		D	3	3
	3		C	6	6
	3		C	6	6
	12	12	C	21	21

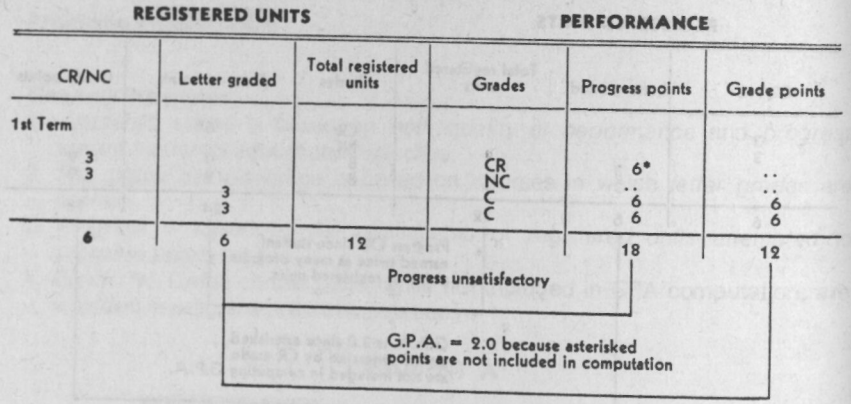
Progress unsatisfactory since student did not earn twice as many progress points as registered units

G.P.A. = 1.75

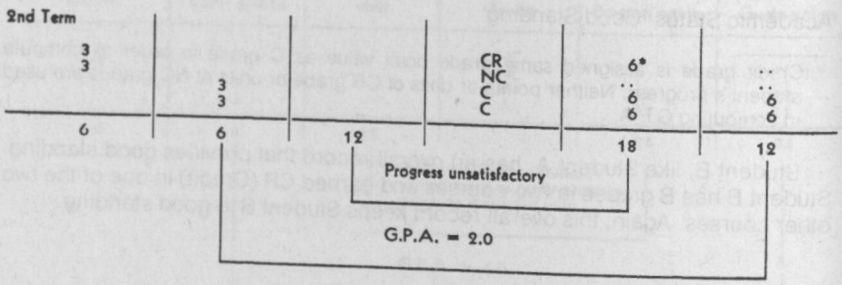
Academic Status: Probation

Student C is on probation both on progress points and grade points.

STUDENT D



Academic Status: placed on Academic Probation



Academic Status: Academic Disqualification

° 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 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

Grade or symbol	Units attempted	Units earned	Grade-point value	Progress-point value
Traditional Grades				
Satisfactory				
A	Yes	Yes	4	4
B	Yes	Yes	3	3
C	Yes	Yes	2	2
Unsatisfactory				
D	Yes	Yes	1	1
F	Yes	No	0	0
Non-Traditional Grades				
CR (Credit)	No°	Yes	0	2°
NC (No Credit)	No°	No	0	0°
Administrative Symbol				
I (Incomplete)	No	No	0°°	0°°
W (Withdrawal)	No	No	0	0
AU (Audit)	No	No	0	0
SP (Satisfactory Progress)	No	No	0	0
RD (Report Delayed)	No	No	0	0
Totals	Used in GPA	Counted Toward Objective	Used in GPA	Counted Toward Progress

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

°° If not completed within one calendar year, the "I" will be counted as an "F" for grade 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	16
First Semester Freshmen	17
Students on Academic Probation	17
All Other Students	18
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.

Students subject to Selective Service regulations should inquire about current rules governing the unit load required for postponement of induction. Veterans should inquire about unit load requirements for state and federal benefits.

For graduate student load, see *Graduate Bulletin.*

Undergraduate international students on non-immigrant visas must carry and complete a minimum of 12 units per semester unless a reduced 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 Executive—Student Affairs: Dean of Students. 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. 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 Director of Academic Planning.

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 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 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 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 October 1; for February and summer session graduates, by the preceding February 15 at the 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. Application for student teaching, for field work in administration and supervision, and for field work in pupil personnel services must be made during the semester preceding that in which the student expects to enroll for these programs.

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 for the state university or college of which he is a student, any student of a state university or college may be expelled, suspended, placed on probation or given a lesser sanction for one or more of the following causes which must be state university or college related:

(a) Cheating or plagiarism in connection with an academic program at a state university or college.

(b) Forgery, alteration or misuse of state university or college documents, records, or identification or knowingly furnishing false information to a state university or college.

(c) Misrepresentation of oneself or of an organization to be an agent of a state university or college.

(d) Obstruction or disruption, on or off university property, of the state university or college educational process, administrative process, or other university function.

(e) Physical abuse on or off university property of the person or property of any member of the university community or of members of his family or the threat of such physical abuse.

(f) Theft of, or nonaccidental damage to, state university or college property; or property in the possession of, or owned by, a member of the university community.

(g) Unauthorized entry into, unauthorized use of, or misuse of state university or college property.

(h) On state university or college 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 weapons on state university or college property or at a state university or college function without prior authorization of the state university or college president.

(j) Engaging in lewd, indecent, or obscene behavior on state university or college property or at a state university or college function.

(k) Abusive behavior directed toward a member of the university community.

(l) Violation of any order of a state university or college 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 university or college community" is defined as meaning state university or college Trustees, academic, nonacademic and administrative personnel, students, and other persons while such other persons are on state university or college property or at a state university or college function.

(2) The term "state university or college 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 state university or college feeding, retail, or residence facilities whether operated by a university or college or by a state university or college auxiliary organization.

(3) The term "deadly weapons" includes any instrument or weapon of the kind commonly known as a blackjack, slung 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.

(o) This Section is not adopted pursuant to Education Code Section 23604.1.

(p) The provisions of this Section as hereinabove set forth only apply to acts and omissions occurring subsequent to its effective date. 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 state university or college 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 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 is suspended, no additional tuition or fees shall be required of the student on account of his suspension. In the event that a student who has not reached his twenty-first birthday is suspended or expelled, the President shall immediately notify his 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 following is extracted from Student Disciplinary Procedures of The California State University and Colleges, as revised by Executive Order No. 148, March 8, 1972:

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 his 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, Regulations and Information" handbook published by the Dean of Students Office.

Additional detailed information relating to Conduct on Campus is available in the Executive—Student Affairs: Dean of Students Office and the Office of the Associate Dean of Students—Judicial 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 this occur, sections 42380 and 42381 of Title 5 of the *California Administrative Code* authorize the University to 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. For example, under these provisions the University may withhold permission to register, and may withhold other services, such as grades and transcripts. If a student believes that he or she does not owe all or part of a particular fee or charge, 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.

General Education

Rationale

The education students receive at this institution will be enhanced by an understanding of the goals which the general education requirement is designed to serve. This rationale is provided in the belief that understanding will lead to informed choices among the many courses available.

Because students spend only a small percentage of their adult lives in formal and organized academic preparation, higher education can only be—at best—an introduction and an incentive to lifelong learning and to intelligent participation in the problems and achievements of society. With that in mind the University has sought to provide that each student will encounter and have an opportunity to absorb these aspects of general education:

—Information: the raw material for thinking, analysis, reflection and discourse

—Methods of Inquiry: a training of the intellect in the varieties of methodology developed in the several discipline categories

—Basic Skills: 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

—Qualities of Mind: 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.

The academic major which each student selects is designed to provide training in depth within a single discipline. The provision in most majors for a substantial number of free electives allows students to follow personal interests. Beyond both of 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, with special emphasis on general education, throughout the year

(2) A *General Education Booklet* which provides an introduction to the requirements, discusses the goals and offers some carefully planned "packages" of general education courses

(3) A special listing, in the *Schedule of Classes*, of those courses which the faculty have identified as particularly appropriate for meeting the general education requirement.

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 certain breadth requirements. These minimum requirements consist of 40 semester units (60 quarter 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 requirements.

Each campus in the CSUC system has the right to define which of its classes satisfy general education requirements, to determine which courses are transferable from other institutions (except where full credit has been certified), to add requirements which apply to native and transfer students alike, and to enact other limitations. At this University it is the policy 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 whole, various routes are available. The Liberal Studies core program (see Special Programs) satisfies all of the general education requirements.

Courses in academic programs which cross traditional disciplinary lines may be taken to meet appropriate category requirements. If an individual interdisciplinary course qualifies for credit in more than one category, a student may choose which requirement the course fulfills, provided that choice is made no later than the end of the semester preceding graduation.

All of these possibilities are subject to the following limitations. At least 32 of 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 ethnic studies 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 units) in the Departments of Biology (which includes anatomy and physiology, biology, botany, entomology and zoology); Chemistry; Geology; Microbiology or Physics (which includes astronomy and physical science). At least one laboratory science course must be included.

Courses in departments, programs or areas, other than those specified above, which earn students credit in this category are expressly identified as carrying category I credit in this *Bulletin* and in the *Schedule of Classes*.

II. *Social Sciences*—Two or more courses (totaling six or more units) in the Departments of Anthropology, Economics, Geography, History, Political Science, Psychology, Social Welfare or Sociology or offered by the Center for Urban Studies, exclusive of any courses chosen to satisfy the requirements of U.S. History, Government and Constitution, included in category V.

Courses in departments, programs or areas, other than those specified above, which earn students credit in this category are expressly identified as carrying category II credit in this *Bulletin* and in the *Schedule of Classes*.

III. *Humanities*—Two or more courses (totaling six or more units). One of these must be either a philosophy course (offered by the Philosophy Department), a religious studies course (offered by the program of Religious Studies) or a literature course offered by one of the following departments: English, Comparative Literature, French-Italian, German, Russian and Classics or Spanish-Portuguese.

A second course in this category must be an appropriate course in one of the following departments: Art, Dance, Music or Theatre Arts. (The departments named will decide which of their courses are appropriate.)

Courses in departments, programs or areas, other than those specified above, which earn students credit in this category are expressly identified as carrying category III credit in this *Bulletin* and in the *Schedule of Classes*.

IV. *Basic Communication*—Two or more courses (totaling six or more units) in English composition, foreign language (other than literature courses), journalism, mathematics, radio-television, speech communication or statistics, exclusive of any course chosen to satisfy the English composition requirement included in category V.

Courses in departments, programs or areas, other than those specified above, which earn students credit in this category are expressly identified as carrying category IV credit in this *Bulletin* and 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*—A maximum of eight units may be selected from courses offered by any departments other than those in the School of the student's major. However, units in health science and physical education may be elected under this option by all students except health science and physical education majors. Courses for this category are available in the School of Applied Arts and Sciences, Business Administration, Education and Engineering as well as in the School of Fine Arts and the School of Letters and Science.

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 preceding 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. See page 104 for a list of majors.

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. Minor

A minor is not generally required for the baccalaureate degree, but students may elect to complete one or more minors from those available and have that so noted on their transcript. 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.

5. Requirements in United States History, Constitution and American Ideals

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.

6. Units

A total of 124 units is required for the bachelor of arts and the bachelor of vocational 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.

7. 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 24-unit residence requirement.

8. 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.

9. Scholarship

The minimum scholarship requirement for the bachelor's degree is a grade point average of 2.0 (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.

10. Residence

A minimum of 24 semester units shall be earned in residence in the University. At least one-half of these units shall be completed among the last 20 semester units counted toward the degree. This requirement may be reduced for active military duty and for attendance at other California State University or Colleges. Credit in summer sessions may be substituted for regular session unit requirements on a unit for unit basis. Extension credit or credit by examination may not be used to fulfill the minimum residence requirement.

11. 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.

12. 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

Cum Laude—Students eligible for a bachelor's degree who have attained an overall grade point average of 3.0 on all college units attempted may be graduated *Cum Laude* provided that they have also completed a minimum of 45 units at this University with a 3.0 average or higher.

Magna Cum Laude—Students eligible for a bachelor's degree who have attained an overall grade point average of 3.5 on all college units attempted may be graduated *Magna Cum Laude* provided that they have also completed a minimum of 45 units at this University with a 3.5 average or higher.

Summa Cum Laude—Students eligible for a bachelor's degree who have attained an overall grade point average of 3.75 on all college units attempted may be graduated *Summa Cum Laude* provided that they have also completed a minimum of 45 units at this University with a 3.75 average or higher.

Honor Lists

Undergraduate students exhibiting outstanding scholastic achievement are honored by being included on the President's or Deans' Honor List. Certificates are awarded once a year after the spring semester. Full-time undergraduate students who have completed 12 or more units each semester during the current academic year are considered. Those with a GPA of 3.50 to 4.00 for the current academic year are included on the President's List, those with a GPA of 3.00 to 3.49 are recognized by the Dean of the School in which the student is a major. Certificates for undeclared majors are sent by the Office of Executive-Student Affairs: Dean of Students. Questions concerning eligibility for these lists should be directed to the Registrar's Office.

The University has created the Graduate Dean's List of University Scholars and Artists to recognize the top students among its graduate enrollment.

Nominees are selected annually by the Schools of Applied Arts and Sciences, Business Administration, Education, Engineering, Fine Arts and Letters and Science. The number considered from each school does not exceed one percent of the school's graduate student population.

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

Bachelor of Fine Arts Degree

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
Chemistry
Criminal Justice
Earth Science
Geology
Health Science
Industrial Technology
Marine Biology
Microbiology
Physics
Zoology

Bachelor of Science Degree in Business Administration

Accounting
Administrative Systems
Finance
Management
Manpower Management
Marketing
Operations Management
Quantitative Methods

Bachelor of Science Degree in Chemical Engineering

Bachelor of Science Degree in Dietetics and Food Administration

Bachelor of Science Degree in Engineering

Civil Engineering
Computer Engineering
Electrical Engineering
Engineering Materials
Industrial Management
Mechanical Engineering
Ocean Engineering

Bachelor of Science Degree in Industrial Design

Bachelor of Science Degree in Nursing

Bachelor of Science Degree in Physical Therapy

Bachelor of Vocational Education Degree

4—87613

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 freshmen 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 to 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.

Graduate Credit in Senior Year

Graduate credit normally may not be earned in advance of the baccalaureate degree. However, based upon faculty recommendation, academic performance (normally 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 upper division course work to be applied as post graduate credit. A petition to do so must be filed with the school graduate coordinators or associate deans of graduate study in the Schools of Applied Arts and Sciences, Business Administration, Education or Engineering, prior to the beginning of the last semester of the senior year. Until the Schools of Fine Arts and Letters and Science obtain graduate accountability, the dean of graduate studies will continue to process all such petitions after referral for recommendations to the graduate coordinator in the academic area concerned. In those areas where graduate credit is for the credential only, such petition must be filed with the associate dean of professional programs and services in the School of Education. A copy of the approval specifying the course(s) is to be forwarded to the registrar. Any course to be applied as graduate credit must be specified and must be taken in addition to those needed to satisfy the bachelor's degree requirements. Any change in the degree or credential objective carries with it the requirement that any course so taken be reviewed for applicability to the new objectives.

Graduate level courses (500 and 600), listed without descriptions, are not open to students without an acceptable baccalaureate degree, but a senior with an overall grade point average of "B" or better may, under very special conditions and only with the prior permission of the instructor, the recommendation of his department and the approval of the dean of graduate studies, enroll in a course in the 500 to 599 series. However, graduate courses completed before the attainment of a bachelor's degree under these conditions will not be accepted as partial fulfillment of minimum requirements in the 500-600 series for the master's degree. Courses on the 600 level are only open to graduate students who have already attained an acceptable baccalaureate degree.

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 an "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 Education requirements or requirements for majors, minors or credential 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.

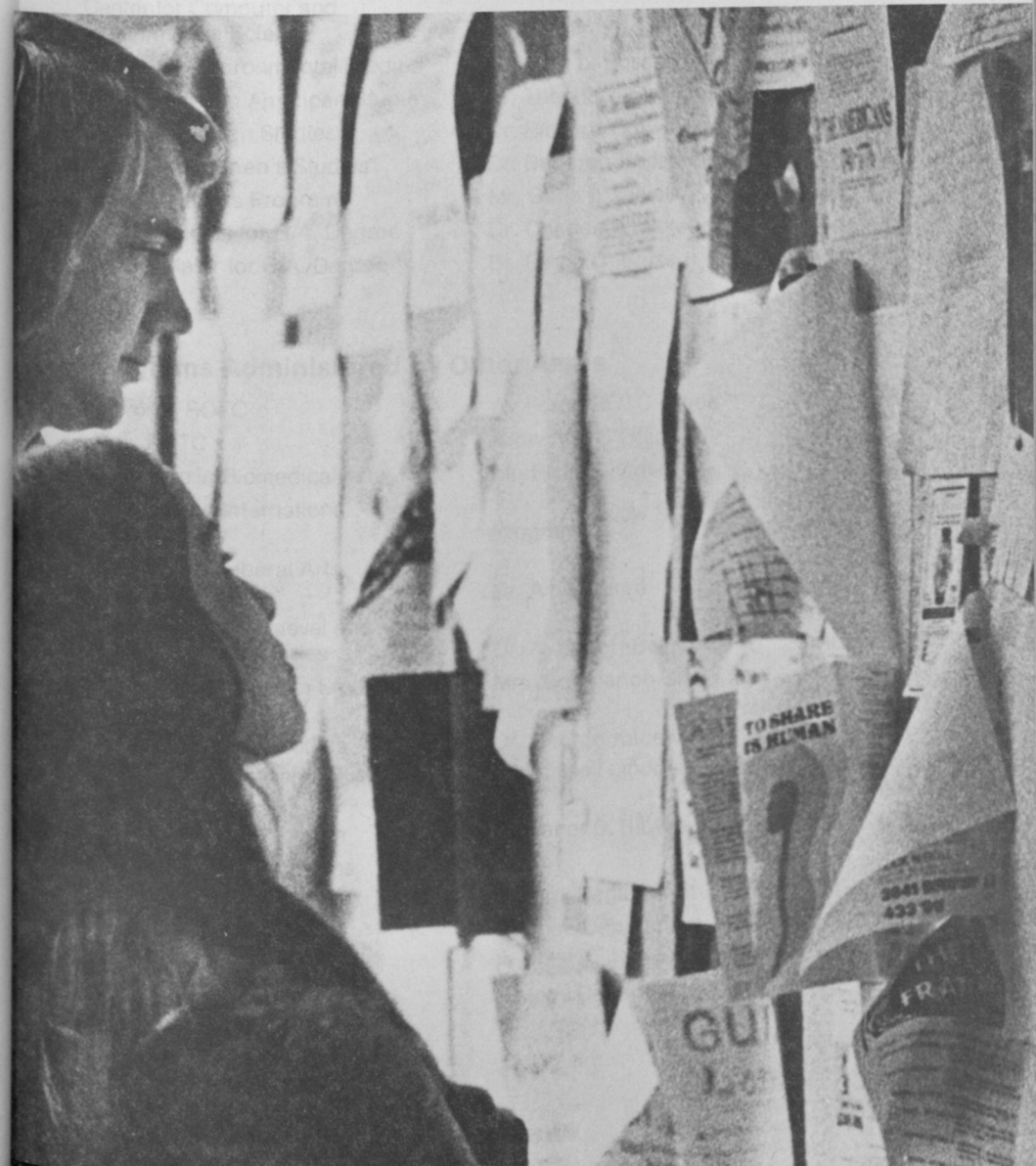
Course Listings

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. The University reserves the right to make changes in course offerings without notice.

Degree Requirements for Baccalaureate Degree Program

Major	
American Studies	Page 343
Anthropology	Page 345
Art	Page 304
Biology	Page 355
Black Studies	Page 401
Botany	Page 355
Business Administration	Page 217
Chemical Engineering	Page 273
Chemistry	Page 366
Civil Engineering	Page 276
Communicative Disorders	Page 371
Comparative Literature	Page 375
Criminal Justice	Page 144
Earth Science	Page 420
Economics	Page 380
Electrical Engineering	Page 284
English	Page 386
Entomology	Page 355
French	Page 410
Geography	Page 414
Geology	Page 419
German	Page 425
Health Science	Page 149
History	Page 435
Home Economics	Page 155
Industrial Arts	Page 166
Industrial Design	Page 306
Industrial Technology	Page 178
Journalism	Page 444
Liberal Studies	Page 121
Marine Biology	Page 355
Mathematics	Page 449
Mechanical Engineering	Page 291
Mexican American Studies	Page 405
Microbiology	Page 456
Music	Page 320
Nursing	Page 184
Philosophy	Page 461
Physical Education	Page 189
Physical Therapy	Page 202
Physics	Page 466
Political Science	Page 474
Psychology	Page 482
Radio-Television	Page 491
Recreation	Page 206
Russian	Page 429
Social Welfare	Page 497
Sociology	Page 501
Spanish	Page 506
Special Major	Page 123
Speech Communication	Page 512
Theatre Arts	Page 330
Vocational Education	Page 209
Zoology	Page 355

Special Programs



Special Programs

Administrative Officer

Dr. Byron C. Kluss	Director of Special Programs	Psych. 116

Directory of Programs

Program	*Director*	*Office*
Center for Asian Studies	Dr. Sharon L. Sievers	Psych. 127
Center for Computer and Information Science	Dr. William Spraglin	Psych. 116
Center for Environmental Studies	Dr. Ruth L. Russell	Psych. 116
Center for Latin American Studies	Dr. Theodore E. Nichols	Psych. 127
Center for Urban Studies	Dr. Richard Outwater	Psych. 127
Center for Women's Studies	Dr. Deborah Rosenfelt	Psych. 125
General Honors Program	Mr. Gene L. Dinielli	Psych. 122
Liberal Studies for B.A. Degree	Dr. Charles W. Pomeroy	Psych. 116
Special Major for B.A. Degree	Dr. Byron C. Kluss	Psych. 116

Programs Administered by Other Areas

Air Force ROTC	Air Force ROTC Office	USC
Army ROTC	Army ROTC Office	UCLA
Certificate in Biomedical Art	Mr. Richard Oden	FA2-202
Certificate in International Business	Program Coordinator	FO3-102
Certificate in Liberal Arts Legal Studies	Dr. Albie Burke	FO2-106
Certificate in Mediaeval and Renaissance Studies	Dr. A. Robert Bell	HOB-608
Certificate in Museum Studies	Mrs. Constance Glenn	FA3-103
Certificate in Russian-East European Studies	Dr. George Kacewicz	FO5-108
International Programs	Dr. Russell Lindquist	International Center
Linguistics M.A. Program	Dr. Janet B. Sawyer	HOB-408
Preprofessional Programs		
Pre-Dental	Biology Department	SC1-109
Pre-Legal	Finance Department	FO3-340
	Political Science Department	FO5-103
Pre-Medical	Biology Department	SC1-109

Center for Asian Studies

Director: S. Sievers.

Professors: H. Carr, Ph.D.; S. Chawla, Ph.D.; J. Covell, Ph.D.; J. Kimura, Sc.D.; A. Lipski, Ph.D.; R. McKay, M.A.

Associate Professors: I. Aall, Ph.D.; C. Furth, Ph.D.; H.I. Kim, Ph.D.; D. Libby, Ph.D.; A. Marsot, Ph.D.; G. Shoup, Ph.D.; S. Sievers, Ph.D.

Assistant Professors: M.Debysingh, Ph.D.; T. Ishimine, Ph.D.; A. Miyazaki, M.A.

A program in Asian studies has been established to encourage and promote the study of Asian cultures and civilizations. 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. (Certificate can be completed prior to the completion of B.A. requirement.)
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 of any one discipline shall apply towards the certificate.

Asian Studies courses: Anthropology 332, 333; Art 113A-B, 319A-B, 415A-B, 491, 492, 494A-B, 497, 611; Comparative Literature 325*, 439; Economics 362, 367; Geography 313, 314; History 181A,B, 382A,B, 383A,B, 385A,B, 481**, 487, 488, 682, 683; Music 394; Philosophy 306, 307; Political Science 341, 345, 347, 390; Religious Studies 152, 341, 343, 344, 351, 481**; Theatre Arts 325*; Sanskrit 331, 332, 341, 342; Hindi 221A,B, 331A,B, 335, 499; Japanese 221A,B, 331A,B, 405A,B, 441A, 441B, 499; Chinese 221A,B, 331A,B, 499.

Interested students should apply to the Director, Center for Asian Studies.

Master of Arts Degree in Asian Studies

A program of study leading to the master of arts degree in Asian studies is offered. For detailed information concerning requirements see the *Graduate Bulletin.*

Graduate Division

697. Directed Research (1-3)

698. Thesis (2-6)

* Since Comparative Literature 325 is the same course as Theatre Arts 325, student can apply only one toward certificate requirements.

** Since Religious Studies 481 is the same course as History 481, student can apply only one toward certificate requirements.

Center for Environmental Studies

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 Environmental Studies Certificate Program is interdisciplinary and is comparable to an academic minor of 24 units. It has four components: environmental ethics, the natural environment, human ecology (man and the physical environment) and analysis and application.

The program offers two patterns of completion, one directed toward the technically trained, research oriented student, the other directed toward the liberal arts, humanistically oriented student.

Interested students should contact the Director, Center for Environmental Studies.

Requirements for the Certificate in Environmental Studies:

1. A bachelor's degree.
2. Consultation with the director of the program.
3. Twenty-four units distributed as follows:

Option I—For students majoring in natural science or engineering

1. Environmental Ethics (three units)—Environmental Studies 360; Philosophy 160 or 360.
2. Natural Environment (six units outside the major; biology majors may select from courses in biological science outside their chosen emphasis) —*Life Sciences:* At least three units from Biology 103, 104, 105, 200, 204, 212, 216, 313, 315, 324, 350, 351, 352, 416, 450, 453, 464 (Biology 103, 104, 105, 204 not open to biology majors); Geography 442; Geology 490g; Microbiology 101, 210, 441. *Physical Sciences:* At least three units from Chemistry 111A-B; Geography 140, 440, 444; Geology 102 and 104 or 105, 103 and 104 or 105, 331, 463, 464, 465.
3. Human Ecology (12 units)—*Human Behavior:* At least three units outside the major from Biology 355; Economics 334; Mechanical Engineering 200; Microbiology 321; Political Science 426, 481; Psychology 351 or Sociology 335. *Man and Resources:* At least six units outside the major from Biology 354; Chemical Engineering 475; Civil Engineering 390, 460, 463, 464, 465, 467, 468, 469; Economics 305; Electrical Engineering 265; Geography 160, 204, 304, 355, 356, 460, 467; Geology 190, 191, 305; Health Science 322; Mechanical Engineering 201; Recreation 318; Sociology 410.
4. Analysis and Application (three units)—At least three units from Biology 260, 451; Economics 380; Environmental Studies 496; Geography 387, 390; Geology 306; Health Science 485; Management 413; Mathematics 180; Psychology 310; Quantitative Systems 240; Urban Studies 402, 494.

Option II—For students whose majors are other than natural science or engineering

1. Environmental Ethics (three units)—Environmental Studies 360, Philosophy 160 or 360.
2. Natural Environment (nine units)—*Life Sciences:* At least three units from Biology 103, 104, 105, 200, 201, 212, 216, 350; Geography 442; Microbiology 100, 101. *Physical Sciences:* At least three units from Chemistry 100; Geography 140, 440, 444; Geology 102 and 104 or 105, 103 and 104 or 105; 160, 331.

3. Human Ecology (nine units)—*Human Behavior:* At least three units outside the major from Economics 334; Mechanical Engineering 200; Microbiology 321; Political Science 426, 481; Psychology 351 or Sociology 335. *Man and Resources:* At least three units outside the major from Biology 100, 203; Chemical Engineering 475; Civil Engineering 390, 460, 464; Economics 305; Electrical Engineering 265; Geography 160, 204, 304, 355, 356, 460, 467; Geology 190, 191, 305; Health Science 322; Mechanical Engineering 201; Recreation 318; Sociology 350, 410.
4. Analysis and Application (three units)—At least three units from Biology 260, 451; Economics 380; Environmental Studies 496; Geography 387, 390; Health Science 485; Management 413; Mathematics 180; Psychology 310; Quantitative Systems 240; Urban Studies 402, 494.

Upper Division

360. Ethics and Ecology (3) F, S Massey
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 looked at 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) On demand Staff
Prerequisite: Consent of instructor. Topics of current interest in enviromental studies selected for intensive development. May be repeated 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 course is acceptable for credit toward the Environmental Studies Certificate in lieu of equivalent units in appropriate subject areas of Options I and II.

496. Practical Involvement in Environmental Issues (3) F, S Staff
Prerequisites: Fifteen units in the Environmental Certificate Program, consent of instructor. Intern experience in environmental studies in public agencies and private industry. 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 of Options I and II.

499. Directed Studies (1-3) F, S Staff
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 toward the Environmental Studies Certificate in lieu of equivalent units in appropriate subject areas of Options I and II.

Center for Latin American Studies

Director: T. Nichols.

Professors: W. Atherton, Ph.D.; D. Cardenas, Ph.D.; K. Dixon, Ph.D.; F. Donahue, Ph.D.; R. Frazer, Ph.D.; R. Inostroza, Ph.D.; H. Key, Ph.D.; T. McCorkle, Ph.D; J. Marin, Ph.D.; T. Nichols, Ph.D; J. Noguer, Ph.D.; D. Osborne, Ph.D; J. Powell, Ph.D.

Associate Professors: J. Contreras, M.S.; B. DeLong-Tonelli, Ph.D.; R. DeLorme, Ph.D.; R. Harman, Ph.D.; K. Jones, M.A.; C. MacLachlan, Ph.D.; W. Sater, Ph.D.; W. R. Svec, Ph.D.; F. Trinidad, Ph.D.; J. Weaver, Ph.D.

Assistant Professors: A. Archuleta, Ph.D.; H. Cannon, Ph.D.; M. Farrell, Ph.D; J. Gregory, Ph.D.; J. Schmitt, Ph.D.

Lecturer: L. Weinman, Ph.D.

The Center for 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 the *Graduate 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) or Portuguese 201A,B (4,4)
   (b) *Core* (required of all students) of 12 units: three units of anthropology selected from Anthropology 323, 324, 325 or 345, three units of geography selected from Geography 321 or 322, three units of history selected from History 160A, 160B, 362, 363 or 364, three units of political science selected from Political Science 350, 351, 352 or 365.
   (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, 325, 345; Art 393A-B, 414; Economics 363; Geography 321, 322; History 160A,B, 362, 363, 364, 433, 462A,B, 463, 464, 465, 466, 467, 473A; Political Science 350, 351, 352, 365; Portuguese 312, 313; 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, Center for Latin American Studies.

Center for Urban Studies

Faculty and Board of Directors

Director: R. Outwater (Geography).

Professors: R. Alexander (Civil Engineering), R. Cook (Recreation), B. Kluss (Special Programs), J. Krause (Art), C. Neidengard (Civil Engineering), R. Rooney (Economics), R. Russell (Center for Environmental Studies).

Associate Professors: A. Cerillo (History), J. Hoff (Home Economics), P. Schmidt (Political Science), J. Splansky (Geography).

Assistant Professor: M. Stark (Urban Studies).

Students: G. Jones, J. Murray.

The principal objectives of the center are to foster concern, discussion, analysis and resolution of urban problems, among students, faculty and community. Recognition of the scope and impact of urban problems as they affect people is the first goal of the center. Then data associated with general urban questions are analyzed to provide the framework for the development of solutions.

An interdisciplinary approach to urban problems is stressed. The Certificate in Urban Studies is the basic curriculum program. In addition to the certificate, the center has implemented a model university/community educational program consisting of The Long Beach Project and the Summer Internship Program.

Certificate in Urban Studies

The core of the Certificate in Urban Studies is six units of urban studies courses and 18 units of urban studies electives selected from a variety of departments. The urban studies core curriculum is team-taught by faculty from various departments. The introductory discussion colloquium (Urban Studies Colloquium 401) delineates the most crucial urban problem areas. The urban studies core course (Field Experience in Urban Studies 402) is a field course which sends small research teams of students into the community under the direction of an appropriate urban studies faculty member. These research teams seek out data in public agencies, private institutions and the community at large and recommend approaches to problem solution.

Interested students should apply to the Director, Center for Urban Studies.

Requirements for the Certificate in Urban Studies:

24 units distributed as follows:

Required Courses: Urban Studies 401, 402.

Elective Courses: 18 units from the following courses to be selected in consultation with an urban studies adviser. No more than six units shall be from one department except Urban Studies. These electives must be outside the student's major. American Indian Studies 131; Anthropology 416, 460, 464, 482; Criminal Justice 301, 481, 485; Economics 336, 436; Educational Psychology 485; Finance 222; Geography 388, 466, 467; Health Science 320, 322; History 474; Home Economics 342, 440, 442, 444; Mexican-American Studies 230, 300, 304, 350; Political Science 426, 427, 481; Psychology 351; Recreation 330; Social Welfare 350, 351; Sociology 347; Urban Studies 201, 490, 493, 494, 497A,B, 499.

University/Community Programs

The university/community program consists of two complementary parts. The first, known as The Long Beach Project (Urban Studies 497A,B), provides students the opportunity to study and participate in the formal decision-making structure of city government. The second part consists of an internship program (Urban Studies 494) in which students participate as researchers and staff workers on the staffs of public agencies. Both parts are tied to the University through courses designed expressly to give students course credit and provide faculty supervision for their community laboratory experience. Little time is spent in the classroom, and faculty spend a substantial portion of their effort in one-to-one discussions with students and are also the organizers and coordinators of the complex arrangements which have to be made with the public agencies. One part of this model focuses upon the activities of decision-making boards, commissions and committees; the other is concerned with the workings of public agencies at the staff level.

Lower Division

201. Introduction to Urban Studies (3) F, S Brisker, Cerillo, Outwater
Prerequisite: Sophomore standing or higher. Introduction to urban studies including a critical and comparative examination of the most crucial variables which affect the urban community such as population distribution, transportation systems, economic and technological parameters, government and politics, conflict among differing urban value systems and generalized problems or questions which result from the interaction of these variables.

Upper Division

401. Urban Studies Colloquium (3) F, S Stark
Analysis of the general urban problem areas: housing, transportation, ethnic communities, government, open space, legal justice, poverty and the quality of life and the development of tentatively proposed solutions.

402. Field Experience in Urban Studies (3) F, S Outwater, Stark
Prerequisites: Urban Studies 401 and consent of instructor. Analysis of specific community problems with thorough field investigation in the community including public agencies, private corporations and citizen groups. Small groups of students will specify the scale of specific problems and their efforts will be directed by an urban studies faculty member.

490. Special Topics in Urban Studies (1-3) F, S Outwater, Splansky
Prerequisite: Consent of instructor. Topics of current interest in urban studies selected for intensive development. May be repeated for a maximum of six units of credit. Topics will be announced in the *Schedule of Classes*.

493. Urban Community Problems (3) SS Outwater, Cerillo
Community experts in such areas as city administration, urban planning, health, education, welfare and justice will analyze contemporary problems of the urban community.

494. Community Understudy Experience (3) SS Outwater
Prerequisite: Consent of instructor. Student participation as understudies in a variety of city agencies in order to gain an understanding of the difficulties associated with solving problems of the urban community. Discussion groups of students, faculty and community leaders will share experiences and report on their observations and conclusions.

497A,B. The Long Beach Project (3,3) F, S Stark
Prerequisite: Consent of instructor. Analysis of public policy issues and the decision-making process 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.

499. Directed Studies (1-3) F, S Staff
Prerequisite: Consent of instructor. Independent study under the supervision of a faculty member.

Center for Women's Studies

The main objectives of the Center for Women's Studies are: (1) to encourage scholarly inquiry into the nature, roles, status and history of women, (2) to provide the facilities necessary for the discussion and exploration of problems which impede the development of women's full potential, and (3) to encourage the fruitful interaction of women with one another, both within the University community and in the community at large.

The program is interdisciplinary. In addition to the women's studies courses, courses are currently offered in the following areas or departments: Anthropology, Asian-American Studies, Comparative Literature, Economics, English, History, Home Economics, Honors, Psychology, Social Welfare, Sociology, Speech Communication and Women's Physical Education.

Students may also graduate with a B.A. in American studies with an option in women in America (for further information on the option, contact the American studies adviser). For advisement and additional information about the women's studies program contact the Coordinator, Center for Women's Studies.

Lower Division

100. Issues in Contemporary Feminism (3) F, S Staff
Introductory course surveying the basic issues raised by the feminist movement, including theimages, roles and status of women in American and other societies and the philosophy, goals and directions of the women's movement itself.

Upper Division

315. Black Women in America (3) F, S Staff
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.

490. Special Topics (1-3) F, S Staff
Topics of current interest in women's studies, selected for intensive study. May be repeated with different topics for a maximum of six units.

498. Field Work (1-3) On demand Staff
Prerequisites: Women's Studies 100, consent of instructor. Practical experience in campus or community organizations concerned with women's issues.

499. Directed Studies (1-3) On demand Staff
Prerequisites: Women's Studies 100, consent of instructor. Independent work in areas of special interest to student and instructor.

Educational Participation in the Community

Director: Hal M. Schaffer.

Assistant Director: Ruby Leavell.

The purpose of the Educational Participation in the Community (EPIC) Field Experience class is to offer students the opportunity to engage in an off-campus experience complementary to their career goals, to explore new careers and to provide assistance in meeting economic and social needs of local communities. The program provides an organized plan for utilizing various forms on non-classroom work or service-oriented experience to enhance the total education of students.

Lower Division

297. EPIC Field Experience (3) F, S Staff
Prerequisite: Advisement through EPIC office. Experiential learning through field work in selected agencies in such areas as elementary and secondary schools, geriatrics, legal, medical, mentally and physically handicapped, pre-schools, 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 a written report on work done. Evaluation on Credit/No Credit basis. (Class activity 2 hours, agency activity 6 hours.)

Upper Division

497. EPIC Field Experience (3) F, S Staff
Prerequisites: Upper division standing, advisement through EPIC office. Application of a student's education in experiential learning through field work in selected agencies in such areas as elementary and secondary schools, geriatrics, legal, medical, mentally and physically handicapped, pre-schools, 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 written reports on work done. Evaluation on Credit/No Credit basis. (Class activity 2 hours, agency activity 6 hours.)

General Honors Program

The General Honors Program provides an alternative means of meeting the CSULB general education requirements in its lower division courses, and offers a series of special topics colloquia and directed studies opportunities in its upper division. This program of general studies courses is aimed at those academically superior undergraduates who are interested in undertaking scholarly work in an interdisciplinary environment, and who are seeking an opportunity to develop their critical faculties and creative/communicative skills. Small discussion-oriented classes in honors encourage a close and productive student/faculty relationship.

Students who apply to the program are selected according to several criteria, including their self-motivation and their capacity for both critical thinking and a sophisticated personal involvement in academic work that is nontraditional and intellectually rigorous. Participation in the Honors Program demands a considerable commitment of time and effort. Students accepted into the program are expected to exceed the requirements of their instructors.

CSULB students and incoming students are invited to apply to the program at any time during their college career. In no semester do honors classes constitute the entirety of the students' programs; they select the rest of their classes from the regular curriculum of major study. Honors is not a major; however, the program does offer a certificate to those students who successfully complete the honors thesis after having met a basic unit requirement.

Although the honors classes offered each semester conform to the general descriptions that follow, the individual class sections emphasize divergent topics or projects, selected by the students according to their interests and approved by the Honors Council, the elected policy certification body of the program, consisting equally of students and faculty.

Requirements for the Certificate in the General Honors Program:

1. Completion of Honors 496 (Tutorial) and Honors 498 (Thesis) with a grade of B or better.
2. Completion of 18 additional units from Honors Program courses. (Under exceptional circumstances, this requirement may be reduced upon petition to and approval of the Honors Council and approval of the Director of the Honors Program.)

Lower Division

100. Studies in Communication (3) F, S
Workshops exploring various modes of communication and expression—art, fiction, poetry, film, dance, music, theatre and other areas. The course emphasizes the active development of techniques and skills through experimental projects and seminar discussions. May be repeated for a maximum of 12 units.

130. Studies in Civilization (3) F, S
In-depth study of selected political, religious, intellectual, social and economic topics in the history of Western and Eastern civilizations. Emphasis is placed on the examination and interpretation of primary sources as historical evidence. May be repeated for a maximum of 12 units.

200. Honors Symposium (3) F, S
Seminars exploring the cultural heritage of modern society, emphasizing an exploration of the various facets of philosophy, art and literature. May be repeated for a maximum of 12 units.

252. Studies in Science (2-3) F, S
Intensive study of the nature, substance and significance of the processes of scientific thought and operation. Topics will be selected for the purpose of presenting scientific inquiry as a human intellectual activity within the larger contexts of history and society. May be repeated for a maximum of 12 units.

252L. Studies in Science Laboratory (1) On demand
To be taken concurrently with Honors 252 when a laboratory is required.

Upper Division

300. Junior Colloquium (3) F, S
Study of selected interdisciplinary topics, problems or issues, normally in a team-teaching format. Repeatable with program permission.

490. Special Topics (1-3) On demand
Topics of current interest in multi-disciplinary studies selected for intensive development. Repeatable with program permission.

496. Honors Tutorial (1-3) F, S
An individual project, generally of a multi-disciplinary nature, to be carried on by the student under the supervision of a faculty member. Work in the course is normally a preparation for the honors thesis.

498. Honors Thesis (3) F, S
An individual project, paper, or presentation, generally of a multi-disciplinary nature, to be carried on by the student under the supervision of a faculty member, and to culminate in a final output of substantial merit.

499. Directed Studies (1-3) On demand
Individual work done outside the regular curriculum, supervised and approved by a faculty member. Repeatable with program permission.

Additional information concerning the Honors Program may be obtained from the Director of the General Honors Program.

Liberal Studies Major for the Bachelor of Arts Degree
Liberal Arts 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 Arts Program Certificate. The program is supervised by the Liberal Arts Governing Committee reporting to the Director of Special 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 Non-European 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; eight 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 Arts Governing Committee. All equivalencies, substitutions or waivers of requirements must be approved by the Liberal Arts 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 Arts Program Certificate should obtain early advisement in the Special Programs Office.

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
Asian American Studies
Biology
Black Studies
Comparative Literature
Economics
English
French
Geography
Geology
German
History
Mathematics
Mexican American Studies
Music
Philosophy
Psychology
Religious Studies
Sociology
Spanish
Speech Communication

Consult the Special Programs Office about requirements of each concentration and about additional concentrations that may be available.

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, 180 or Comparative Literature 184. 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, 400, 405, 406, 407, 481, 482. No more than one course may count toward the 18 unit minimum.

Group 2. Grammar, Language Structure or Linguistics
Anthropology 170, 413, 414, 471, 472; 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, 439, 446. No more than two courses may count toward the 18 unit minimum.

Group 4. English and American Literature
American Indian Studies 333; 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
Either both 110 and 111 or two courses from 114, 115, 116, 180.

Group 2. Biological Sciences
One course from Biology 200, 210, 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 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.

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, 221A, 221B; Sociology 100, 142.

Group 2. British, Latin American or European History
History 131A, 131B, 151A, 151B, 160A, 160B.

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 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, 385, 390.

Group 2. Non-European Cultures
American Indian Studies 130, 131, 360; Anthropology 321, 322, 323, 324, 325, 327, 331, 332, 333, 334, 336; Art 113A, 113B; Comparative Literature 124, 234, 325; History 181A, 181B, 382A, 382B, 383A, 383B, 385A, 385B, 491A, 491B; 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 or foreign languages departments or the religious studies program.

Special Major for the Bachelor of Arts Degree

The special major for a bachelor of arts degree provides an opportunity for students to engage in an individualized course of study leading to a degree when legitimate academic and professional goals are not accommodated by standard degree majors. The special major consists of correlated studies in two or more departments. It is not intended as a means of bypassing normal graduation requirements or a means by which students may graduate who fail to complete the degree major in which they are enrolled.

The special major must be approved by the Director of Special Programs with approval based upon a case-by-case justification. A candidate for a special major must have more than one full year of academic work (more than 30 units) still to be completed to meet minimum degree requirements. The minimum requirement for the special major is an approved program of at least 36 semester units of which a minimum shall be 24 upper division units. A minimum of nine upper division units shall be taken in each of two departments. Units applied to satisfy general education requirements may not be counted toward the special major.

Students requesting a special major must: (1) prepare a written statement giving their reasons for desiring a special major in terms of their academic and professional goals and why they cannot meet these goals through a standard major, (2) develop a specific list of courses which would, in their opinion, lead to the academic and professional goals stated above, (3) secure the signed approval of a faculty sponsor from each of the two base areas, (4) secure the signed approval of the department head in *all* areas from which the special major courses are drawn in order to give the special major student priority for course admission equivalent to that of students majoring in the department, and (5) submit the foregoing material to the Director of Special Programs for final approval. Forms for the above are available in the Special Programs Office.

Following final approval of the special major proposal by the Director of Special Programs, a copy of the approved listing of courses must be filed with the Records Office.

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 a multi-dimensional language. The biomedical artist comprehends complex biomedical thought and translates it fully into a more obvious, more appropriate or more engaging form. He or she must be an exceptionally skillful studio artist whose biomedical work succeeds esthetically yet retains its scholarly commitment.

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, the artist must also be proficient in commercial art and printing procedures including typography and photography.

The demand for biomedical art is stable; it is a lucrative profession. Continuing technological improvements in such areas as photography facilitate but do not supplant the skill of the biomedical artist.

Requirements for the Certificate in Biomedical Art:

1. A bachelor's degree with a major in art or biology.
2. Admission to the courses will be by consent of the instructors of both departments and students qualifying shall have completed at least one semester of junior level work in either art or biology maintaining a 2.75 overall GPA and a 3.0 GPA in their major.
3. Two of the designated courses, Art 374B and Biology 490, will be taken concurrently and will be team taught by members of the Art and Biology Departments.
4. Twenty-five units distributed as follows: Art 271, 372, 374A, 374B and 499f, optional, may be repeated to total six units; Biology 206, 216, 336 and 490. Biology 490 must be taken concurrently with Art 374B.

Interested students should contact Richard Oden, Art Department.

Certificate Program in International Business

A program in international business has been established to encourage study in this field. This integrated program offers undergraduate business students the opportunity to pursue courses leading to a Certificate in International Business Studies. Courses used to comply with certificate requirements may also be counted, where applicable, toward the General Education requirements, the School of Business Administration requirements and departmental requirements for a bachelor's degree.

Requirements for the Certificate in International Business

1. A bachelor's degree with a major in business administration pursued and earned concurrent with certificate course work.
2. Fifteen units distributed as follows: (a) either Economics 370 or Marketing 380, (b) 12 units selected from Accounting 465, Finance 490, Management 405, Marketing 480, Political Science 300 or 307.

Interested students should apply to Mr. John T. Martinelli, Office of the Graduate/Undergraduate Coordinator, School of Business Administration.

Certificate Program in Liberal Arts Legal Studies

The Certificate Program in Liberal Arts Legal Studies 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 Liberal Arts Legal Studies:

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 411 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 330; History 455A,B, 479A,B; Political Science 400, 405; Sociology 335 (or Psychology 351), 441.

Specialized courses: Criminal Justice 301, 351; Economics 340, 440; Political Science 305, 440, 395; Finance 222, 324, 326, 444.

Interested students should apply to the Director, Program for Liberal Arts Legal Studies.

Certificate Program in Mediaeval and Renaissance Studies

Director: A. R. L. Bell (English).

Professors: A. Axelrad (English), G. Crane (English), H. Gilde (English), S. Knafel (English), L. Lubbe (English), E. Nielsen (English), F. Peccorini (Philosophy).

Associate Professors: D. Abrahamse (History), A. Bell (English), D. Boutelle (History), E. Gosselin (History), J. Jernigan (Comparative Literature), D. Martel-Horowitz (Art).

Assistant Professors: B. Greer (Art), J. Loeschen (Religious Studies), G. Spring (German, Russian and Classics), A. Springer (History).

Lecturers: J. Johnson (German, Russian and Classics), D. Otte, (Honors).

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 in the cooperating departments.

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-America Society, the American Historical Association and other scholastic and honorary groups relevant to contemporary research.

Interested students should apply to the Director, Dr. A. R. L. Bell, English Department, HOB 608, 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. Two years of language study or equivalent proficiency, 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, 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*; Comparative Literature 349*, 422, 430, 431, 432, 449*, 450*; English 331, 426, 451, 452, 462, 463, 468A, 469*, 498*; French 470, 471; History 301*, 316, 317, 318A,B, 332, 333, 341A, 353, 431A, 432A,B, 490*, 495*, 499*; Latin 377, 378; Music 360; Philosophy 403; Religious Studies 471, 490*, 494*; Spanish 474; Theatre Arts 321, 422, 490*.
   Graduate courses: Art 611*; English 550, 551, 652, 661, 681, 683*; French 562, 604*, 695*; German 505, 510, 552, 554; History 510*, 611, 631*, 651; Music 561; Philosophy 630*, 690*; Spanish 505, 535, 538, 539; Theatre Arts 621A*.
   c. Three units of directed research on a mediaeval or Renaissance topic in any of the following courses: Art (history) 497, Comparative Literature 499, English 499, French 499, German 499, Greek 499, History 498, Religious Studies 490, Philosophy 499, Spanish 499, Theatre Arts 498.
   Graduate courses: Art (history) 697, English 697, French 697, German 697, History 697, Philosophy 697, Spanish 697, Theatre Arts 694.

Certificate Program in Mediterranean Studies

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. For further information contact the director.

Requirements for the Certificate in Mediterranean Studies:

Twenty-six 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.

* On an approved mediaeval or Renaissance topic only certain special studies topics may be repeated for credit with approval.

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 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, 341, 342.
B. Latin 331, 332, 341, 342.
C. History 313, 314, 495*.
D. Speech Communication 441, 490*, Comparative Literature 421 (same course as Theatre Arts 421), 452*, 499*, English 331, 499*.
E. Philosophy 203, 420, 421, 422, 499*.

Certificate Program in Museum Studies

The Certificate Program in Museum Studies is open to students in museum related fields including the visual arts, science, history, but does not exclude other fields and may be granted at either the bachelor's or master's degree level. 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 28 units to include: Art 320, 344A or B, 445 (final three units devoted to in-residence museum training and seminar programs), 496 (or 696 for two units); English 317; Journalism 270, 375 or 376; QuantitativSystems 130; Speech Communication 130.

Certificate Program in Russian-East European Studies

The Center for Russian-East European Studies has established an interdisciplinary program which offers students interested in this field the opportunity to pursue courses leading to a Certificate in Russian-East European 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.

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 administration, international organization, international business activities, education and information for intercultural understanding, make it useful to organize studies leading to a certificate in this ever important part of the world will tend to enhance the student's possibility for a career in business, education or government, and broaden the scope of understanding.

Interested students should apply to the Director, Center for Russian-East European Studies, Dr. George Kacewicz, Political Science.

* If applicable and approved by student's adviser.

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.
3. 18 units selected 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.
4. Cumulative grade point average of 2.75 in all courses in the student's approved certification program.

Russian-East European courses: Anthropology 331, 490*; Comparative Literature 349*, 428*, 447*, 449*; Economics 364, 368, 490*; Geography 317, 318; History 341A, 341B, 441, 490*, 495*; Management 450, 451; Philosophy 425*, 490*; Political Science 313, 335, 337, 497*; Russian 101A-B, 201A, 201B, 312, 313, 314, 315, 316, 401.

Computer Studies

A Computer and Information Science Center is being formed to coordinate computer studies. Interested students should consult the Director of the Computer and Information Sciences Center for additional information.

200. Introduction to Data Analysis (3) F, S Black, Stevens, Walker
A first course in data and computers for students in the social sciences, business, education and the humanities. Emphasis on data formulation, data measurement and data reduction through the use of "canned" computer programs.

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. Not open to students with credit in Mathematics 273.

International Programs

The California State University and Colleges' Year Abroad

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

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

* May be taken only when course work is applicable to Russian-East European Studies. Consultation with director of the center is required.

Eligibility is limited to students who will have upper division or graduate standing during their year of participation, who have a 2.5 overall grade point average (3.0 for the United Kingdom program), who show ability to adapt to a new environment, and who, in the cases of France, Germany, Mexico and Spain, have completed two years of college level study (or the equivalent) in the language of instruction at the foreign university. Selection is made by a faculty committee on the student's home campus and by a statewide faculty committee.

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

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

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 of the California State University and 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. It offers courses in history, marketing, political science, sociology, literature and art, all taught in English by Uppsala and guest European professors, and also Swedish language. 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 $680. 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 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 Student Center.

American Language Program

The American Language Program is a series of semi-intensive courses in English as a second language. The courses are designed for international students holding student visas, permanent residents and certain immigrants who have significant difficulty in their use of English. All visa and PR students must take the Examination in English as a Second Language (EESL) if English is not their first language or their primary language of instruction before coming to the United States.

Depending upon the results of the EESL test (and TOEFL, if available), students will either be placed in American Language Program courses during the first 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 American Language Program courses, the number of other courses will be adjusted accordingly. The requirements 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 of language performance, and not merely by courses completed, here or elsewhere.

Foreign Student Courses

Lower Division

105. Introduction to American Higher Education (3) F, S Staff
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 (3,3) F, S Staff
Development 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 Staff
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.

American Language Program Courses

Lower Division

121. American Language Program I (6) F, S Staff
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 Staff
Study of English as a second language, emphasizing reading and research writing. May be taken concurrently with American Language Program 123. Three class hours per week.

123. American Language Program III (1) F, S Staff
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 Staff
Essentials of perceiving and articulating American English sounds in context. Individual laboratory work also required.

125. American Language Program IV (3) F, S Staff
Study of English as a second language, emphasizing rhetoric and oral style. Five class hours per week.

Foreign Study Programs

Foreign study courses are offered as summer session or as extension classes through the Summer Session Office or the Continuing Education Office respectively. Particular programs are descrived 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" (see page 94). Credit earned in an extension offering of the course is "extension credit" (see page 66). 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 major department. Foreign study courses are separate and distinct from International Programs, The California State University and Colleges "Year Abroad."

Military Science

Air Force ROTC

Through arrangements with the University of Southern California two, three and four-year Air Force Reserve Officers Training Corps (AFROTC) programs are available to all qualified students at California State University, Long Beach. Academic units earned in this program are counted as elective credits toward graduation. Successful completion of the AFROTC programs leads to a commission as a second lieutenant in the Air Force Reserve. Four-year scholarships must be applied for before December 31 in the calendar year prior to entering college the following fall. Three and two-year scholarships are available to those already in college. All scholarship recipients receive full tuition, required fees and books and $100 a month. All pilot qualified male students are provided 36½ hours of flying training during their final year in the program. For additional information contact the Office of Career Planning and Placement or Dr. Gene Simonson, Economics Department, at California State University, Long Beach or the Department of Aerospace Studies (AFROTC), University of Southern California, Los Angeles, California 90007, phone (213) 746-2670/2671.

General Information

The Department of Aerospace Studies offers both two-year and four-year programs of instruction leading directly to a commission as an officer in the United States Air Force. To obtain this commission, qualified male and female students must successfully pass an aptitude test, a physical examination, complete either program of instruction and concurrently receive or possess an undergraduate degree. Those male students who qualify for and plan to enter Air Force Pilot Training will be given flight instruction as part of their last year in either the two or four-year program. Full tuition assistance is available to students enrolled in both the two-year and four-year programs on a competitive basis.

Two-Year Program

This program is available to any student having two academic years remaining either at the graduate or undergraduate level. The program consists of a six-week summer field training course followed by four semesters of aerospace studies courses (300ab and 400ab). Application for this program should be made in the fall semester preceding the summer field training course.

Four-Year Program

This program consists of eight semesters of aerospace studies courses (100ab, 200ab, 300ab, 400ab), plus a four-week summer field training course. Enrollment in the first four semesters of Aerospace Studies 100ab and 200ab is accomplished in the same manner as in any other course of instruction at the University of Southern California. Application to enroll in the last four semesters (300ab and 400ab) must be made while enrolled in Aerospace Studies 200a.

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 100ab and 200ab. 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.

100ab. Aerospace Studies I

a: Development, functions, organization and doctrine of the U.S. Air Force; strategic offensive forces including Strategic Air Command, naval forces and future requirements; strategic defense forces. (Lecture 1 hour, laboratory 1 hour.)

b: General purpose forces; unified commands; Army, Navy and Marine Corps; tactical air forces; aerospace support forces. (Lecture 1 hour, laboratory 1 hour.)

200ab. Aerospace Studies II

a: Development of aerospace power in the United States through World War II with special emphasis on the Army Air Corps. (Lecture 1 hour, laboratory 1 hour.)

b: Development of aerospace power since World War II with particular emphasis on international confrontations involving the United States.

300ab. Aerospace Studies III

a: Communicative skills, the military profession, civil-military interaction, the framework of defense policy, the formulation of defense strategy. (Lecture 3 hours, laboratory 1 hour.)

b: Officer classification and assignments, strategy and the management of conflict, the formulation and implementation of United States defense policy, United States organizational actors, case studies in policy making. (Lecture 3 hours, laboratory 1 hour.)

400ab. Aerospace Studies IV

a: USAF leadership at junior officer level—theoretical, professional, legal aspects: principles and practical applications. Communicative skills. (Lecture 3 hours, laboratory 1 hour.)

b: USAF management principles, controls, tools and techniques. Orientation to Air Force life. (Lecture 3 hours, laboratory 1 hour.)

Army ROTC

The Army Reserve Officers Training Corps (ROTC) program is available to qualified California State University, Long Beach students through the University of California, Los Angeles program. Classes are conducted at the Army Reserve Center, on Willow near Lakewood, Long Beach, about five minutes from the campus.

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 one-hour leadership laboratory. 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 $100 per month 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.

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 March 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. The cadet is paid approximately $400, plus transportation costs.

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 enrolled in Army ROTC. Students cross enrolled while attending other institutions are eligible.

Military Science Curriculum

MS I (First Year): The U.S. Defense Establishment (two quarters); Theory of Warfare

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): 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): Psychology of Leadership, Psychology of Learning Applied to Teaching

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): Decision-making, Military Legal Systems, Military-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.

Flight training is offered on a competitive basis in the second year of the advanced course to students who have an aptitude for flying and meeting physical qualifications.

For additional information contact the Department of Military Science, University of California, Los Angeles, Los Angeles, California 90024; phone (213) 831-7463.

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 dentistry, law and medicine. Following are recommendations and requirements of universities and professional schools in this vicinity.

The student who intends to apply for admission to a professional school should select a major field of concentration. If a degree is to be completed, the requirements for the selected major shall be completed in addition to the courses specifically required for admission to a professional school.

Pre-Dental

Each pre-dental student should confer with a member of the pre-dental committee each semester for advice as to courses which may be required only by specific dental schools.

Pre-dental students most frequently select a major in zoology, chemistry or microbiology. However, any major academic field of concentration may be selected if the basic preprofessional requirements are incorporated in the preparation. Students are encouraged to secure further information from the Office of the Biology Department where they may consult the pre-dental committee and *Admission Requirements of U.S. and Canadian Dental Schools*.

The basic requirements for entrance into most dental schools include General Zoology, General and Organic Chemistry, General Physics (all including laboratories), courses in English, psychology and social sciences, and in mathematics as required for courses in chemistry and physics. Certain additional courses in general education, science and a foreign language are recommended.

Pre-Legal

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 must confer with a member of the pre-medical 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 Office of the Biology Department.

The basic requirements for entrance into most medical schools include General Zoology, Vertebrate Embryology, General Chemistry, Quantitative Analysis, Organic Chemistry, 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.

Weekend College

Director: Dr. Robert K. Rheinish.

The Weekend College offers a variety of courses in several disciplines. Offered entirely on either Saturday or Sunday, the classes allow for an enriched mixture of students from the campus and the community.

Some classes are offered in a self-paced multi-media format allowing students to select the most convenient time and duration of study and allowing them to receive as much faculty guidance, individually and in small groups, as is necessary.

The courses are open to CSULB students as part of their regular program and to extension students through the Continuing Education Office. Members of the community should apply directly to the Continuing Education Office to begin or continue their university education through the Weekend College.

For information and a Continuing Education Program catalog, please write the Office of Continuing Education, California State University, Long Beach or phone 498-4315 or 498-4405.

Explorations in Communication (4)
Modes of human expression from sign language to TV, with focus on the verbal and nonverbal channels within personal, mass, intercultural zones of communication. Speech, Anthropology, Comparative Literature, Radio-TV, Educational Psychology and Home Economics. (General Education category IV and VI.)

Explorations in Cultural Creativity (4)
Interrelation of literature, philosophy and the arts as reflections of a culture's world view, with the special recreation of six festivals ranging from ancient Greece and India to modern times. Art, Music, Dance, Theatre Arts, English and Philosophy. (General Education category III and VI.)

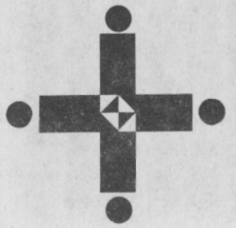
Explorations in Human Behavior (4)
Examination of individual and social events as a translation of man's ability to put thoughts and feelings into action through social institutions and personal experiences. Political Science, History, Sociology, Psychology, Black Studies and Marketing. (General Education category II and VI.)

Explorations in the Natural and Man-Made World (4)
Probing of scientific discovery and the empirical methods as a way of describing and changing the interrelation between man and his environment. Chemistry, Biology, Physics, Geological Sciences, Engineering and Microbiology. (General Education category I and VI.)

For course times and offerings see the *Schedule of Classes*.

School of Applied Arts and Sciences

School of Applied Arts and Sciences



Administrative Officers

Dr. C. Thomas Dean	Dean of the School	IA2-100
Dr. John J. McConnell	Associate Dean, Academic Affairs	P.E. 326
Dr. Floyd M. Grainge	Associate Dean, Fiscal Affairs	P.E. 326
Dr. Dorothy L. Fornia	Coordinator, Graduate Studies and Research	P.E. 209
Mrs. Leona Samardich	Administrative Assistant	IA2-108

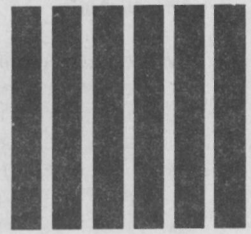
Directory of Departments

Department	*Chairmen*	*Dept. Offices*
Criminal Justice	Dr. Paul M. Whisenand	FO5-201
Health Science	Mr. Peter A. Cortese	P.E. 215
Home Economics	Dr. Merna A. Samples	Home Ec. 004
Industrial Education	Dr. Irvin T. Lathrop	IA1-101
Industrial Technology	Dr. Paul L. Kleintjes	Engr. 4-124
Men's Physical Education	Dr. Robert A. Pestolesi	P.E. 203
Nursing	Dr. Joan Cobin	Nursing 19
Physical Therapy	Dr. Frank J. Bok	P.E. 212
Recreation and Leisure Studies	Dr. Raymond Cook	P.E. 218
Vocational Education	Dr. Norman Stanger	P.E. 300
Women's Physical Education	Dr. Dorothy Deatherage	P.E. 221

Other School Offices

Facilities Coordinator	Mr. Bill Bovee	P.E. 207
Men's Intramural Director	Mr. Robert Wuesthoff	P.E. 21
Women's Intramural Director	Ms. Mary Ellen Leach	P.E. 214
Director of Center for Criminal Justice	Dr. Harold Becker	FO5-204

Criminal Justice



Department Chairman: Dr. Paul M. Whisenand.

Professors: Becker, Germann, Guthrie, Kenney, Whisenand.

Associate Professors: Good, Haddox.

Assistant Professors: Adams, Grencik, Hails, Rush, Sheflin.

Academic Advising Coordinator: Dr. Gary B. Adams.

The program in criminal justice offers the bachelor of science degree to the man or woman seeking comprehensive education for a professional career in the subject area. The pattern for this major provides for a broad preparation including subjects of an advanced, specialized and administrative nature.

The program is designed for the student who, through screening based upon evaluation of previous college work, job experience, testing and counseling, clearly demonstrates an aptitude and promise for work in one or more of the option areas within the Department of Criminal Justice. The following student groups are served:

1. Transfer students from the community colleges who desire to earn the bachelor of science degree in their area of specialization.
2. Students who desire a change of objective from other related curricula.
3. Personnel currently employed who desire additional education and/or the bachelor of science degree.

Four options are available: corrections, criminalistics, law enforcement and security administration.

A minimum of 33 units of study in criminal justice courses plus 12 units of upper division supporting courses in the social sciences (taken outside of the Department of Criminal Justice) constitutes the major. For information concerning general regulations and degree requirements, refer to Baccalaureate Degrees.

All students are required to complete a 12-unit core requirement consisting of Criminal Justice 301, 351, 355 and 403. Also, all students are required to complete a course in statistics before graduation.

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 total of 24 units of criminal justice (or police science) is acceptable for transfer.

Note: Fire Administration Courses. For administrative purposes only, several fire science courses have been lodged with the Department of Criminal Justice. The purpose of this is to offer career-oriented course work for the student electing to prepare himself for an administrative position in the fire service. Special counseling regarding transfer from city or community college, platoon scheduling of classes and fulfillment of baccalaureate degree requirements is available through the Department of Criminal Justice.

Major in Criminal Justice for the Bachelor of Science Degree

Corrections Option

Lower Division: Psychology 150 or 221A.

Upper Division: Criminal Justice 301, 351, 354, 355, 403 and 21 units of criminal justice electives to be selected in consultation with an adviser. Criminal Justice 321, 322, 324 and 483 are strongly recommended. It is also recommended that the following courses be included in the student's program: Psychology 315, 351, 356, 370; Social Welfare 340, 371; Sociology 445.

Supporting Courses: 12 units of upper division supporting courses in the social sciences (taken outside the Criminal Justice Department) are required after consultation with an adviser.

Criminalistics Option

Lower Division: Chemistry 111A-B, 251, 251L; Physics 100A-B; Mathematics 120 and one of the following: Biology 102, 210, 212, 216; Microbiology 210.

Upper Division: Criminal Justice 301, 351, 355, 403 and 21 units of criminal justice electives selected in consultation with an adviser; Chemistry 321A-B, 451. The student is strongly recommended to take Criminal Justice 311, 312, and 411.

Supporting Courses: 12 units of upper division supporting courses in the social sciences (taken outside the Criminal Justice Department) are required after consultation with an adviser.

Law Enforcement Option

Upper Division: Criminal Justice 301, 351, 355, 403 and 21 units of criminal justice electives selected in consultation with an adviser. Criminal Justice 321, 322 and 324 are strongly recommended.

Supporting Courses: 12 units of upper division supporting courses in the social sciences (taken outside the Criminal Justice Department) are required after consultation with an adviser.

Security Administration Option

Upper Division: Criminal Justice 301, 351, 355, 403 and 21 units of criminal justice electives selected in consultation with an adviser. Criminal Justice 331, 431, 435 and 437 are strongly recommended.

Supporting Courses: 12 units of upper division supporting courses in the social sciences (taken outside the Criminal Justice Department) are required after consultation with an adviser.

Master of Science Degree in Criminal Justice

A program of study leading to the master of science degree in criminal justice is offered. For detailed information concerning requirements see the *Graduate Bulletin.*

Upper Division

301. Concepts and Issues of Criminal Justice (3) F, S Germann, Rush
Criminal justice studied as a total interacting system: police, corrections, parole, probation and the judiciary. Not open to students with credit in Criminology 101.

303. Basic Statistics in Criminal Justice (3) F, S Hails
Prerequisite: Consent of instructor. 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.

311. Basic Criminalistics (3) F, S Staff
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 3 hours.)

312. Intermediate Criminalistics (3) F, S Staff
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.)

321. Criminal Justice: Administrative Organization (3) F, S Adams, Kenney
Functional and structural approaches. Formulation of policy and procedures; coordination and control methods; planning and research.

322. Criminal Justice: Administrative Behavior (3) F, S Adams, Kenney
Prerequisite: Criminal Justice 321. Behavioral approach to the study of criminal justice administration; organization and the individual; effect of group dynamics on the administrator; decision making from a human relations point of view.

324. Criminal Justice: Personnel Supervision and Development (3) F, S Good
Techniques of supervision; problems of policy and procedure; field problems; instructional and disciplinary methods; motivation; supervisory investigations and reports; performance rating.

331. Introduction to Industrial Security (3) F Staff
Historical, philosophical and legal basis of security; role of security in modern industrial society; administrative, personnel and physical aspects of the security field.

351. Criminalization and Substantive Criminal Law (3) F, S Hails
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. Not open to students with credit in Criminology 151.

354. Legal Aspects of Corrections (3) F, S Staff
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.

355. Evidentiary Issues in the Legal Process (3) F, S Staff
Issues and problems of proof in civil and criminal trials; admissibility; examining witnesses; constitution consideration and exclusionary rules. Not open to students with credit in Criminology 155.

357. Procedural Aspects of the Legal Process (3) F, S Staff
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. Not open to students with credit in Criminology 157.

358. Legal Rights of the Convicted Offender (3) S Haddox
Emerging rights of the convicted offender are explored with focus upon Constitutional guarantees, appellate courts' decisions and their impact upon administration.

359. Drug Abuse and the Law (3) S Haddox
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.

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 decison 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 Criminology 271 or 371.

376. Criminal Justice Planning (3) F, S Staff
Examination of crime-oriented planning. Apprehension, adjudication, custody and supervision. Basic planning strategies and practical considerations for implementation.

383. Correctional Counseling (3) F, S Sheflin
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.

403. Criminal Justice: Ecology and Etiology (3) F, S Grencik
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 Staff
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.

411. Advanced Criminalistics (3) On demand Staff
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.)

421. Specialized Problems in Criminal Justice Administration (3) F, S Grencik
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. Problem of organized crime.

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.

424. Advanced Supervision and Executive Development in Criminal Justice (3) On demand Staff
Prerequisite: Criminal Justice 324. Behavioral science approach to supervision in criminal justice. Includes sensitivity training, individual and group interview rehearsals and group dynamics.

431. Industrial Security Administration (3) S Staff
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 Staff
Protection of industrial, business and governmental facilities. Physical security requirements and standards.

437. Special Problems in Industrial Security (3) F Staff
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.

441. Fire Services Administration (3) On demand Staff
Organization and management of fire services. Line, staff and auxiliary functions. Problems of policy, procedure and technique. Fire service supervision. Special methods and equipment.

442. Fire Prevention Administration (3) On demand Staff
Organization of the fire prevention bureau; laws and regulations affecting fire prevention; coordination with governmental and other public organizations; planning and training.

443. Fire Protection Administration (3) On demand Staff
Application of the American Insurance Association's evaluation to fire protection administration; objectives of the evaluation; assessment of deficiency points; factors affecting rating; administrative use of evaluation results; evaluation procedures.

444. Fire Disaster Administration (3) On demand Staff
Fire disaster protection organization; disaster laws; establishment of central and field control centers; communications; support groups; manpower and equipment; overhaul and security; disaster and civil defense relationships.

451. Advanced Legal Problems (3) On demand Haddox
Prerequisite: Consent of instructor. Examination of searches, seizures, arrests, police procedures for civil law, medico-legal problems, administrative law and similar legal topics. Original research of state and federal court decisions required.

455. Traffic Laws and Procedures (3) On demand Staff
Development, purpose and examination of the Vehicle Code from a legal aspect. Case studies and court-made rules regarding interpretation of the Code. Exploration of the responsibilities, rights and duties of criminal justice officials.

481. Police-Community Relations (3) F, S Haddox
Individual and group study of relationships between law enforcement agencies and the public. Exploration of areas of conflict and cooperation.

482. Crime, Police and the Political Process (3) On demand Guthrie
Crimino-political power; relationships between specific organized crimes and political entities; political functions of criminal groups; the police as a political instrumentality.

483. Jail Administration (3) F, S Sheflin
Organization and management of police detention facilities. Security, custody and discipline as applicable to pretrial detention. Operation of programs for sentenced misdemeanants. Special problems relative to first offenders, female prisoners, juveniles, narcotic addicts, sick prisoners, homosexuals, the mentally disturbed and the alcoholic prisoner.

485. The Role of Police in Society (3) On demand 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.

490. Independent Study (1-3) F, S Staff
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 Staff
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.)

499. Special Topics in Criminal Justice (3) F, S Staff
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.

Graduate Division

511. Criminal Justice Education Systems (3)

512. Problems in Urban Criminal Justice (3)

521. Criminal Justice Administration (3)

551. Criminal Justice Legal Systems (3)

581. Theories of Crime Causation and Prevention (3)

599. Criminal Justice (3)

621. Seminar in Criminal Justice Administration (3)

622. Seminar in Administration of Criminal Justice Information Systems (3)

623. Seminar in Comparative Criminal Justice Administration (3)

624. Seminar in Criminal Justice Problems (3)

696. Research Methodology (3)

697. Directed Research (1-3)

698. Thesis or Project (1-4)

Health Science

Department Chairman: Mr. Peter A. Cortese.

Professors: Beegle, Kaywood, Torney.

Associate Professors: C. Campbell, Cortese, Irwin, Lussier, Pollock, Probst.

Lecturers: E. Allen, Burhans, Henderson.

Credential Adviser (Health Science): Mr. Edward Allen.

Credential Adviser (Safety Education): Dr. Richard Kaywood.

Academic Advising Coordinators:
Health Science: Mr. Peter A. Cortese.
Safety Education: Dr. Richard Kaywood, Mr. Alan Probst.

Courses are designed to satisfy health science requirements for (1) general education, (2) the standard designated services credential with a specialization in health to serve as a public school nurse, (3) the baccalaureate degree major, (4) the teaching major and minor in health science for the standard teaching credential, (5) the teaching minor in safety education for the standard teaching credential, (6) the standard designated subjects credential in public safety and accident prevention including driver education and driver training.

There are three specialization options for students seeking a baccalaureate degree in health science. The school health option is designed for persons who desire to pursue a professional preparation program leading to qualification as a health science teacher in the secondary schools. The option in community health education is designed for persons whose occupational objective is to serve as community health educator with an official or voluntary health agency. The traffic safety option represents a comprehensive specialized program to prepare traffic safety specialists for education, industry, government and various safety-oriented public and private organizations.

Major in Health Science for the Bachelor of Science Degree

School Health Option

Lower Division: Biology 101, 102, 200, 204; Chemistry 200; Microbiology 100, 101; Psychology 100; Safety Education 220 or 330.

Upper Division: Health Science 300, 320 or 420, 321 or 322, 325, 327, 421, 430, 440; Home Economics 430; Psychology 351 or 370.

Community Health Education Option

Lower Division: Anthropology 120; Biology 200, 204, 206; Chemistry 200; Microbiology 100, 101; Psychology 100; Safety Education 220; Sociology 142.

Upper Division: Health Science 300, 400, 401, 430, 485; three courses selected from the following: Health Science 321, 322, 325, 327, 420; one 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

Lower Division: Industrial Arts 161; Physical Education 130; Safety Education 220; Physics 100A or 104; Psychology 100.

Upper Division: Civil Engineering 429; Criminal Justice 455; Instructional Media 300; Educational Psychology 305; Health Science 327, 421; Safety Education 321, 321L, 323, 422, 422L, 423, 423L, 425, 460; nine units selected from the following: Educational Psychology 350, Instructional Media 301, Psychology 351, Safety Education 330, 335, 490, 499.

Minor in Health Science

A minimum of 23 units which must include:

Lower Division: Microbiology 101.

Upper Division: Health Science 321 or 322, 325, 327, 430, 440; Home Economics 430; Safety Education 330.

Minor in Safety Education

A minimum of 20 units which must include:

Lower Division: Physical Education 130; Safety Education 220.

Upper Division: Industrial Technology 307; Safety Education 321, 321L, 422, 422L, 423, 423L; 7 units of electives selected from the following: P.E. 248, Health Science 327, Criminal Justice 455, C.E. 429, Safety Education 335, Industrial Arts 161.

Master of Science Degree in Health Science

A program of study leading to the master of science degree in health science is offered. For detailed information concerning the requirements see the *Graduate Bulletin.*

Lower Division

210. Contemporary Health Problems (3) F, S Irwin
Development of modern health knowledge, attitudes and behavior; includes family 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

300. Community Health Statistics (3) F, S Beegle
Prerequisite: Mathematics 100. Concepts and procedures of statistical analysis in community health. (Lecture 2 hours, laboratory 3 hours.)

320. Community Health Problems (3) F, S Cortese, Torney
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.

321. Consumer Health (3) F, S Campbell
Quackery and fraudulent health practices; protection agencies; laws protecting consumer health; criteria for selecting health information, products and services, and medical care services.

322. Environmental Health (3) F, S Lussier
Factors in man's physical environment which may exercise a deleterious effect on his physical development, health and survival.

325. The School and Sex Education (3) F, S Beegle, Campbell
Prerequisites: Biology 200, Psychology 100; or equivalent. Development and conduct of sex education in American schools; factors in human growth and sexual maturation; family health problems; parenthood; family planning.

327. Stimulants and Depressants (3) F, S Beegle, Irwin, Torney
Narcotics and addiction; alcohol and alcoholism; smoking and health; dangerous drugs; and related laws.

400. Determinants of Disease Prevalence in Man (3) F Beegle
Prerequisite: Microbiology 100 or equivalent. Application of epidemiologic procedures to the understanding of the occurrence and control of infectious and chronic diseases, mental illness, environmental health hazards, accidents and geriatric problems.

401. Community Health Education (3) S Allen
Concepts of community health education with emphasis on community organization; application of these concepts to health education activities of official, voluntary and professional health agencies.

410. Health Science and the Young Child (3) F, S Irwin, Pollock
Health needs and problems of the young child; health science content pertaining to attitudes and behavior; concepts of appraisal, services and healthful environment.

411. Health Science for Teachers (3) F, S Allen, Burhans, Henderson, Irwin
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).

420. International Health (3) S Staff
Factors affecting health in selected populations, international variations, human ecology and the organization and purpose of agencies functioning in this field.

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.

430. School Health Program (3) F, S Cortese, Pollock
Intensive analysis of the philosophy, organization and legal aspects of the school health program.

435. School Health Problems (3) S Lussier
Prerequisite: Student teaching or teaching experience or consent of instructor. Analysis and approaches for solving health problems of the school-age child.

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.

480. Observation and Participation in Health Science (3) F, S Staff
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, Torney
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) On demand Staff
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 Staff
Group investigation of selected topics. Topics to be announced in the *Schedule of Classes*. May be repeated for credit to a maximum of six units.

Graduate Division

501. Public Health Organization (3)

508. Administrative Relationships in Health Education Programs (3)

516. Patient Health Education (3)

570. Theoretical Concepts and Issues in Health Science (3)

581. Curriculum Development and Evaluation in School Health Education (3)

625. Seminar in Sex Education (3)

626. Seminar in Preventive Medicine and Public Health (3)

627. Seminar in Stimulants and Depressants (3)

628. Seminar in Consumer and Environmental Health (3)

696. Research Methods (3)

697. Directed Studies (1-3)

698. Thesis or Project (1-4)

Safety Education

Lower Division

220. Public Safety and Accident Prevention (2) F, S Probst
Accident prevention in the home, at school, on the job and in the community.

Upper Division

321. Driver and Traffic Safety Education I (2) F, S Probst
Co-requisite: Safety Education 321L. Study of factors basic to safe and responsible 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.

323. Highway Transportation Systems (3) F Kaywood
Examination of the U.S. highway transportation system with emphasis on activities and agencies concerned with safe and efficient operation.

330. Elementary and Secondary School Safety (2) F Probst
Responsibilities of the classroom teacher in school safety education programs.

335. School Emergency Procedures (2) S Probst
Prerequisite: Physical Education 130. Functions and responsibilities of administrators and teachers during school emergencies, such as earthquake, fire, nuclear attack, riot and accidental injuries.

422. 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. Co-requisite: 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
Prerequisites: Safety Education 422, 422L (may be taken concurrently) and consent of instructor. Co-requisite: Safety Education 423. Laboratory experience teaching beginning drivers in the driving simulator laboratory. Not open to students with credit in Safety Education 445.

425. Behavioral Factors in Traffic Safety (3) S Staff
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.

460. Administration and Supervision of Driver Education Programs (2) F, S Kaywood
Prerequisites: Safety Education 423, 423L or consent of instructor. Organization and administration of secondary school driver education programs. Includes evaluation of current programs, appraisal of current trends and research studies, and factors involved in program supervision.

470. Disaster Preparedness Teacher Education (1) On demand Staff
Methods, materials and subject content for incorporating emergency preparedness into the classroom curriculum.

490. Independent Studies in Safety Education (1-3) On demand 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 the 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 of Classes*. May be repeated for credit to a maximum of six units.

Home Economics

Department Chairman: Dr. Merna A. Samples.

Emeritus: Zelpha Bates.

Professors: Hoff, Kefgen, Lare, Samples, Wharton.

Associate Professors: Buckner, Dinerstein, Hamilton, M. Moore, M. Rodriguez, Vanderwarf.

Assistant Professors: D. Baker, Dempster, Keenan, Rader.

Lecturers: Kesler, Soldat.

Credential Adviser: Mrs. Mabel Moore.

Academic Advising Coordinators:

Child Development: Dr. Suad W. Kesler.
Dietetics and Food Administration: Dr. Mildred S. Rodriguez.
Education: Mrs. Mabel S. Moore.
Environmental Factors: Mrs. Grace E. Dinerstein.
Family Finance, Management and Consumer Services: Mrs. Maxine K. Keenan.
Textiles and Clothing: Ms. Mary F. Kefgen.

The Department of Home Economics offers programs of study leading to the bachelor of arts and master of arts degrees. Specific information related to the master's degree program is found in the *Graduate Bulletin*.

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 development and family relations; 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 Institution Administration. Requirements for membership in the American Dietetic Association include special courses in quantity food production, food service management, diet therapy, chemistry, microbiology and economics. In addition, satisfactory completion of a dietetic internship approved by the American Dietetic Association is required beyond the bachelor's degree.

Home Economics in Extension Service. General home economics and/or courses in two or more areas of home economics are needed. Courses in business, speech, journalism, radio and television are desirable.

Home Economics in Community Service. This program prepares for career opportunities in health, welfare and other 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.

Major in Home Economics for the Bachelor of Arts Degree

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 102 or 208A-B, 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 or 308 (if 200 and 201 were not taken); English 317 (if English 101 was not taken); Home Economics 312, 321 and 499 or approved alternative.

Additional required and elective courses for a specific program of study shall be selected in consultation with a faculty 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

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.

Admission to the Program:

Students must have completed a minimum of 8-13 units of chemistry, 3-8 units of biology and Home Economics 235 and 232 or 331 before admission to the program. Units completed for admission will be credited toward fulfillment of the total requirements of the program. Continuation in the program will require maintaining a grade point average of 2.0 (C) or better and satisfactory performance in all professional courses.

Minimum Course Requirements:

Natural Sciences: A total of 21 units selected with advisement from Biology 102, 208A-B; Chemistry 111A-B, 251, 251L, 327, 328, 441A-B, 448; Microbiology 210; Physics 104. *Social Sciences:* A minimum of six units selected with advisement from Anthropology 120, Economics 300, Psychology 381, Social Welfare 220, Sociology 100. *Supporting Professional Courses:* A minimum of nine units selected with advisement from Accounting 201, Educational Psychology 305, Instructional Media 300, Journalism 110, 460, 476; Quantitative Methods 240. *Home Economics:* Required courses are Home Economics 232 or 331 and Home Economics 235, 312, 321 and 490, 491 or 499; a minimum of 15 units selected with advisement from Home Economics 333, 335, 337, 338, 431, 432, 433, 436, 437, 438, 461. *Electives:* 10-11 units or minimum units to make an overall total of 40 units in home economics.

A total of 128 units must be completed for the bachelor of science degree.

Master of Arts Degree in Home Economics

A program of study leading to the master of arts degree in home economics is offered. For detailed information concerning requirements see the *Graduate Bulletin*.

Cooperating Program with Merrill-Palmer Institute

The Home Economics Department offers a cooperating program with the Merrill-Palmer 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

The Certificate Program in Child Development is designed to prepare persons interested in the development and education of young children, with special experiences which will enhance their knowledge and professional skills. The certificate has been designed with the belief that those interested should be college graduates, liberally educated with specialized knowledge and skills. The certificate is designed for those interested in nursery schools, day care centers, Head Start and pre-school programs and with children's programs in other public and private agencies.

The Certificate in Child Development may be earned in conjunction with the baccalaureate degree or teaching credential in home economics. 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.
2. 35-36 units distributed as follows:

   Lower Division (8-9 units): Home Economics 111, 141, 232 or 331.

   Upper Division (18 units): Home Economics 312, 314, 411, 413, 414, 433.
3. A minimum of nine units chosen in consultation with the coordinator selected from the following: Health Science 410; Home Economics 321, 412, 416, 418; Industrial Arts 388; Music 281 or 382 or 386; Physical Education 490; Social Welfare 370; Speech Communication 352, 361, 448; Theatre Arts 352 or 356.

Certification of successful completion of the Certificate in Child Development will be recommended by the coordinator.

Interested students should apply to Ms. Donna Dempster, Home Economics Department.

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. (Lecture 1 hour.)

Upper Division

487. Curriculum and Instruction in Consumer Education Programs (3) F Rader
Prerequisite: Home Economics 323, Ed.S.S. 450H 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. 450H 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: Home economics major, senior standing. Independent study under the supervision of a faculty member. Readings in areas of mutual 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 department.

493. Contemporary Issues in Home Economics (1-3) F, S Staff
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

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 Staff
Prerequisite: Home Economics 111 or Educational Psychology 301 or Psychology 361 or consent of instructor. 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 (3) F, S Dempster
Prerequisites: Upper division standing, Home Economics 111 or Educational Psychology 301 or consent of instructor. Analysis and interpretation of research, theory, current controversies, trands and techniques for study of the individual child in a family and community setting. (Lecture-discussion 3 hours.)

412. Family Interaction (3) F Dempster
Prerequisites: Upper division standing, Home Economics 312, Psychology 100, Sociology 100 or 142 or Anthropology 120. Interrelations of the individual and the family through the stages of the family's life cycle. (Lecture 3 hours.)

413. The Family in the Community (3) F, S Staff
Prerequisites: Upper division standing, Home Economics 312, Psychology 100 and Sociology 100 or 142 or Anthropology 120, or Educational Psychology 301. Exploration of the problems and current issues confronting the contemporary American urban family; alternate life-styles; minority family patterns and values; community resources and agencies. (Lecture, discussion 3 hours.)

414. Field Work with Preschool Children (3) F, S Staff
Prerequisites: Upper division standing, Home Economics 111 or Educational Psychology 301 or consent of instructor. Participation in group care of young children. Objectives, curriculum and techniques of various programs. (Lecture 2 hours, laboratory 3 hours.)

416. Directing Children's Programs (3) On demand Staff
Prerequisites: Upper division standing, consent of instructor. 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 3 hours.)

418. Working with Parents (3) S Staff
Prerequisites: Home Economics 111, 413 or consent of instructor. Principles and techniques for working with parents in community and school programs. Community responsibilities and resources for children. Content for programs in parenthood. (Lecture, discussion 3 hours.)

419. Family Life Education (2-3) On demand Staff
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 includinmedia, presentation methods and visual communication. (Lecture-laboratory 6 hours.)

142. Housing Design (3) F, S Dinerstein
Functional and aesthetic factors of housing as related to family needs. (Lecture-laboratory 6 hours.)

143. Applied Color: Theory and Application (2) S Dinerstein
Essential theories of color perception. Applied problems dealing with color interaction phenomena and its effects and function in home and family living. (Laboratory 4 hours.)

241. Contemporary Housing and Interiors (3) F, S Hoff
Planning the total home environment. Housing and interior design from a nontechnical basis. (Lecture-discussion 3 hours.)

Upper Division

340. History of Applied Arts (3) F Staff
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 3 hours.)

344. Interiors (3) F, S Hoff
Prerequisites: Home Economics 142, 241. Design principles as applied to interiors; analysis of materials and elements used in environmental planning. (Lecture-laboratory 6 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
Prerequisite: Home Economics 344 or consent of instructor. Advanced home furnishings design with emphasis upon functional planning for residences. Includes applied design, historic periods, lighting, color theory and textiles. (Lecture 3 hours.)

442. Housing Policies: Public and Private (3) F 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) S 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 Hamilton, Keenan
Prerequisite: Upper division standing. Application of social, economic and technical decision theory to the management of the home and the influence of 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. Theory and procedure in planning, controlling and protecting financial resources. Emphasis on education and laws to protect the consumer. (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. (Lecture 2 hours, laboratory 3 hours.)

421. Management of Work Capacity in the Home (3) S Keenan
Prerequisite: Home Economics 321. Physiological, psychological and sociological implications in the use of human and material resources for maximum economy, satisfaction and family well being. (Lecture 3 hours.)

423. Home Management Project (3) F, S Hamilton
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 Elderly (3) 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. (Lecture-discussion 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. Household Equipment: Performance Testing (3) On demand Hamilton
Prerequisites: Home Economics 327, Physics 104. Experimental problems on the performance of the major types of household equipment. (Lecture 2 hours, laboratory 3 hours.)

Food and Nutrition

Lower Division

232. Nutrition (3) F, S Wharton
Prerequisite: Biology 102 or laboratory course in one of the biological sciences. Essential nutrients, their physiological functions and human needs during the life cycle, food sources as applied to selection of an adequate dietary. Designed for elective students desiring basic nutrition information. (Lecture-discussion 3 hours.)

235. Principles of Food Preparation (3) F, S Vanderwarf
Prerequisite: Chemistry 111A or 200. Scientific principles and techniques in 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 Nutrition (3) F, S Baker
Prerequisites: Biology 102 or 208A-B, Chemistry 300 or 327 or equivalent. Foundations of nutrition and its relation to health; application to feeding the individual and family.(Lecture 3 hours.)

333. Meal Management (3) F, S Staff
Prerequisites: Home Economics 235, 232 or 331; 321 (may be taken concurrently), or equivalents. 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.)

334. Quantity Food Purchasing Management (1) On demand Vanderwarf
Prerequisite: Home Economics 335 (may be taken concurrently). Principles and procedures used when purchasing food for food service operations; use of specifications; factors affecting quality; inventory management; analysis of purchasing problems faced by food service managers. Field trips required.

335. Quantity Food Production (3) F Vanderwarf
Prerequisite: Home Economics 333. Principles of menu planning, food purchasing and preparation for large groups; cost control. Experience in large quantity food production. (Lecture 2 hours, laboratory 3 hours.)

337. Food Service Management (3) S Staff
Prerequisite: Home Economics 335. Principles of organization and management, cost control, personnel management and administration in institutional food services. (Lecture 3 hours.)

338. Institution Equipment and Layout (3) On demand Staff
Prerequisite: Home Economics 337. Selection, layout and maintenance of institution food service equipment. (Lecture 3 hours.)

430. Nutrition and Health (3) S Baker
Prerequisite: Upper division standing. Intensive study of nutrition including evaluation of current trends in food and nutrition. Designed for students in health education, elementary and secondary education, social service and other elective students. Not open to home economics majors. (Lecture 3 hours.)

431. Advanced Foods (3) S Baker
Prerequisites: Upper division standing, Home Economics 333 or 432. Selected food preparation problems. Use of additives, prefabrications, processing and sanitation. (Lecture 2 hours, laboratory 3 hours.)

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432. Experimental Foods (3) F Baker
Prerequisites: Chemistry 300 or 327, Home Economics 235 or equivalent. Scientific principles and experimental procedures applied to food processes. (Lecture 2 hours, laboratory 3 hours.)

433. Nutrition of Infants and Children (3) F Baker
Prerequisite: Home Economics 232 or 331 or equivalent. Nutritional needs specifically related to the development of the embryo, the infant and the child through adolescence. Methods of judging nutritional status of children and evidences of malnutrition. (Lecture 3 hours.)

435. Techniques for Teaching Foods (3) On demand Staff
Prerequisites: Ed.S.S. 450H, 481A-B. Suggested techniques for teaching foods on the meal basis in the 50-minute class period in the junior or senior high school. Emphasis on use of the all-purpose room; time management; arrangement of equipment in the units; work simplification; demonstration techniques; freezing as related to meal preparation; appealing food experiences for teen-agers as related to nutrition. (Lecture 3 hours.)

436. Advanced Nutrition (3) S Wharton
Prerequisites: Home Economics 331 or equivalent; Chemistry 448. Metabolism of protein, fats, carbohydrates, minerals and vitamins; interrelationships of nutrients; procedures for determining nutritional requirements of individuals. (Lecture 3 hours).

437. Cultural Aspects of Food and Nutrition (3) On demand Staff
Prerequisite: Home Economics 331. Cross cultural study of food and nutrition. Factors such as history, religion, food sources and socioeconomic status are considered. (Lecture-discussion 3 hours.)

438. Diet Therapy (3) F Wharton
Prerequisite: Home Economics 436. Introduction to therapeutic nutrition. Metabolic changes in specific pathological conditions, dietary modification used for treatment. (Lecture 3 hours.)

461. Community Nutrition (3) S Baker
Prerequisites: Upper division standing, Home Economics 232 or 331. Nutritional status and factors responsible for the nutrient intake of all people. Communication techniques in community nutrition education. (Lecture 3 hours.)

462. Recent Developments in Nutrition (3) F Wharton
Prerequisites: Upper division standing, Home Economics 232 or 331 or consent of instructor. Analysis of recent developments and current research in nutrition. (Lecture 3 hours.)

491. Directed Studies in Food and Nutrition (1-3) F, S Staff
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 Lare
Analysis of theories and methods of clothing construction. (Lecture 2 hours.)

254L. Laboratory in Clothing Design (1) F, S Staff
Prerequisite or concurrent registration in Home Economics 254. 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. Natural and synthetic fibers, yarn and fabric construction, dyes and finishes in fabric selection, performance and care from the consumer point of view. (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. Creative Pattern Design (3) F Lare
Prerequisite: Home Economics 254 or equivalent. Experimental approach to analysis of factors influencing clothing synthesis and design. (Lecture 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 Kefgen
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. Costume Design and Draping (3) S Lare
Prerequisite: Home Economics 254 or equivalent. Creating original design through French draping. (Lecture 2 hours, laboratory 3 hours.)

453. Advanced Textiles (3) S Lare
Prerequisites: Home Economics 353 and Chemistry 300 or 327. Chemical and physical structure of fibers and physical properties of yarns and fabrics in relation to fabric 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.)

492. Directed Studies in Textiles and Clothing (1-3) F, S Staff
Prerequisite: Senior standing. Independent study under the supervision of a faculty member. Written report is required. May be repeated for credit with consent of instructor.

Graduate Division

511. Family Development (3)

515. Goals of Human Development (3)

521. Decision Making in Home Management (3)

523. Consumer Protection (3)

530. Special Topics in Nutrition (1-3)

531. Nutrition Programs for School and Community (3)

532. Advanced Experimental Foods (3)

541. Contemporary Ekistics (3)

559. Apparel Behavior (3)

561. Curriculum Development in Home Economics (3)

563. Evaluation in Home Economics (3)

605. Seminar in Organization and Administration of Home Economics (3)

615. Seminar in Child Development (3)

625A-B. Seminar in Family Finance and Management (3,3)

635A-B. Seminar in Food and Nutrition (3,3)

645. Seminar in Ekistics (3)

655A-B. Seminar in Clothing and Textiles (3,3)

665. Seminar in Home Economics (3)

696. Research Methods (3)

697. Directed Research (1-3)

698. Thesis or Project (1-4)

Industrial Education

Department Chairman: Dr. Irvin T. Lathrop.

Professors: Dean, Farr, Genevro, Grainge, Lathrop, Nicholson, Patcha, P. Powell, Rawson, Ryan, Schmidt, D. Smith, Torres.

Associate Professors: Brandstatt, Gietl, Heineman, Macon, Quinones, Randall, Routh, E. Smith, Trout, Webster, Wittich.

Assistant Professors: Church, Kunst, Martin, Trusty.

Instructor: Haywood.

Credential Adviser: Dr. James Ryan.

Academic Advising Coordinators: Dr. Irvin T. Lathrop, Dr. James E. Ryan.

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 RPC 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.

Major in Industrial Arts for the Bachelor of Arts Degree

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 and 484. Education Single Subject 450I is not a requirement for the baccalaureate degree but must be taken the semester before student teaching.

Minor in Industrial Arts

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 Industrial Plastics Processing and Design

Director: C. B. Gilpin.

Professors: J. L. Dyer, Ph.D.; C. B. Gilpin, Ph.D.; E. Miller, D. Engr. Sci.; H. Unt, Ph.D.

Associate Professor: W. Edelman, Ph.D.

Assistant Professor: G. Trusty, Ph.D.

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 indications 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 processes, material testing procedures, economics of the polymerics industry and degradation of polymerics. All students in the program complete an individual 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 in Industrial Arts

A program of study leading to the master of arts degree in industrial arts is offered. For detailed information concerning the requirements see the *Graduate Bulletin.*

Lower Division

281. Exploratory Woodwork (2) F, S Trout
General woodworking designed to provide a broad background of information related 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. Not open to industrial arts majors. (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. Not open to industrial arts majors. (Laboratory included.)

Upper Division

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, S Powell
Experiences in planning, organizing and teaching a multiple activity program of industrial arts combined with utilization of tools, materials and processes as applied to public school practice. (Laboratory.)

384. Materials Testing and Evaluation (2) F, S 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 E. Smith
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. Industrial Arts for Elementary Teachers I (2) F, S Nicholson
Developing and fabricating teaching aids and integrated hand work units for elementary schools. Basic skills in the use of simple construction materials and tools. Open to industrial arts majors only by consent of instructor. (Laboratory included.)

389. Industrial Arts for Elementary Teachers II (2) S Nicholson
Prerequisite: Industrial Arts 388 or equivalent. Further studies in integrating construction with the social studies, science and other areas of the elementary school program. Wide variety of tools and materials used. (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 Staff
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 industrial education is an important consideration. (Lecture-discussion 3 hours.)

491. Special Problems in Industrial Education (1-5) F, S Lathrop
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. (Non-technical.)

492. Advanced Technical Studies (1-6) F, S Staff
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) On demand Lathrop
Prerequisite: Consent of department. Supervised experiences in manual arts therapy at various Veterans' Administration hospitals and rehabilitation centers. Students will acquire through observation and participation, clinical insight and experience in the procedures and practices in the field. 240 hours of experience required. (Field work.)

Automotive

Lower Division

161. Automotive I (2) F, S Staff
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 Rawson
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 included.)

362. Auto Electricity (2) F, S Staff
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 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 Rawson
Prerequisites: Industrial Arts 161 and 322, or equivalents. Techniques and practices of body rebuilding, refinishing and styling. (Laboratory included.)

365. Power Technology (3) 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. Auto Tuneup (2) F, S Staff
Prerequisite: Industrial Arts 362 or equivalent. Theories of design and operation of fuel system components. Multiple carburetion, progressive carburetion and fuel injection are studied. Techniques for trouble shooting and engine tuneup using advanced type testing equipment. (Laboratory included.)

462. Automatics (2) F, S Webster
Prerequisite: Industrial Arts 161 or equivalent. Theories of design and operation of fluid couplings, torque converters, automatic transmissions and power activated units. Latest methods of testing, servicing and repair are stressed. (Laboratory included.)

Drawing

Lower Division

141. Industrial Drawing I (2) F, S Staff
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) S Randall
Prerequisite: Industrial Arts 141 or equivalent. Use of graphical techniques as a means of presenting data. Graphical representation will include multiview, basic machine and schematic drawings. Representation of data with graphs and the solution of arithmetical problems graphically, microfilm duplicating and true dimensional techniques and conversion from English to S1 metric. Not open to students with credit in Industrial Arts 241. (Laboratory included.)

342. Technical Sketching (2) F Gietl
Principles and practice of freehand sketching of projects on paper and on the blackboard. (Laboratory included.)

343. Industrial Arts Design (3) S Trout
Prerequisite: Industrial Arts 141 or equivalent. 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) 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 Randall
Prerequisite: Industrial Arts 141. Development of table of offsets, arrangement and profile plans, lines drawings, transom and developable surfaces drawings for sailing and planing vessels. Calculations of displacement, center of buoyancy, center of gravity, curve of area, stability, sail plans and engine requirements. (Laboratory included.)

347. Building Construction Graphics (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) 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) S Randall
Prerequisites: Industrial Arts 131, 141. Development of drafting techniques applicable to schematic layout, study of electrical and physical symmetry, space allotment and mechanical development of electro-mechanical packages. (Laboratory included.)

Electricity-Electronics

Lower Division

131. General Electricity (2) F, S Staff
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
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, S 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.)

430. Electronic Service and Repair (2) F, S Staff
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) F, 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 Staff
Principles of elementary typographic design and layout, type composition and press-work. 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 emphasize 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 (2) 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.)

354. Graphic Arts Handicrafts (2) F 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 Staff
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, S 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) S 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 Kunst, 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 Nicholson
Materials of industry through creative experiences in the crafts media. Historical and industrial related information is included. (Laboratory included.)

471. Industrial Crafts II (3) S Nicholson
Prerequisite: Industrial Arts 371. Advanced studies of industrial crafts media. Emphasis on ceramics and lapidary. (Laboratory included.)

Metals

Lower Division

121. General Metals I (2) F, S Staff
Properties of ferrous and non-ferrous metals, characteristics of hand and machine tools, and the basic processes of forging, foundry, art metal, machining, sheet metal 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 Patcha
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, drilling, lathe, milling, grinder and shaper work with emphasis on several practices and tool set-ups applicable to the industrial arts program. (Laboratory included.)

326. Metal Forming and Fabrication (3) S Patcha, E. Smith
Principles and practices of hand and machine forming processes on light gauge ferrous and non-ferrous metals, production fabricating techniques and metal joining processes. Not open to students with credit in Industrial Arts 324 and 325. (Laboratory included.)

422. Welding II (2) S Patcha
Prerequisite: Industrial Arts 322 or equivalent. Principles and practice of fusion, brazing and resistance welding processes with emphasis on alloy metals. (Laboratory included.)

423. Machine Tools II (3) F, S Genevro, Heineman
Prerequisite: Industrial Arts 323 or equivalent. Continuation of Machine Tools I with emphasis on advanced machining and tooling operations, basic machine design, and machine, tool and cutter maintenance. (Laboratory included.)

424. General Metals II (2) S Heineman, E. Smith
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. Recommended for seniors preparing to teach in the metals area. (Laboratory included.)

Photography

Lower Division

101. Basic Photography (2) F, S Staff
A beginning course to familiarize students with the fundamentals of photography. Units on cameras, exposure meters, films, darkroom technique, lighting, portraiture, optics and cinematography. Printing-out, papers, contact and projected prints. Not open to students with credit in Photography 210. (Laboratory included.)

Upper Division

304. Advanced Photography (3) F, S Routh, Schmidt, 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
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. A project demonstrating achievements will be required. (Laboratory included.)

404. Industrial Photography (2) F Wittich
Prerequisite: Industrial Arts 101 or equivalent. Course designed to give exploration of camera and laboratory techniques as applied to industrial and commercial fields. Related photo assignments of studio, in-plant and field problems will be given. (Studio and laboratory work 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. Emphasis on recording subject matter from nature with the exclusion of all else. Will include infrared photography and macro techniques. Field trips will be utilized. (Laboratory included.)

406. Experimental Photography (2) S Schmidt
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.)

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.)

Plastics

Lower Division

170. Introductory Plastics (2) F, S Trusty
Study of thermoplastic and thermoset plastics; includes basic applications, manufacturing processes, economic comparisons and finishing techniques. (Laboratory included.)

Upper Division

370. Industrial Plastics II (3) F, S Trusty
Prerequisite: Industrial Arts 170 or consent of instructor. Advanced studies of thermoplastic and thermoset plastics and all related material processing equipment. Plastic tooling, mold making, as well as machine operation and maintenance will be emphasized. (Laboratory included.)

373. Plastic Machine Design and Maintenance (3) F Trusty
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. Industrial Plastics III (3) F, S Trusty
Prerequisite: Industrial Arts 370 or consent of instructor. Study of polymers and specialized applications. Emphasis will be placed on design, construction, research and evaluation of materials and equipment related to these materials. (Laboratory included.)

474. Plastic Machine Mold Design and Fabrication (3) S Trusty
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 Staff
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, S 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
Methods of upholstery practices and use of tools and equipment employed in the process of upholstery. (Laboratory included.)

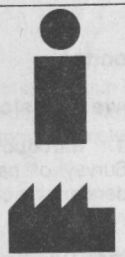
414. Boat Construction (2) S Macon
Prerequisite: Industrial Arts 312 or consent of instructor. Interpretation of line drawings and specifications, design and construction of forms, molds and hulls of straked, molded plywood and fiberglass systems. (Laboratory included.)

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)
591. Curriculum Construction in Industrial Education (3)
592. Evaluation in Industrial Education (3)
593. Techniques in Teaching Industrial Education (3)
594. Modern Concepts in Industrial Education (3)
650. Seminar in Industrial Education (3)
696. Research Methods (3)
697. Directed Research (2)
698. Thesis or Project (1-4)

Industrial Technology



Department Chairman: Dr. Paul L. Kleintjes.

Professors: Kleintjes, H. Robinson.

Associate Professors: Brice, G. Hayes, Krauser, Pearson.

Assistant Professor: Grossman.

Lecturers: Bryan, Johnson.

Academic Advising Coordinators:

Construction Option: Dr. Paul L. Kleintjes.

Electronics Option: Mr. Henry J. Krauser.

Manufacturing Option: Mr. Robert C. Brice.

Quality Assurance Option: Dr. Glenn E. Hayes.

The program in industrial technology is designed for the student who, through screening based upon evaluation of previous college work, job experience, testing and counseling, clearly demonstrates the aptitude and promise for high level technical work with related administrative and management responsibility. The following student groups are served by this program:

1. Transfer students from the community colleges who desire to earn the bachelor of science degree in ttheir area of specialization.
2. Students who desire a change of objective from other occupational curricula.
3. Personnel currently employed who desire additional training and/or the bachelor's degree.

This curriculum, for degree purposes, is open only to students who are able to transfer approved technical course credits earned at two or four-year colleges or approved military service schools. Prospective students must be advised by a member of the industrial technology faculty prior to submission of an application for admission to the program. No more than 24 approved technical credits, of grade C or better, can be transferred. Minimum requirements for admission to any option are determined in conference with an option adviser. Deficiencies in technical transfer credits may have to be completed at community colleges if not available on this campus. The transfer student follows the catalog current in his initial enrollment in the major until graduation.

There are four specialization options in industrial technology.

Construction Technology. Qualifies a person to serve in expediting, coordination, inspection, specification and proposal writing, facilities planning and development, project management and associated work in the construction or manufacturing industries.

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.

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.

Zapata Corporation
Industrial Tectonics Inc.
Douglas Aircraft Company
Fluor Corporation
Northrop Nortronics
Collins Radio
Security Pacific National Bank
Beckman Instruments
Rockwell International
Norris Industries
Hughes Aircraft, Aerospace Group
Long Beach Naval Shipyard
Electronic Memories, Inc.
Classic Development Company
Joseph T. Ryerson, Inc.
Quality Audit Company

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.

Specific requirements for each option are indicated below:

Construction Technology. Accounting 201, Finance 222, 342; Chemistry 100; economics, plane surveying, English 100; Mathematics 117, 122; Philosophy 170 or 270; Physics 100A-B; Psychology 381; industrial and architectural drafting and design (7 units), construction (7 units), transferable technical electives (7 units); Industrial Technology 300, 301, 302, 304, 307, 309, 322, 403, 405, 406, 407, 422, 423, 425, 435. Field work and general education requirements and electives selected in consultation with adviser, to total 128 units.

Electronics Technology. Art 330A; Accounting 201; Finance 222 (or equivalent); Management 300, 406; Chemistry 100; economics; English E00; Mathematics 117, 122; Philosophy 170 or 270; Physics 100A-B; Psychology 381; industrial drawing (3 units), machine tools (2 units); or Industrial Technology 344; Industrial Technology 300, 301, 305, 306, 307, 309, 340, 342, 343, 402, 406, 408, 445, and a minimum of three courses selected in consultation with the adviser from the following: Industrial Technology 313, 369, 403, 404, 409, 410, 442, 443, 444 or 447. Twenty-four units of transfer technical courses, field work, general education requirements and electives selected in consultation with adviser, to total 128 units.

Manufacturing Technology. Art 330A; Accounting 201; Management 300, 406 or Quantitative Systems 210; Chemistry 100; economics; English 100; Mathematics 117, 122; Philosophy 170 or 270; Physics 100A-B; Psychology

381; up to 24 transferable technical units to include drafting and design (8 units), foundry (2 units) or Industrial Technology 303, tool design (3 units), or Industrial Technology 364, machine shop (6 units), technical or related subjects (5 units); Industrial Technology 300, 301, 302, 304, 305, 306, 307, 309, 361, 362, 369, 402, 406, 407, 408, 466 and 11 units selected in consultation with the adviser from the following: Industrial Technology 313, 320, 404, 405, 408, 409, 469, 491. Field work, general education requirements and electives selected in consultation with adviser to total 128 units.

Quality Assurance. Art 330A; Accounting 201; Finance 222; Management 300, 406; Chemistry 100; economics; English 100; Mathematics 117, 122; Philosophy 170 or 270; Physics 100A-B; Psychology 381; up to 24 transferable technical units to include mechanical drafting (3 units), machine shop (3 units), from data processing, electronics, numerical control or industrial electricity (6 units), from the fields of quality control, testing and reliability (12 units); Industrial Technology 300, 301, 306, 307, 309, 313, 361, 362, 369, 402, 403, 404, 469, 470, 471; and a minimum of two courses taken from Industrial Technology 407, 409, 410 and 447. Twenty-four units of transfer technical courses, field work, general education requirements 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.

Upper Division

300. Industrial Communications (3) On demand Pearson
Prerequisites: English composition and industrial drawing. Accurate, economical, rapid transmission and interpretation of information.

301. Materials of Industry (3) F, S Kleintjes
Prerequisites: Physics 100A,B, Chemistry 100. Properties and applications of industrial materials.

302. Industrial Electricity (3) F, S Staff
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 (2) F, S Brice
Foundry practices and casting techniques used in industry. Not open to students with credit in Industrial Technology 365. (Laboratory included.)

304. Mechanics of Materials (3) F, S Krauser, Staff
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. (Laboratory included.)

306. Process of Industry (3) F, S Brice
Prerequisite: Industrial Technology 301. Methods used in industrial manufacturing and fabrication.

307. Industrial Safety (3) F, S Staff
Industrial safety management and administration, including history, economic factors such as workmen's compensation, disability, direct and indirect costs; responsibilities, organization, accident investigation and trends.

308. Systems Safety (3) On demand Staff
Prerequisites: Mathematics 122, Philosophy 270, Industrial Technology 307 recommended. Application of mathematics and simulation techniques for the identification, examination and calibration of the interaction between and among the elements of a system to relate to the safety of the system and its users.

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) On demand Staff
Prerequisite: Industrial Technology 307. Detection, analysis and control of health hazards that affect the body and the atmosphere in the industrial environment.

313. Metrology (3) F Robinson
Prerequisite: Industrial Technology 306. Instrument calibration, standards and precision measurement for quality assurance and reliability.

320. Materials Handling (3) S Hayes
Prerequisite: Industrial Technology 306. Work simplification in movement of materials in production.

321. Construction Cost Estimating (3) S Staff
Prerequisite: Architectural drawing and construction. Principles and practices in making quantity surveys and labor estimates for construction projects.

322. Functional Building Systems (3) S Grossman
Prerequisite: Industrial Technology 302. Principles and current practices in heating, ventilating, air conditioning, vertical transportation and architectural acoustics.

340. Electronic Circuit Analysis (3) F, S Krauser
Prerequisites: Physics 100B, equivalent to Mathematics 116, 16 units of electronics. RLCM network and applications to industrial devices and systems. (Lecture-discussion 2 hours, problem session 2 hours.)

342. Transistor Theory (2) F, S Staff
Prerequisite: Industrial Technology 340. Transistor devices and linear circuit applications. Not open to students with credit in Industrial Technology 345. (Laboratory included.)

343. Electronic Testing and Troubleshooting (2) F, S Johnson
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 (2) F, S Brice
Operations and use of the conventional machine tools. For electronics option only.

361. Industrial Metallurgy (2) F, S Robinson
Prerequisite: Industrial Technology 301; recommended: 369. Current and emergent applications of metallurgy to manufacturing of modern hardware. (Metallographic laboratory included.)

362. Heat Treating (2) F, S Brice, Robinson
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. (Laboratory included.)

364. Industrial Tooling (3) On demand Brice, Hayes
Prerequisites: Machine tools and industrial drafting. 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 session 2 hours.)

369. Quality Assurance I (3) F, S Hayes
Prerequisites: Industrial Technology 306, 313. Quality assurance practices in industry including control systems, sampling, cost destructive and nondestructive test, surface quality, mechanical, physical and chemical properties. Not open to students with credit in Industrial Technology 468. (Laboratory and field trips included.)

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. Acquisition Techniques for Industrial Application (3) F, S Pearson
Prerequisites: Industrial Technology 301 and accounting. Examination of the acquisition function within the industrial complex.

404. Industrial Instrumentation (3) S Krauser
Prerequisites: Industrial Technology 306, 343; Physics 100B. Techniques in measurement of physical quantities with emphasis on methods and equipment relating to industrial control and processing.

405. Plant Layout and Planning (3) F, S Hayes
Prerequisite: Drafting (306 recommended). Planning practices, procedures and requirements for laying out industrial facilities.

406. Industrial Proposals (3) F, S Pearson
Prerequisites: English 317 or Industrial Technology 300, industrial drawing. Analysis of the inquiry techniques and procedures in the preparation of proposals.

407. Critical Path and PERT (3) F, S Grossman
Prerequisites: Industrial Technology 306 or construction methods, logic. Planning, scheduling, cost and job control by the network techniques of the critical path and program evaluation review techniques.

408. Production Technology (2) F, S Johnson, Robinson
Prerequisites: Industrial Technology 402, 406. Modern manufacturing processes and equipment; operation sequence planning; economic aspects of equipment selection, tooling and production.

409. Senior Problems in Industrial Technology (1-3) F, S Staff
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.

410. Computer Applications (3) F, S Krauser
Prerequisite: Course in logic. Survey of computer applications to business, manufacturing, research and simulation.

422. Mechanical Equipment for Buildings (3) F Grossman, Staff
Prerequisite: Industrial Technology 302 (may be taken concurrently). Techniques in the art and science of water supply, plumbing, storm drain, fire protection, lighting and electrical distribution systems.

423. Site Analysis and Development (3) S Grossman, Staff
Prerequisite: Course in surveying. Current practices in site analysis and development including soil mechanics, mapping, earth movement and placement, equipment utilization and proposal preparation.

425. Construction Methods (3) S Grossman
Prerequisites: Industrial Technology 304, 423 (may be taken concurrently). Current practices in structural design, fabrication, and erection; materials, methods and equipment used in industrial and commercial building construction.

435. Managing Building Construction Projects (3) S Staff
Prerequisite: Industrial Technology 425. Techniques of controlling and coordinating building projects.

442. Computer Circuits (2) F, S Krauser, Staff
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 Staff
Prerequisite: Industrial Technology 342. Block diagram approach to electronic systems, including computers, guidance, process control, data handling, navigation.

444. Advanced Electronic Communications (3) S Staff
Prerequisite: Industrial Technology 342. Advanced communications, telemetry; radio, radar, microwave, navigational and laser systems.

445. Microelectronics (3) F Staff
Prerequisite: Industrial Technology 342. Design, processing and applications of monolithic and hybrid microcircuits for analog and digital systems.

447. Electronic Production Techniques (2) F, S Pearson
Prerequisite: Industrial Technology 306. Modern production practices and techniques used in the electronics industry. (Field trips and laboratory included.)

466. Welding Metallurgy (2) F, S Brice, Robinson, Staff
Prerequisite: Industrial Technology 362. Theory and applications of current and emergent joining processes with consideration of weldability of metals and thermal effects on properties. Welding techniques in selected processes exercised in laboratory.

469. Quality Assurance II (3) S Hayes
Prerequisite: Industrial Technology 369. Management aspects of quality assurance organizations, planning, controlling, directing and maintaining quality functions.

470. Testing of Materials (3) F Pearson
Prerequisite: Industrial Technology 369. Testing of materials, including both destructive and non-destructive procedures.

471. Quality Control Concepts (3) S Hayes, Pearson
Prerequisite: Industrial Technology 369. Control of quality in manufacturing, including statistical quality control, process and material control.

491. Problems in Production Technology (3) On demand Robinson, Staff
Prerequisites: Industrial Technology 402, 406, industrial experience. Problems in production technology: current problems will be identified, solutions proposed and evaluated and recommendations developed and presented.

492. Advanced Studies in Technology (3) On demand Staff
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.

Nursing

Department Chairman: Dr. Joan Cobin.

Emeritus: Dorothy L. Walsh.

Professors: Cobin, Hoffman, Kaufman, Sucher, Traber.

Associate Professors: Koehler, Lackey, Pentecost.

Assistant Professors: Campbell, Cleveland, Dunlap, Dunworth, Garofalo, McGuire, Meisenheimer, B. Moore, D. Moore, Mullins, Roberts, Sakamoto.

Lecturers: Grogan, Jasmin, Kochman, Nelms, Smith, Trygstad, White.

Academic Advising Coordinators: Mrs. Mabel Hoffman, Ms. Phyllis Lackey, Ms. Vivian Sucher.

Bachelor of Science in Nursing

The baccalaureate program offers courses that prepare the student to become a professional nurse practitioner. Two distinct categories of students are eligible for admission: The "basic student" who enters the University without having completed a technical level nursing program and the "registered nurse student" who, having completed a course of study at the technical level, desires further study to expand her or his nursing capabilities to the professional level. Though each category of student enters at different levels, the terminal objectives of the nursing program are the same for both groups. The "basic student" upon completion of the program is eligible to write the examination for licensure to practice as a registered nurse. All graduates are recommended for certification as a public health nurse in the State of California. The program is accredited by the California State Board of Nurse Education and Nurse Registration and the National League for Nursing.

The purpose of the bachelor of science program in nursing is to prepare students to function upon graduation as a professional nurse practitioner in a variety of settings. Graduates are expected to have acquired foundations for continuing professional development.

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 practitioner, 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. Change of major applications will not be accepted once a student is admitted 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. The "R.N. student," who holds a current license to practice nursing in California, will only be admitted upon completion of an associate degree (AD). Graduates of diploma schools of nursing are urged to seek admission to a community college that offers them opportunity to earn an AD with a combination of general education courses and "blanket credit" and/or credit by examination for diploma nursing course of study. Transfer units must include course work in anatomy, physiology, chemistry, microbiology and at least two social sciences (psychology, sociology or anthropology). Once admitted to the University all 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, problem solving and manual dexterity.
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.

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 clinical nursing 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 semesters for the "R.N. student."

Basic

Lower Division: Chemistry 200, Biology 208A-B, Microbiology 210, two social science courses*, Nursing 200, 200L, 201, 250, 250L, 252, 252L.

Upper Division: Chemistry 300, Biology 345, Microbiology 345, statistics**, Nursing 300, 300L, 302, 307, 350, 350L, 352, 357, 400, 400L, 402, 402L, 450, 450L, 452, 452L.

R.N.

Lower Division: Earned Associate Degree in Nursing (ADN) including certification at completion of general education requirements.

Upper Division: Chemistry 300, Biology 345, Microbiology 345, statistics**, one social science course*, Nursing 305, 305L, 307, 355, 355L, 357, 400, 400L, 402, 402L, 450, 450L, 452, 452L.

Lower Division

150. Explorations in Nursing (2) F, S Staff
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 Staff

200. Health Skills (4) F, S Meisenheimer
Prerequisites: Sophomore standing, consent of instructor. Co-requisite: Nursing 200L. Basic principles of total patient care is the major emphasis. Principles from physical science and social science are identified in the nursing skills essential to the delivery of basic nursing care. (Lecture-discussion 4 hours.)

200L. Health Skills Laboratory (2) F, S Meisenheimer
Prerequisites: Sophomore standing, consent of instructor. Co-requisite: Nursing 200. Practice in a laboratory setting of the skills necessary in the delivery of total patient care. (Laboratory 6 hours.)

201. Legal Aspects of Health Care (2) F Sucher
Legal responsibilities of professional personnel is dealt with as it relates to delivery of health services. Legal control of licensure and nursing practice is emphasized. Not open to students with credit in Nursing 481. (Lecture-discussion 2 hours.)

250. Clinical Health Skills (4) F, S McGuire
Prerequisites: Biology 208A-B, Nursing 200, 200L, 201, consent of instructor. Co-requisites: Nursing 250L, 252, 252L. Assessment of man's position on the health-illness continuum in respect to a limited number of overt and covert variables and basic nursing interventions. (Lecture-discussion 4 hours.)

250L. Clinical Health Skills Laboratory (2) F, S McGuire
Prerequisites: Biology 208A-B, Nursing 200, 200L, 201, consent of instructor. Co-requisites: Nursing 250, 252, 252L. Emphasis is upon developing skill in the nursing process to facilitate man's adaptation on the health-illness continuum using a limited number of overt and covert variables. Synthesis of knowledge and experience will be accomplished using a variety of clinical settings to practice basic nursing interventions. (Laboratory 6 hours.)

*Anthropology, Psychology or Sociology.
**Any upper division course acceptable.

252. Human Awareness in the Health Professions (2) F, S White
Awareness of self and others through the application of various theories to intra and interpersonal relationships with emphasis on health professional-client interactions.

252L. Human Awareness in the Health Professions Laboratory (1) F, S White
Co-requisite: Nursing 252. Practical projects in observation, assessment and intervention provide opportunities for application of theory of interpersonal skills. (Laboratory 3 hours.)

300. Nursing Process I (2) S Dunlap
Prerequisites: Nursing 250, 250L, 252, 252L, Microbiology 210, six units of social science, consent of instructor. Co-requisites: Nursing 300L, 302. Assessment of man's position on the health-illness continuum in respect to overt and covert variables and the exploration and evaluation of some alternative nursing interventions. Formal and informal functions of health care systems will be explored as well as continued study of group process. (Lecture-discussion 2 hours.)

300L. Nursing Process Laboratory I (6) S Dunlap, D. Moore, Trygstad
Prerequisites: Nursing 250, 250L, 252, 252L, Biology 208A-B, Chemistry 200, Microbiology 210, six units of social science, consent of instructor. Co-requisites: Nursing 300, 302. 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. Experience as a team member will be stressed. (Laboratory 18 hours.)

302. Clinical Studies I (2) S D. Moore
Prerequisites: Nursing 250, 250L, 252, 252L, consent of instructor. Co-requisites: Nursing 300, 300L. 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.)

305. Nursing Assessment I (2) F, S Dunworth
Prerequisites: Current California Registered Nurses' license, AD, consent of instructor. Co-requisite: Nursing 305L. The nurse's role is emphasized in facilitating adaptation toward optimum health for individuals and families on the health-illness continuum. (Lecture-discussion 2 hours.)

305L. Nursing Assessment Laboratory I (2-5) F, S Dunworth
Prerequisites: Current California Registered Nurses' license, AD and/or consent of instructor. Co-requisite: Nursing 305. Guided assistance to identify and further develop individual strengths and competence in nursing practice. (Laboratory 6-15 hours.)

307. Human Life Cycle I (3) F, S Mullins
Prerequisites: Junior standing, consent of instructor. Study of the physiological, social, intellectual and emotional development of persons as individuals and as family members from birth through adolescence. (Lecture-discussion 3 hours.)

350. Nursing Process II (2) F Cleveland, Sakamoto
Prerequisites: Nursing 300, 300L, 302, 307; Chemistry 300, consent of instructor. Co-requisites: Nursing 350L, 352. Assessment of man's position on the health-illness continuum in respect to multiple overt and covert variables and the evaluation and placement in priority alternative nursing interventions. Study of change and the responsibilities in the guidance of others involved in nursing care. (Lecture-discussion 2 hours.)

350L. Nursing Process Laboratory II (6) F Cleveland, Garofalo, Nelms, Sakamoto
Prerequisites: Nursing 300, 300L, 302, 307; Chemistry 300, consent of instructor. Co-requisites: Nursing 350, 352. Experience in assisting man to manipulate multiple variables that interfere with his basic physiologic and psychosocial needs. Emphasis is upon anticipation of nursing problems, planning and implementing appropriate nursing interventions. Team leading experience will be included. (Laboratory 18 hours.)

352. Clinical Studies II (2) F Garofalo, Nelms
Prerequisites: Nursing 300, 300L, 302, 307; Chemistry 300, consent of instructor. Co-requisites: Nursing 350, 350L. Group interaction drawing on knowledge and experience from a variety of situations and clinical settings and primarily focusing on problems of change; anticipatory nursing care; the positive and negative aspects of the manipulation of variables; validation of information, hypotheses and nursing care from various sources; and the problems associated with being a leader. (Lecture-discussion 2 hours.)

355. Nursing Assessment II (2) F, S Sucher
Prerequisites: Chemistry 300, Microbiology 345, Nursing 305, 305L. Co-requisite: Nursing 355L. Continuation of Nursing 305. (Lecture-discussion 2 hours.)

355L. Nursing Assessment Laboratory II (2-5) F, S Sucher
Prerequisites: Nursing 305, 305L. Co-requisite: Nursing 355. Continuation of Nursing 305L. (Laboratory 6-15 hours.)

357. Human Life Cycle II (3) F, S Hoffman
Prerequisites: Junior standing, Nursing 307, consent of instructor. Study 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 Pentecost
Prerequisites: Nursing 307, 350, 350L, 352, 357; Biology 345; Microbiology 345, consent of instructor. Co-requisite: Nursing 400L. Continued study of the adaptation model with emphasis on complex patient problems involving multiple variables and possible nursing interventions. Emphasis is upon less well defined problems and their causes, more original and creative nursing interventions and more in-depth study of the involvement of families and the community as cause-effect-therapeutic agents in patient problems and care. (Lecture-discussion 2 hours.)

400L. Nursing Process Laboratory III (1) F, S Pentecost
Prerequisites: Nursing 307, 350, 350L, 352, 357; Biology 345; Microbiology 345, consent of instructor. Co-requisite: Nursing 400. Experience in assisting man (especially including families and communities as well as individuals) to make positive adaptations to complex health problems involving multiple variables and posing many possible nursing interventions. Emphasis is not only on anticipating nursing problems and planning and implementing appropriate nursing interventions, but also on evaluating care and creating new approaches to solving health problems where appropriate. (Laboratory 3 hours.)

402. Clinical Studies III (2) F, S Lackey, Pentecost
Prerequisites: Nursing 307, 350, 350L, 352, 357; Biology 345; Microbiology 345, consent of instructor. Co-requisite: Nursing 402L. Group interaction which focuses on diversified and/or permanent interruptions in the health-illness continuum and associated nursing care which will be evaluated in a variety of settings and with a variety of life styles. (Lecture-discussion 2 hours.)

402L. Clinical Studies Laboratory III (4) F, S Lackey, Pentecost
Prerequisites: Nursing 307, 350, 350L, 352, 357; Biology 345; Microbiology 345, consent of instructor. Co-requisite: Nursing 402. Experience evaluating multiple and diversified (and/or permanent) health problems of individuals, families and communities representing a variety of life styles while gaining experience in providing indicated and creative nursing care in a variety of settings. (Laboratory 12 hours.)

450. Nursing Process IV (2) F, S B. Moore
Prerequisites: Nursing 400, 400L, 402, 402L, consent of instructor. Co-requisite: Nursing 450L. Investigation of the adaptation models process as a nursing science using research methodology. (Lecture-discussion 2 hours.)

450L. Nursing Process Laboratory IV (1) F, S B. Moore
Prerequisites: Nursing 400, 400L, 402, 402L, consent of instructor. Co-requisite: Nursing 450. Preparation of a pilot study in a clinical area selected by the individual student. (Laboratory 3 hours.)

452. Clinical Studies IV (2) F, S Campbell, Hoffman, Kaufman, Roberts
Prerequisites: Nursing 400, 400L, 402, 402L, consent of instructor. Co-requisite: Nursing 452L. Group interaction focused on assisting individuals to adapt to changes that occur in the modes of physiologic needs, self-concept, role mastery and interdependence as a result of their positions on the health-illness continuum throughout the life cycle. Examination of the effects of these changes on the patient, the family, and the community in a variety of agencies and settings will be conducted. (Lecture-discussion 2 hours.)

452L. Clinical Studies Laboratory IV (4) F, S Campbell, Hoffman, Kaufman, Roberts
Prerequisites: Nursing 400, 400L, 402, 402L, consent of instructor. Co-requisite: Nursing 452. Experience assisting individuals in adapting to changes that occur in all of the adaptive modes as a result of their positions on the health-illness continuum throughout the life cycle. Studying the effects of these changes on the patient, the family and the community as well as providing nursing interventions will take place in clinical agencies and settings selected as areas of concentration by each individual student. (Laboratory 12 hours.)

490. Independent Study (1-3) On demand Staff
Prerequisite: Consent of instructor. Students will carry out the research process under the supervision of a faculty member in the investigation of an appropriate interest.

499. Special Topics in Nursing (1-3) On demand Staff
Prerequisite: Consent of instructor. Course, group and/or independent studies of various parameters related to health care.

Physical Education

Physical Education—Men

Department Chairman: Dr. Robert A. Pestolesi.

Emeriti: Marcel J. DeLotto, Earl C. Kidd, Jack E. Montgomery.

Professors: Arnheim, Bartlett, Boring, Comer, Crowe, Klafs, McConnell, Mastropaolo, Patterson, Pestolesi, J. Rose, Sandefur, Schwartzkopf, Wuesthoff.

Associate Professors: D. Campbell, Jochums, Morgan, Reed, Schultz, Sinclair, Souter.

Assistant Professors: Bigelow, Gonsalves, Takei, Toohey, Wurzer.

Athletic Coaches: Allice, Bailey, Chandler, Gadd, Howard, Hunter, Jones, McBride, Olson, Pagett, Pease.

Credential Adviser: Mr. Tom Morgan.

Academic Advising Coordinators:
Men's Physical Education: Mr. Ken Bartlett.
Athletic Training and Corrective Therapy: Dr. Daniel Arnheim.
Adapted Physical Education: Dr. Walter Crowe.

Advisory Committee
Herman Clayborn, Franklin Junior High School
Ken Duddridge, Fountain Valley High School
Robert Keriger, Lakewood High School
Don Liebhart, Anaheim Union High School District
Edward Manzo, Cerritos High School
Ed Mitchell, Santa Fe High School
Larry Rossi, Long Beach Unified School District
Robert Seymour, Rogers Junior High School

Physical Education—Women

Department Chairperson: Dr. Dorothy Deatherage.

Emeriti: Corinne A. Crogen, Dorothy L. Ericson, C. Patricia Reid.

Professors: Deatherage, Fornia, L. Johnson, J. Lyon, Schaafsma, Stock.

Associate Professors: DuPont, Edmondson, Franklin, Griffith, Grimmett, M. Miller, Redmon.

Assistant Professors: Leach, Luther, Royal, M. Toohey.

Instructor: Glass.

Credential Adviser: Dr. LaVonne Stock.

Academic Advising Coordinator: Ms. Barbara Franklin.

The Departments of Physical Education for Men and Women offer 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 which satisfy the following requirements: (1) physical education major (coaching or teaching) leading to a teaching credential; (2) the bachelor of arts degree with a major or minor in physical education or a minor in elementary school physical education; (3) the master of arts degree in physical education.

The departments also assume 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. Opportunities are also provided for men and women students to participate in intramurals and intercollegiate competition.

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 in the Men's Physical Education Department will be required to show skill proficiency and knowledge in all areas offered in the CSULB lower division program prior to student teaching. Other proficiency examinations may be administered by the department to determine the student's progress and eligibility for student teaching.

A 2.8 grade point average in the major is a prerequisite to men's student teaching. In order to pass a proficiency examination the student must obtain a minimal score of 2.0 on a 1 to 5 point scale and in order to meet overall proficiency must average 3.5. A student may waive the taking of any lower division skills class by obtaining a 4.0 score on that specific skill proficiency examination. Further information regarding proficiency waiver or credit by examination is available in the department office.

Women physical education majors and minors who desire to waive any lower division skills course may do so through credit by examination. 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 about credit by examination is available in the department office.

Major in Physical Education for the Bachelor of Arts Degree

Men

Lower Division: Men's Physical Education 111, 144, 146, 242, 243, 244, and 246, Physical Education 241 and 290 and Biology 101, 102.

Upper Division: Men's Physical Education 315, 370, 410, 420, 433, 480. Physical Education 333, 335, 401, 405, and 437; one selected from Men's Physical Education 311, 312, 313; one selected from Men's Physical Education 484, 485, 486, 487.

Women

Lower Division: Women's Physical Education 121, 140, 150, 151, 160, 241, 243, 244, 261, 290; Biology 101, 102. One of the following: Women's Physical Education 250, 251.

Upper Division: Women's Physical Education 321, 333, 335, 401, 405, 421, 422, 437, 461; three selected from Women's Physical Education 340, 442, 443, 444; one selected from Women's Physical Education 350 or 351; and one selected from Women's Physical Education 360 or 460.

Minor in Physical Education—Elementary

A minimum of 20 units as follows: Physical Education 290, 373, 374, 378, 405, 470, 490; Women's Physical Education 321 or Men's Physical Education 488; Women's Physical Education 421 or Men's Physical Education 315.

Minor in Men's Physical Education—Coaching

A minimum of 20 units which must include Men's Physical Education 304, 420, 433, 480, 482; four-six units selected from the following: Men's Physical Education 311, 312, 313, 346, 484, 485, 486, 487; one-three units of elected courses in physical education. Designed for individuals interested in coaching.

Minor in Women's Physical Education—Secondary

21 units which must include Women's Physical Education 120, 321; Women's Physical Education 121 for lower division students or 421 for upper division students; two of the following: Women's Physical Education 140, 241, 243, 244; one from each of the five following categories: Women's Physical Education (1) 150, 151; (2) 160, 261; (3) 340, 442, 443, 444; (4) 350, 351; (5) 360, 460, 461; one unit of Women's Physical Education 497.

Master of Arts Degree in Physical Education

A program of study leading to the master of arts degree in physical education is offered. For detailed information concerning requirements see the *Graduate Bulletin*.

Adapted Physical Education and Special Education Program

The Men's Physical Education Department offers the student interested in working with the handicapped in special education a combination program of adapted physical education and selected special education courses. Students who are interested in this program must consult with the adviser, Dr. Daniel Arnheim.

Requirements for the Certificate in Adapted Physical Education and Special Education:

1. Bachelor's degree with a major in physical education.
2. Approval of adapted physical education by Dr. Daniel Arnheim.
3. Required courses: Physical Education 439, 440, 637 (optional); Educational Psychology 350, 435; one of the following: Educational Psychology 451 or 463.

Athletic Training Program

The Men's Physical Education Department offers men and women 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 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 101, 102, Men's Physical Education 130, Health Science 210, Psychology 100.
4. *Upper Division:* Men's Physical Education 333, 335, 437, 439, 480, 481, Home Economics 430, an advanced course in psychology, Men's Physical Education 433 or Psychology 370, advanced athletic training, Men's Physical Education 499 or 680.
5. 600 approved-supervised clinical hours.

Interested students should apply to the Men's Physical Education Department.

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., Boys' Club 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.
2. Consultation with the adviser, Mr. Edward Souter.
3. Required courses: Men's Physical Education 346 or Physical Education 438; Recreation 421, 425, 484*. In addition the student is required to complete at least two courses from each of the following three areas:
   a. Health, Physical Education, Recreation and Nutrition: Health Science 210, 327; Men's Physical Education 130, 248; Recreation 318 or 330; Home Economics 430.
   b. Communication and Behavioral Areas: Journalism 370, Speech Communication 434, Sociology 335 or Psychology 351, Sociology 336, 345, 419; Recreation 340, Educational Psychology 302.
   c. Business and Management: Quantitative Systems 130, Accounting 201, Management 421, Manpower Management 360, 361, 464.

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.
2. 400 clinical hours in therapeutic physical education approved by the Men's Physical Education Department.
3. Course requirements: 14 units which must include Physical Education 437, 438, six units in 439 and three units in Men's Physical Education 497.

Interested students should apply to the Men's Physical Education Department.

*Six to nine units are to be taken in field work at the community agency.

103, 104, 105, 106, 107. Physical Education Activity (1) Men, Women F, S Staff

Broad range of games, sports, aquatics and rhythmic activities are 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 General Education requirement.) Students enrolling in physical education assume the responsibility for satisfactory health status appropriate for class activity.

General education physical education activity courses for men and women may be offered at the beginning, intermediate and advanced levels. All classes are coeducational except where indicated. The areas offered are:

103. Individual and Dual Sports

Archery
Badminton
Bicycling
Bowling
Dry Land Skiing
Fencing
Golf
Gymnastics and Trampoline
Gymnastics (W)
Horsemanship
Ocean Fishing
Tennis
Track and Field (W)

104. Aquatics

Diving
Ocean Aquatics and Safety
Rowing
Sailing
Scuba
Senior Life Saving
Surfing
Swimming
Synchronized Swimming (W)
Water Skiing

105. Fitness and Conditioning

Backpacking
Fitness and Conditioning (W)
Handball
Individual Conditioning
Jogging
Karate
Mountain Climbing
Personal Defense for Women
Racquet Ball
Weight Training and Conditioning
Wrestling (M)
Yoga

106. Team Sports

Basketball (M)
Flag Football
Rugby
Soccer (M)
Softball
Track and Field
Volleyball
Beach Volleyball

107. Recreational Dance Activities

Contemporary American Folk Dance
Traditional European Movement Activities
Creative Movement
International Folk Dance
Social Dance
Square Dance
Recreational Dance Workshop

110. Intramural Activities (1) F, S Leach, Wuesthoff

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. Offered on Credit/No Credit basis only.

112. Women's Intercollegiate Sports (1) F, S Staff

Variety of team, individual and dual sports are offered. Enrollment is subject to the approval of the faculty member coaching the sport.

114. Coeducational Intercollegiate Sports (1) F, S Staff

Variety of individual and dual sports are offered. Enrollment is subject to the approval of the faculty member coaching the sport.

118. Intercollegiate Team Sports (1) F, S Staff

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. Athletes enrolled in P.E. 118 for credit who fail to qualify for the squad must withdraw from the course.

Coeducational Physical Education Professional Courses

Lower Division

130. 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.) Open to all students. (Lecture, activity.)

160. Fundamental Rhythms (2) F, S DuPont

Instruction and practice in fundamental rhythms, folk, square and social dance. Designed for men and women physical education majors and minors but open to all students.

241. Aquatics (2) F, S Edmondson, Jochums, Royal, Schultz

Instruction and practice in the fundamental skills basic to successful performance in aquatics. Open only to physical education majors and minors.

248. Advanced Swimming, Life Saving and Water Safety (2) F, S Jochums, Leach, Royal, Schultz

Prerequisite: Physical Education 104 senior lifesaving or current senior lifesaving certificate. Advanced swimming skills, lifesaving and water safety, including the opportunity to qualify for the American National Red Cross Water Safety Instructor's Certificate. Open to all students. (Lecture, activity.)

290. Basic Movement Education (3) F, S Edmondson, Johnson, Sandefur, Schwartzkopf, M. Toohey

Analysis of the components of movement with application to body management, games, gymnastics, dance, rhythmic activities and developmental skills commonly taught in the elementary school physical education program. Not open to students with credit in Physical Education 270 and 271 (activity).

Upper Division

333. Applied Principles of Kinesiology (3) F, S Bigelow, Crowe, Lyon, Mastropaolo

Prerequisite: Biology 101. Structure, function and mechanical principles relating to human motion, including analytical application. (Lecture, laboratory.)

335. Physiology of Exercise (3) F, S Klafs, Lyon, Mastropaolo

Prerequisite: Biology 102. Physiological effects of exercise on the human body. Significance of these effects for health and performance in physical activity. (Lecture, laboratory.)

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370. Elementary School Physical Education (2) F, S Johnson, Sandefur, Schwartzkopf
Prerequisite: Knowledge of basic 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. Not open to students with credit in Physical Education 470. (Lecture, activity.)

373. Fundamental Motor Skills for Children (2) S Johnson
Analysis and practice in fundamental skills, gymnastics, combatives, track and field and perceptual-motor activities in the elementary school physical education program. Not open to students with credit in P.E. 273.

374. Activity Analysis and Exercise Design (2) F Lyon
Application of principles of anatomy and physiology to the motor performance of children. (Lecture, laboratory.)

378. Dance for Children (2) F Griffith, Johnson, M. Toohey
Prerequisite: Proficiency in basic dance steps. Exploration of movement and accompaniment in the learning and creativity of dance as it relates to the elementary school child. Not open to students with credit in P.E. 278.

401. Measurement and Evaluation in Physical Education (2) F, S Deatherage, Franklin, Patterson, Sinclair
Principles and techniques of construction, organization, administration, interpretation and evaluation of measuring devices used in physical education. Not open to students with credit in Men's Physical Education 390 or Women's Physical Education 431.

405. Motor Learning (2) F, S Patterson, Rose, Schaafsma, Stock
Prerequisites: Biology 101, 102; Psychology 100. Principles of motor learning in the acquisition of movement skills. Not open to students with credit in Men's Physical Education 321 or Women's Physical Education 331.

437. Adapted Physical Education (2) F, S Arnheim, Crowe, Lyon, Souter
Prerequisite: Physical Education 333 or equivalent. Organization, administration and techniques utilized in the conduct of adapted physical education classes. (Lecture, laboratory.)

438. Physical Maintenance and Restoration (3) S Mastropaolo, Souter
Prerequisite: Physical Education 437 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
Prerequisite: 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) S Arnheim, Crowe, Lyon
Prerequisite: 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 and community. Includes laboratory, observation and field work experiences.

475. Movement Education Workshop in Elementary Physical Education (2) SS Johnson
Current research and trends in elementary physical education with techniques for implementation of innovative programs in the elementary school.

490. Developmental Physical Education for Children (2) F, S Johnson, M. Toohey
Prerequisite: Physical Education 290. Analysis and participation in bodily movement experiences with special emphasis placed upon the study of optimum physical development of children. Observation and practice in implementation of techniques with children.

Graduate Division

521. Administration of Physical Education (3)

522. Supervision in Physical Education (3)

523. Curriculum Development and Construction in Physical Education (3)

533. Scientific Bases for Physical Education (3)

538. Motor Dysfunction and Remedial Physical Education (3)

573. History of Sport and Physical Education (3)

574. Contemporary International Sport and Physical Education (3)

577. Sport in U.S. Culture (3)

590. Statistical Analysis and Measurement in Physical Education (3)

630. Seminar in Motor Learning (3)

633. Seminar in Sport Psychology (3)

637. Seminar in Adapted Physical Education (3)

671. Seminar in Current Trends and Issues in Sport and Physical Education (3)

674. Seminar in Philosophical Concepts of Sport and Physical Education (3)

680. Seminar in Management Theory of Athletic Injuries (3)

683. Seminar in Competitive Sports for Girls and Women (3)

685. Seminar in Athletics (3)

695. Seminar in Professional Literature (3)

696. Research Methods (3)

697. Directed Studies (1-3)

698. Thesis or Project (1-4)

699. Seminar in Selected Topics (3)

Physical Education—Men

Lower Division

111. Introduction to Men's Physical Education (2) F, S Bartlett, Sandefur, Souter, Wurzer
Orientation to physical education, including skill testing in areas basic to the professional program. Provides the major and minor the opportunity, through performance testing, to waive one or more of the following: Men's Physical Education 144, 146, 242, 243, 244, 246, and Physical Education 160. (Lecture, activity.)

144. Team Sports I: Softball, Baseball, Basketball and Volleyball (2) F, S Chandler, Gonsalves
Instruction and practice in the skill basic to successful performance in softball, baseball, basketball and volleyball. Open only to physical education majors and minors. (Laboratory.)

146. Individual-Dual Sports I (3) F, S Campbell, Reed, Wurzer
Instruction, practice and evaluation in the advanced skills in tennis, badminton, archery, golf and handball.

242. Gymnastics (2) F, S Bartlett, Takei
Beginning and intermediate instruction and practice in floor exercise, horizontal bar, side horse, parallel bars, rings, tumbling, vaulting and trampoline. (Laboratory.)

243. Wrestling (2) F, S Bigelow, Boring
Instruction and practice in takedowns, breakdowns, controls, pinholds, escapes, reversals, blocks and counters.

244. Team Sports II: Football, Speedball and Soccer (2) F, S Gadd, McBride, Pease
Instruction and practice in the fundamental skills basic to successful performance in football, speedball and soccer. Open to physical education majors and minors. (Laboratory.)

246. Individual-Dual Sports II (2) F, S Allice, 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.)

Upper Division

304. Scientific Foundations (4) F Boring, Klafs
Basic information involving human anatomy, kinesiology, exercise physiology, motor learning as related to physical education activities. Not open to physical education majors. Not open to students with credit in Men's Physical Education 204. (Lecture 3 hours, laboratory 3 hours.)

311. Analysis of Aquatics (2) F, S Jochums, Schultz
Prerequisite: Physical Education 241 or equivalent. Theory of coaching and teaching aquatics. (Lecture, laboratory.)

312. Analysis of Gymnastics (2) F, S Bartlett, Takei
Prerequisite: Men's Physical Education 242 or equivalent. Theory of coaching and teaching gymnastics. (Lecture, laboratory.)

313. Analysis of Wrestling (2) F, S Bigelow, Boring
Prerequisite: Men's Physical Education 243 or equivalent. Theory and practice of teaching wrestling. (Lecture, laboratory.)

315. History and Principles of Men's Physical Education (3) F, S Rose, Wurzer
History and principles which provide a basis for the development of a sound modern program.

317. Administration and Officiating of Intramural Sports (3) F, S 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. (Lecture 1 hour, activity 4 hours.)

318. Theory and Practice of Intercollegiate Major Sports (3) F, S Coaching Staff
Prerequisites: Two years of competition at the college level and the 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 Men's P.E. 118 concurrently. Those enrolled in Men's P.E. 318 who fail to qualify for the squad must withdraw from the course. Intercollegiate major sports include baseball, basketball, football, track and field.

319. Theory and Practice of Intercollegiate Minor Sports (2) F, S Coaching Staff
Prerequisites: Two years of competition at the college level and the approval of the coach of the minor 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 minor sport but may repeat the course in a different intercollegiate sport. Student may not be enrolled in Men's P.E. 118 concurrently. Those enrolled in Men's P.E. 319 who fail to qualify for the squad must withdraw from the course. Intercollegiate minor sports include cross country, crew, golf, gymnastics, soccer, swimming, tennis, volleyball, water polo and wrestling.

346. Conditioning in Physical Education and Athletics (2) F 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. (Lecture 1 hour, activity 2 hours.)

410. Organization and Conduct of Physical Education (3) F, S Sandefur, Souter, Wuesthoff, Wurzer
Prerequisite: Men's Physical Education 111. Organization and conduct of activities taught in secondary schools, including skills analysis and class deployment. Not open to students with credit in Men's Physical Education 310. (Lecture, laboratory including off-campus public school teaching experience.)

420. Sport and Society (2) F, S 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.

433. Behavioral Problems in Physical Education and Athletics (2) F, S Patterson, Sandefur, Toohey
Psychological and philosophical factors related to human performance in physical education and athletics.

480. Prevention and Care of Athletic Injuries (2) F, S Arnheim, Wurzer
Prerequisite: Physical Education 437. Study of methods and skills required in the prevention and care of injuries occurring to the athlete. (Lecture 1 hour, laboratory 3 hours.)

481. Field Work in Athletic Training (3) F, S Arnheim
Prerequisites: Men's Physical Education 480 and consent of instructor. Supervised experience in athletic training.

482. Field Work in Athletic Coaching (3) F, S 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 McBride, Pease, Reed
Prerequisite: Men's Physical Education 244 or equivalent. Theories of coaching, principles and organization of interscholastic tackle football.

485. Coaching Basketball (3) F, S Pagett
Prerequisite: Men's Physical Education 144 or equivalent. Theories of coaching, principles and organization of interscholastic basketball.

486. Coaching Cross Country, Track and Field (3) F, S Allice, Rose
Prerequisite: Men's Physical Education 246 or equivalent. Theories of coaching, principles and organization of interscholastic cross country, track and field.

487. Coaching Baseball (3) F, S Gonsalves
Prerequisite: Men's Physical Education 144 or equivalent. Theories of coaching, principles and organization of interscholastic baseball.

488. Administration of Secondary School Physical Education and Athletics (3) F, S Campbell, Toohey
Prerequisite: Senior standing. 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.

497. Independent Study (1-3) F, S Pestolesi
Prerequisites: Major or minor in physical education, junior or senior standing 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 be repeated for a maximum of six units.

499. Special Studies (1-3) F, S Staff
Group investigation of selected topics. Topics to be announced in the *Schedule of Classes*. May be repeated for credit to a maximum of 6 units.

Physical Education—Women

These courses open to physical education majors and minors only.

Lower Division

120. Fundamentals of Human Movement (2) S DuPont, Lyon
Designed to develop an understanding of basic mechanical principles as well as principles of physical conditioning as they apply to the improvement of the individual's motor skills and fitness level. (Lecture, laboratory.)

121. Introduction to Physical Education (2) F Edmondson, Franklin
Investigation of the profession of physical education with emphasis upon its significance and function in contemporary American culture. Includes a critical examination of professional leadership responsibilities and the concepts upon which they are based. Examination of some of the forces that seem to be shaping our society and how these forces are reflected in physical education. Review of recent research and current trends. Not open to transfer students who have completed a comparable course.

140. Tennis, Badminton (2) F, S Franklin, Leach, Luther, Miller, Toohey
Instruction and practice in the fundamental skills basic to successful performance in these activities.

150. Team Sports for Women—Basketball, Softball and Volleyball (2) F, S Grimmett, Schaafsma
Instruction and practice in the fundamental skills basic to successful performance in these activities.

151. Field Sports for Women (2) F, S Luther, Miller
Instruction and practice in the fundamental skills basic to successful performance in these activities.

243. Gymnastics, Track and Field (2) F, S Edmondson, Glass, Grimmett
Instruction and practice in the fundamental skills basic to successful performance in these activities.

244. Golf, Archery (2) F, S Leach
Instruction and practice in the fundamental skills basic to successful performance in these activities.

250. Sports Officiating for Women I (2) F Schaafsma
Designed for women physical education majors to develop proficiency in officiating volleyball, field sports (hockey, soccer, speedball and touchdown), tennis and badminton.

251. Sports Officiating for Women II (2) S Schaafsma
Designed for women physical education majors to develop proficiency in officiating basketball, softball and aquatic events.

261. Fundamentals of Creative Movement in Physical Education (2) F, S Griffith, McComb
Instruction 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 how to utilize movement for self-understanding and self-expression. Includes musical terminology and elemental music forms with specific references to creative movement in education.

Upper Division

321. Principles and Organization of Physical Education (2) F, S Deatherage, Luther, Toohey
Principles, aims and objectives of physical education and the relationship to organizational problems in the public school physical education program.

340. Advanced Analysis of Tennis and Badminton (2) F, S Grimmett, Luther, Miller
Prerequisite: Women's Physical Education 140 or equivalent. Comprehensive analysis of the principles of movement and the motor skills used in tennis and badminton. (Lecture, laboratory.)

350. Advanced Analysis of Team Sports (2) F, S Grimmett, Schaafsma
Prerequisite: Women's Physical Education 150 or equivalent. Comprehensive analysis of the principles of movement and the motor skills used in basketball, volleyball and softball. (Lecture, laboratory.)

351. Advanced Analysis of Field Sports (2) F, S Luther, Miller
Prerequisite: Women's Physical Education 151 or equivalent. Comprehensive analysis of the principles of movement and the motor skills used in hockey, speedball, soccer, speed-a-way and touchdown. (Lecture, laboratory.)

360. Advanced Analysis of Social-Recreational Dance (2) F, S DuPont
Prerequisite: Physical Education 160 or equivalent. Comprehensive analysis of the theory and practice of social, folk and square dance. Includes skills analysis, organization, conduct and evaluation of the social-recreational dance forms. (Lecture, laboratory.)

363. Instructional Materials in Physical Education (2) F Staff
Prerequisite: Major or minor in physical education or consent of instructor. Selection and utilization of specialized instructional materials in physical education. (Lecture, laboratory.)

421. Historical and Cultural Foundations of Physical Education (2) F, S Miller, Toohey
Basic survey of the history of physical education. Historical identification of the general purposes and functions of physical education within the more inclusive role of total education.

422. Philosophical Issues of Physical Education (2) F, S Royal, Schaafsma, Toohey
Prerequisites: Women's Physical Education 321, 421, senior standing. Discussion of current issues and concepts in physical education and their philosophical significance. Designed to help prospective teachers develop a philosophy for professional practice.

442. Advanced Analysis of Aquatics (2) F, S Edmondson, Royal
Prerequisite: Physical Education 241 or equivalent. Comprehensive analysis of the principles of movement and the motor skills used in aquatics. (Lecture, laboratory.)

443. Advanced Analysis of Gymnastics, Track and Field (2) F, S Edmondson, Glass, Grimmett
Prerequisite: Women's Physical Education 243 or equivalent. Comprehensive analysis of the principles of movement and the motor skills used in gymnastics and track and field. (Lecture, laboratory.)

444. Advanced Analysis of Golf and Archery (2) F Leach
Prerequisite: Women's Physical Education 244 or equivalent. Comprehensive analysis of the principles of movement and the motor skills used in golf and archery. (Lecture, laboratory.)

449. Advanced Analysis of Motor Performance (4) SS Staff
Comprehensive analysis of the principles of movement and motor skills used in individual and dual sports and team sports. Includes theory and practice in these activities.

460. International Folk Dance (2) S Griffith, Johnson
Prerequisite: Physical Education 160 or equivalent. Emphasis on enrichment of the knowledge of folk dances and background which shapes the origins, themes and styling; acquisition of skills in correct performance of the dances; augmentation of attitudes and appreciations of peoples to a vital folk art. (Lecture, laboratory.)

461. Advanced Analysis of Creative Movement in Physical Education (2) F, S Griffith, McComb
Prerequisite: Women's Physical Education 261 or equivalent. Comprehensive analysis of the principles of creative movement for physical education majors and minors who will be teaching in the public schools. Not open to students with credit in Dance 461.(Lecture, laboratory.)

465. Special Events in Physical Education (1) F Franklin
Principles and procedures in the conduct of special events commonly related to the physical education program. Special emphasis upon standards, organization and administration, and resource materials.

466. Workshop in Advanced Analysis of Volleyball (Women) (1) SS Schaafsma
Prerequisite: At least upper division standing. Comprehensive analysis of the principles of movement and motor skills used in volleyball, including theory and practice; development of offensive and defensive tactics and strategies.

467. Workshop in Advanced Analysis of Basketball (Women) (1) SS Schaafsma
Prerequisite: At least upper division standing. Comprehensive analysis of the principles of movement and motor skills used in basketball, including theory and practice; development of offensive and defensive tactics and strategies.

468. Workshop in Advanced Analysis of Tennis (Women) (1) SS Staff
Comprehensive analysis of the principles of movement and motor skills used in tennis, including theory and practice; development of singles and doubles tactics and strategies.

469. Workshop in Advanced Analysis of Badminton (Women) (1) SS Staff
Comprehensive analysis of the principles of movement and motor skills used in badminton, including theory and practice; development of singles and doubles tactics and strategies.

480. Outdoor Studies (3) F Luther, Miller
Contemporary study of man in the natural environment. Includes the physiological-psychological aspects of survival under varying environmental conditions, and ecological and aesthetic considerations of the outdoor experience.

497. Independent Study (1-3) F, S Staff
Prerequisites: Major or minor in physical education, junior or senior standing 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 be repeated for a maximum of six units.

499. Special Studies (1-3) S Staff
Prerequisites: Major or minor in physical education, junior or senior standing and consent of instructor. Group investigation of topics of current interest to women in physical education, selected for intensive development. Topics to be announced in the *Schedule of Classes*. May be repeated for a maximum of six units of credit with change of topic.

Physical Therapy

Department Chairman: Dr. Frank J. Bok.

Professors: Bok, D. D. Williams.

Medical Adviser: Douthett.

Associate Professor: Neilsen.

Assistant Professor: Morris.

Academic Advising Coordinators: 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. 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 Medical Association in collaboration with 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. 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 as follows: for currently enrolled undergraduates, during the semester they anticipate having earned 45-60 University credits, they are eligible for enrollment in the orientation course (P.T. 210); and for transfer students, at the time of registration if they have earned 45-60 University credits, they are eligible for the orientation course. For applications to be considered complete and valid applicants must meet the following stipulations:

1. Include all information requested and be truthful.
2. Include transcripts of all academic work attempted at high school and college.
3. Be physically well in order to carry out typical case loads expected of working therapists.

4. Be emotionally well in order to cope with the typical case loads of working therapists.
5. Be less than 35 years of age.
6. Demonstrate satisfactory potential for success in the program as disclosed by previous academic success in all college work attempted.
7. 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 101	3–4
Biology (general, not biological or life science), Biology 200	3
Chemistry (inorganic), Chemistry 200*	4
Chemistry (organic), Chemistry 200*	4
Chemistry (biochemistry), Chemistry 300	4
Physics (survey), Physics 104	4
Physiology (human), Biology 102	3–4
Psychology (general), Psychology 100	3
Psychology (abnormal), Psychology 370	3
Psychology (disability), Psychology 374	3

8. Demonstrate satisfactory success in the field by documented previous work experience in physical therapy or some other health related area.
9. Have no prior felony conviction in the State of California or other jurisdiction.

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. Successfully complete a competence inventory examination.

Bachelor of Science Degree in Physical Therapy (55 units)

Lower Division: Physical Therapy 210.

Upper Division: Biology 307, Chemistry 300, Physical Therapy 300, 320, 351, 353, 371, 374, 380, 430, 431, 440, 460, 472, 473, 485A,B; Psychology 370.

Lower Division

210. Orientation to Physical Therapy (2) F, S Carstrom, Hammer, Morris, Nielsen
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.)

*If organic and inorganic is taken at another institution a semester of each probably will be required; it is a combined course at this University.

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.)

351. Physical Therapy Procedures I (3) F, S Kerr, Morris
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 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 Douthett
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 factors during hospitalization promoting and impeding adjustment. Same course as Psychology 374.

380. Clinical Applications (1-4) F, S Morris, Nielsen, Staff
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 Nielsen
Prerequisites: Physical Therapy 320 and consent of instructor. Principles and techniques 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 Kerr, 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, Staff
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, S Williams
Prerequisites: Physical Therapy 300 and consent of instructor. Correlation of neuroanatomy with pathologies commonly treated by therapists. (Lecture 2 hours, laboratory 3 hours.)

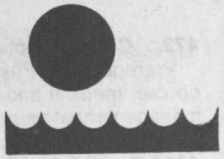
472. Clinical Lectures II (2) F, S Douthett
Prerequisites: Physical Therapy 371 and consent of instructor. Pathology, clinical course, medical and/or surgical implications, and the role of the physical therapist in the management of diseases of the endocrine and locomotor systems with specific reference to arthritis, amputation and muscular and congenital deformities.

473. Clinical Lectures III (2) F, S Douthett
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) F, S Nielsen, Staff
Prerequisite: Consent of department. Directed practices in physical therapy procedures in clinical affiliations of various types for 16 40-hour weeks. (Field work.)

490. Special Studies (1-3) F, S Bok, Williams
Prerequisite: Consent of department. Independent projects and/or study in any area of physical therapy. May be repeated to a maximum of six units.

Recreation and Leisure Studies



Department Chairman: Dr. Raymond Cook.

Professors: R. Cook, Gabrielsen, Gray, Jensen.

Associate Professor: Minar.

Assistant Professors: Andersen, Crayton, Kempton.

Academic Advising Coordinator: Dr. Raymond Cook.

Recreation leadership is concerned with the organization and management of 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, camping and outdoor education and voluntary youth and adult serving agencies. Educational programs with financial assistance and recognition by the YMCA and Boys Clubs of America are offered.

The curriculum encompasses selected courses in sociology, education and psychology to provide an understanding of people; courses in recreation leadership, art, music, physical education and theatre arts to achieve a broad background in program skills; and a variety of professional courses to develop an understanding of American leisure and the recreation profession.

Major in Recreation for the Bachelor of Arts Degree

Lower Division: Recreation 211, 241; Theatre Arts 122 or Music 290; Journalism 270.

Upper Division: Educational Psychology 301 or 302; Speech Communication 434; Recreation 312, 318 or 330, 340, 421, 425, 475, 484, 485.

Additional Courses: Each major student is required to complete a minimum of eight units in each of two of the following three groups: *Creative Arts:* Art 304 plus any course in creative arts or crafts offered by the Art or Industrial Education Departments. *Performing Arts:* Theatre Arts 358 plus any courses in Music, Theatre Arts, Speech Communication or Dance Departments. *Physical Recreation Activities:* Recreation 315 plus any courses in aquatics, individual, dual or team sports or physical fitness. Courses must have adviser's approval.

Minor In Recreation

A minimum of 20 units approved by departmental adviser which must include: Recreation 211, 217, 241, 312, 315, 425; one of the following: Recreation 484, 485, 486; Music 281 and Art 304 are recommended.

Master of Science Degree in Recreation Administration

A program of study leading to the master of science degree in recreation administration is offered. For detailed information concerning requirements see the *Graduate Bulletin*.

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.

217. Camp Counseling (3) F, S Kempton
Philosophy and program of the summer camp with special emphasis on the responsibilities of the camp counselor. Designed for students seeking summer camp employment.

241. Community Recreation (3) F, S Minar
Principles and organization of community recreation. Concepts of community structure. Survey of public and private agencies engaged in community-wide recreation.

Upper Division

312. Recreation Leadership (3) F, S Jensen, Kempton
Theory and application of leadership as it pertains to tax-supported and voluntary agencies. Designed to give theoretical and practical understanding of the individual's role through group dynamics.

315. Recreational Sports Supervision (3) F, S Cook, Crayton
Organization and supervision of recreational sports for community-wide participation. Not open to students with credit in Recreation 315A,B.

318. Outdoor Recreation Management (3) F, S Minar
Extensive review of the respective roles of federal, state and local government agencies in the acquisition, development and management of land and water resources for outdoor recreation programs and services.

330. Recreation in the Urban Community (3) F, S Cook, Crayton
Identification and analyses of recreation agencies in the urban environment with emphasis upon recreation program and leadership appropriate to the inner city.

340. Leisure in Contemporary Society (3) F, S Andersen, Crayton, Kempton
Prerequisite: Sociology 100. Intensive study of the new leisure and its impact on contemporary society.

421. Supervision in Recreation (3) F, S Jensen
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
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. History and Philosophy of Recreation (3) F, S Gabrielsen, Minar
History and philosophy of recreation and leisure and its influence upon contemporary American society.

484. Field Work in Private Recreation Agencies (3) F, S Crayton, Kempton
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 private and semi-public agency required.

485. Field Work in Public Recreation Agencies (3) F, S Cook, Minar
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 an approved agency required.

486. Field Work in Outdoor Recreation (3) F, S Minar
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.

490. Special Studies in Recreation (1-3) F, S Jensen, Minar
Prerequisite: Senior standing in recreation. Identification and critical analysis of current problems in selected areas of recreation. Topics to be announced in the *Schedule of Classes*. May be repeated for a maximum of six units of credit with change of topic.

491. Introduction to Therapeutic Recreation (3) F Crayton
Analysis of adapted recreational and leisure activities and their relationship to the 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 emphasis on management skills and techniques. Course content will be supplemented with field trips to provide on-site program and facility analysis.

493. Volunteer Management (3) F 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.

496. Research Methodology (3) F, S Staff
Research methodology in recreation. Must be taken prior to or concurrently with any 500 or 600 level course.

499. Independent Study (1-3) F, S Staff
Prerequisites: Consent of department and approval by department chairperson. Individual projects in areas of special interest. Independent study under the direct supervision of a faculty member.

Graduate Division

521. Recreation Administration (3)
525. Recreation Areas and Facilities (3)
571. Philosophy, Issues and Trends (3)
575. Problems in Recreation (3)
587. Field Work in Recreation Administration or Supervision (3)
590. Special Topics in Recreation (1-3)
595. Management Studies (3)
697. Directed Studies (1-3)
698. Thesis or Project (1-4)

Vocational Education

The bachelor of vocational education degree is designed for teachers who are teaching in a vocational education program and qualify for a Swan Bill evaluation through the State Board of Vocational Examiners in Sacramento. To qualify for the evaluation the requirements of the State Education Code, Section 23956 must be 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 clock hours in an approved trade extension class. Additional information concerning this degree may be obtained from the dean of the School of Applied Arts and Sciences.

Academic Advising Coordinator: Dr. C. Thomas Dean.

400. Concepts and Elements of Career Education (2) F Staff
Analysis of the elements and components of career education, including a study of the basic concepts, historical evolution, rationale and existing programs.

410. Curricular and Instructional Patterns (2) S Staff
Specific methods, techniques, curricular taxonomies and organization of vocational education delivery programs.

420. Evaluation of Vocational Education Programs (2) F Staff
Analysis of evaluation models usable for vocational education programs and systems, including the phases of needs assessment, programs planning, progress, implementation and outcome evaluation.

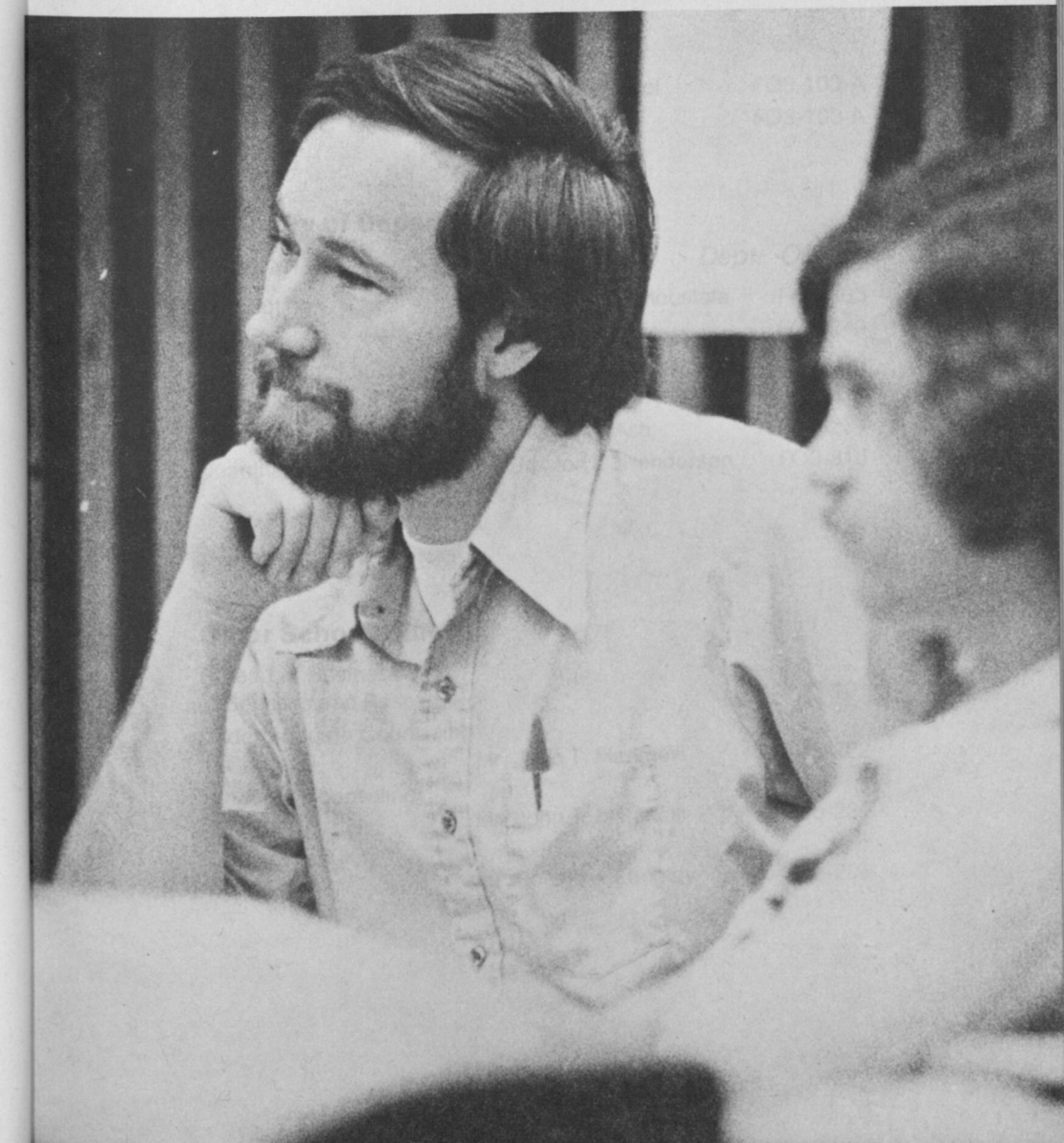
430. Program Development (2) S Staff
Analysis of the role of research and development in causing and shaping change in the delivery of occupational education. Project proposal preparation and assessment.

480. Internship in Vocational Education (1-4) F, S Stanger
Internship in community or school manpower development programs which involve instruction, administration and research within the career education spectrum.

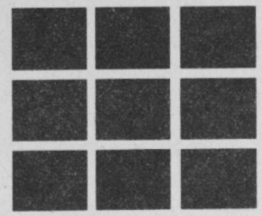
490. Independent Study in Career Education (1-3) On demand Staff
Individual research and study under the direction of a faculty member in areas not an integral part of any regular course. Written report is required. May be repeated to a maximum of three units.

499. Special Topics in Career Education (1-3) F, S Staff
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.

School of Business Administration



School of Business Administration



Administrative Officers

Dr. Dean O. Bowman	Dean of the School	FO3-103-A
Dr. Barbara C. George	Associate Dean	FO3-103-A

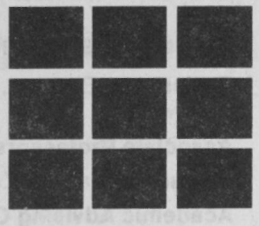
Directory of Departments

Department	*Chairmen*	*Dept. Offices*
Accounting	Dr. Mohamed E. Moustafa	FO3-305
Finance	Mr. Gene P. Morris	FO3-340
Management	Mr. Reinald C. Heise	FO3-314
Manpower Management	Dr. Carl E. Gregory	FO5-216
Marketing	Dr. William D. Ash	FO5-234
Quantitative Systems	Dr. Braxton C. Henderson	FO3-310

Other School Offices

Bureau of Business Services and Research		FO3-101
Undergraduate Counseling Center	Mr. John T. Martinelli	FO5-222
Graduate Counseling Center	Mr. John T. Martinelli	FO5-221
Electronic Data Processing	Mr. Ronald J. Langley	FO2-201

School of Business Administration



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.

Accounting Department

Professors: Cornwell, Gunter, Hickerson, McKinnon, Martinelli, Moustafa, Pickel, Stone, Suttle, Tillman, Williamson.

Associate Professors: Andrews, LaPage, A. Lewis, Maury, W. Wilson.

Assistant Professors: Golden, Hill, Hopewell.

Lecturers: Berkshire, Lashbrook, Mosler.

Academic Advising Coordinator: Department Chairman.

Finance Department

Professors: Beecher, Belt, Dilbeck, Farrell, George, Harlow, Kearney, Schultz, Teweles.

Associate Professors: Morris, Runyon, Saxer.

Lecturers: Krawiec, Levine, McCulloch, Parenzen, Pastrana.

Academic Advising Coordinator: Dr. Raymond R. Farrell.

Management Department

Emeritus: Glenn H. Stewart.

Professors: Hamburger, Heise, Laufer, Metzger, Stone.

Associate Professors: Rudkin, R. Smith, Stanton.

Assistant Professors: DeVoe, Ford, Flores, Robinson, Rudkin, Sartore.

Lecturers: Bates, Kiang, Lyle, Morse.

Academic Advising Coordinator: Mr. Gerald L. Ford.

Manpower Management Department

Professors: Gregory, Kirkpatrick, Simons, Teel.

Associate Professor: Quinn.

Assistant Professors: Berry, Lewis.

Lecturers: Traynor, Whitcomb.

Academic Advising Coordinator: Dr. Carl E. Gregory.

Marketing Department

Professors: Ash, Butcher, Cotta, Frye, Hall, Holmes, Palubinskas, Spiller, Stuteville, Wolff.

Associate Professor: Harding.

Assistant Professors: Ford, Klein.

Lecturer: Hazen.

Academic Advising Coordinator: Mr. William D. Ash.

Quantitative Systems

Emeritus: Harry G. Romig.

Professors: Burras, Chao, Henderson, D. Nelson, Stinson.

Associate Professors: Doud, Gilon, Keester, King, Wollmer.

Assistant Professors: Gillis, Payne, Pickard.

Lecturer: Sachdeva.

Academic Advising Coordinators:
Administrative Systems Option: Dr. Donovan Keester.
Quantitative Methods Option: Dr. Darshan Sachdeva.

The School of Business Administration offers both undergraduate and graduate courses of study, leading to the following degrees:

Bachelor of Science with options in

- Accounting
- Administrative Systems
- Finance
- Management
- Manpower Management
- Marketing
- Operations Management
- Quantitative Methods

Master of Business Administration

Master of Science (with options)

In addition to the degrees, certification programs are offered in various areas of business administration.

Specific requirements for the bachelor of science degree are located under the appropriate sections in this Bulletin. Information regarding the graduate programs will be found in the *Graduate 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 program is nationally accredited by the American Association of Collegiate Schools of Business.

Advisement

The School of Business Administration has an advisement office which operates on a part-time basis. It is recommended that students contact this office well in advance of registration day for advice on degree requirements.

Bachelor of Arts Degree in Business Administration

The bachelor of arts degree in business administration was discontinued effective August, 1971. Students enrolled in the program prior to August, 1971 will be allowed to complete the requirements for the degree.

Bachelor of Science Degree with a major in Business Administration

Degree Requirements

A minimum of 124 units, to include:

1. A minimum of 50 units in general education, to include:
   a. Meeting of General Education requirements of the University. Only one of the mathematics courses and the economics courses listed below may be utilized for meeting the General Education requirements. (Courses in the School of Business Administration may not be used for this General Education requirement.)

b. Philosophy 160 or 170; Mathematics 114, 115; Economics 200, 201.

2. A minimum of 50 units in business administration and related courses, to include:

Lower Division: Accounting 201, Quantitative Systems 210, or 410 (students intending to pursue graduate work in business must take 410), 240; Finance 222.

Upper Division: Accounting 310 (accounting majors must substitute 320); Economics 333; Finance 324, 362; Marketing 300; Management 300, 425; Manpower Management 360 or 361 (management majors must take 361).

3. One of the options listed below (15 units).

Business Administration Electives: 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 adviser for guidance in selection of electives.

Option in Accounting

The accounting curriculum offers training in the nature, theory and central problems of business accounting with the objective of 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 the student an understanding of the rationale and problems of accounting as an element of the organization's information system. The program provides a background both for the student interested in accounting as a career in business or government and for the person planning on entering the field of professional public accounting.

Accounting Option Requirements:

Accounting 300A-B, 400, 450, 470.

Option in Administrative Systems

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.

Option in Finance

The finance curriculum offers training in the administration, techniques and regulations 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 studied through offerings in investments including analysis of securities and commodities coupled with analysis of their price trends and turning points. Special emphasis is given to 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 emphasis 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 fields:

Financial Management: Finance 360, 464, 484, 490
Investment: Finance 464, 484, 486, 488
Insurance: Finance 402, 484; Economics 442
Real Estate: Finance 444, 446, 449

Option in Management

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 Manpower Management

The manpower 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 any 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. Manpower management majors may direct their emphasis toward either personnel management or labor relations.

Manpower Management Option Requirements:

1. Manpower Management 360 or 361 (whichever is not taken in the core), 362.
2. Three courses in one of the following fields:
   Personnel Management: Manpower Management 446, 463, 464, 465.
   Labor Relations: Manpower Management 440 and two courses chosen from Manpower Management 445, 464, 465.

Option in Marketing

The marketing curriculum is designed to enable the student to approach analytically the problem of providing consumer and industrial goods and services to a wide variety of markets by equipping him or her with modern problem-solving tools. The curriculum prepares the student for positions in sales, advertising, promotion, research, product management and marketing management. Further, the study of dynamic problems that affect all enterprises in communicating with their publics helps prepare the student for a career in commercial, governmental and service organizations that serve the public in ways other than producing tangible goods.

The integrated sequence of courses gives students broad training in the field of marketing. There is a common body of knowledge basic to understanding of the discipline. Beyond that the student may choose from among a group of elective courses to attain greater depth and sophistication in the field of salesmanship, advertising, transportation, industrial and international marketing.

Marketing Option Requirements:

Marketing 300.

Two courses from Group I (Marketing 401, 430, 442, 465, 480)

Two courses from Group II (Marketing 403, 470, 473*, 490)
(Students may substitute Marketing 495 and/or Marketing 497 for any of the Group I and Group II courses.)

Marketing 408

Minor in Marketing

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, 440, 441, 442, 465, 470, 473, 480, 490 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 Operations Management

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, 442

Option in Quantitative Methods

This option, administered within the Quantitative Systems Department, leads toward quantitatively-oriented careers in business, industrial, educational and governmental organizations. It provides a foundation for problem solving and decision making using the methods of statistics, operations research and computer technology in such positions as operations research analysts, administrators, data processing managers and systems analysts.

Emphasis is placed upon concepts and methods in the business environment, rather than upon mathematical development of theory.

Quantitative Methods Option Requirements:

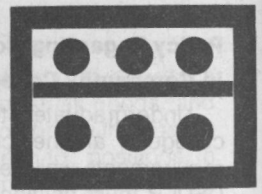
Quantitative Systems 410, 411, 442, 460 and either 413, 445 or 463.

*Marketing 473 previously numbered 373.

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 Council in advance for permission to enroll in specific courses. University policy must also be complied with. (See "Registration Procedures" and "Transfer of Undergraduate Credit" in this Bulletin.)

Accounting



Lower Division

200A-B. Elementary Accounting (3,3) On demand Golden, LaPage, Staff
Introduction to accounting theory and practice. Not open to students with credit in Accounting 201.

201. Elementary Financial Accounting (3) F, S Staff
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 Staff
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 Staff
Prerequisite: Accounting 200B or 201. Intermediate accounting theory including recording, valuation, and statement presentation of assets, liabilities, capital, earnings; funds statements; financial analysis.

310. Managerial Accounting (3) F, S Staff
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 Staff
Prerequisite: Accounting 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 Hickerson, McKinnon, Martinelli, Suttle, Williamson
Prerequisite: Accounting 300B or 501. Specialized problems in partnership and corporate accounting, agencies and branches, consolidated financial statements, organizations in financial distress, estate and trust accounting.

430. Quantitative Methods in Accounting and Auditing (3) S Stone
Prerequisites: Quantitative Systems 210 and any 300 level accounting course. 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 Stone
Prerequisites: Quantitative Systems 210 and either Accounting 200A and B or 201, or 500. 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, Maury, Pickel, Wilson
Prerequisite: One of the following: Accounting 300A, 310, 320, 501. 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 Maury
Prerequisite: Accounting 450. Federal and state income tax structure as related to partnerships, corporations, estates and trusts, and gift taxes, including laws, rulings and regulations.

465. International Accounting (3) F Moustafa
Prerequisite: Accounting 300B or 501 or consent of instructor. Examination of accounting theory and practice from an international perspective.

470. Auditing (3) F, S Gunter, Hickerson, Suttle, Staff
Prerequisites: Accounting 320 and 300B or 501. Problems of verification, valuation and presentation of financial information in reports covered by the opinion of an independent public accountant. Responsibilities of the public accountant and rules of professional conduct.

480. Accounting Systems and Data Processing (3) F, S Cornwell
Prerequisites: Accounting 320 and 300B or 501 or consent of instructor. Design and installation of accounting systems; unification of accounting systems and data processing within organizational structures.

497. Directed Studies (1-3) F, S Staff
Prerequisites: Consent of instructor and department chairperson, on Dean's List and 3.0 GPA or higher in accounting. Individual projects, study and research of advanced nature in accounting.

Graduate Division

500. Managerial and Financial Accounting (3)

501. Intermediate Accounting (3)

510. Advanced Cost Accounting, Budgeting and Control (3)

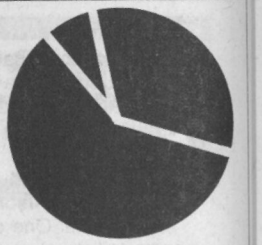
610. Seminar in Accounting Theory (3)

612. Advanced Tax Law and Accounting (3)

614. Seminar in Accounting Management and Controllership (3)

616. Seminar in Contemporary Accounting Problems (3)

Finance



Lower Division

222. Legal Aspects of Business Transactions (3) F, S Staff
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 Kearney, Schultz
Principles of risk-bearing and insurance; life and property-liability 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 Staff
Prerequisite: Finance 222. Laws governing agency, partnerships and corporations and property.

326. Advanced Business Law (3) F, S Farrell, McCulloch, Pastrana
Prerequisite: Finance 222 or 324 or equivalent. Legal environment of business. Analysis of state and federal laws governing business and constitutional limitations on such regulations. Special emphasis on current problems.

342. Real Estate Principles and Practices (3) F, S Staff
Major forces affecting real property values and the real estate industry including production of real estate resources, marketing and financing of land based on valuation 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. Capital Markets (3) F, S Morris
Capital formation, rates, markets and institutions. Flow of fund analysis, intermediation, interest rate structures, risks and liquidity. Financial management of institutions and regulation of markets.

362. Business Finance (3) F, S Staff
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.

380. Survey of Investment Media (3) F, S Staff
Investment of personal funds under varying economic conditions. Survey of alternative media including savings accounts, securities, mutual funds, commodities, life insurance and pension funds, real estate and foreign exchange. Not open to majors in business administration.

382. Investment Principles (3) F, S Belt, Harlow, Runyon, Schierholz
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.

402. Commercial Insurance (3) S Staff
Prerequisite: Finance 302. Risk management in the firm. Analysis of all lines of property and liability insurance practices. Business life insurance, pensions and employee benefit plans. Carrier markets and functions for commercial coverages.

434. Decision Analysis in Accounting and Finance (3) F, S Staff
Prerequisites: Quantitative Systems 210 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 Staff
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 Staff
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.

449. Real Estate Finance and Investments (3) F, S Staff
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.

464. Financial Management (3) F, S Beecher, Dilbeck, Runyon
Prerequisites: Finance 362 and Accounting 300B or 310 or 311. Application of financial 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 Belt, Teweles
Prerequisite: Finance 362. Examination of purposes and functions of over-the-counter markets and organized exchanges for securities marketing. Operations of New York Stock Exchange and Chicago Board of Trade are reviewed. Fundamental 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 Harlow, Teweles
Prerequisite: Finance 362 or Marketing 300 or consent of instructor. History and nature of commodity futures trading. Operation of commodity futures exchanges. Fundamental and technical devices used by successful commodity traders.

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490. International Finance (3) F, S Dagan, 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 Staff
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 Staff
Prerequisites: Consent of instructor and department chairperson, on Dean's List and 3.0 GPA or higher in finance. Individual projects, study and research of advanced nature in finance.

Graduate Division

500. Legal Environment of Business (3)

501. Finance Survey (3)

530. Problems in Insurance and Risk Management (3)

531. Estate Planning (3)

532. Problems in Real Estate (3)

533. Capital Budgeting (3)

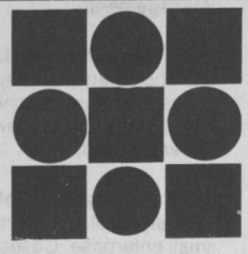
630. Seminar in Financial Forecasting (3)

631. Seminar in Business Finance (3)

632. Seminar in Comparative Financial Management (3)

633. Seminar in Investments (3)

Management



Upper Division

300. Operations Management (3) F, S Kiang, Laufer, Robinson, Rudkin, Stanton, Stone
Recommended preparation: Quantitative Systems 210. Analysis of theory and philosophy of operations management and of the principles of planning and control of the operations system. Emphasis on available tools for decision making.

302. Operations Technology (3) F, S DeVoe
Recommended preparation: Management 300 or 500. Analysis of the principles of industrial processes and of the basic materials in the operations system; philosophies of basic operations and service in the operations 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. Not open to business majors.

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 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. Production-Inventory (3) F, S Lyle, Robinson
Recommended preparation: Management 300 or 500. Analysis of principles and philosophies of production-inventory systems and optimal decision making.

405. International and Comparative Management (3) F, S 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 Control and Reliability (3) F, S Hamburger, Rudkin
Recommended preparation: Management 300 or 500 and Quantitative Systems 210 or equivalent. Analysis of the principles of quality control for purchased and manufactured products and statistical methods for managerial decision making in quality and reliability.

407. Materials and Logistics Management (3) F, S Lyle
Recommended preparation: Management 300 or 500. Analysis of principles and philosophies of purchasing and procurement in industry and government to result in efficient materials management decision making. Not open to students with credit in Marketing 460.

421. Management of Small Business Enterprises (3) F, S Flores, Heise, Stone
Analysis 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.

425. Administrative Organization Systems and Business Policy (3) F, S Staff
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. Yugoslav Management Systems (3) On demand Staff
The Yugoslav Self-Management System in a large firm, in a small firm, and the privately owned small firm. Study of structure, function and responsibility under conditions of extreme industrial democracy. Terminology taught in Serbo-Croatian.

451. Yugoslav Management Communication Systems (3) On demand Staff
Recommended prerequisite: Management 450. Continuation of Management 450 with renewed emphasis on managerial style and skill under condition of industrial democracy. Terminology will be Serbo-Croatian so as not to lose meaning in translation.

495. Selected Topics (1-3) F, S Staff
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 Staff
Prerequisites: Consent of instructor and department chairperson, on Dean's List and 3.0 GPA or higher in management. Individual projects, study and research of advanced nature in management.

Graduate Division

500. Business Policies, Operations and Organization (3)

541. Industrial Logistics (3)

542. Enterprise Structure and Operation (3)

543. International Business Policy (3)

544. Management and Operations Management Decision Making (3)

640A,B. Seminar in Operations Management (3,3)

641. Seminar in Advanced Production-Inventory Systems (3)

642. Seminar in Operations Management Simulation (3)

643. Seminar in Sociotechnical Systems (3)

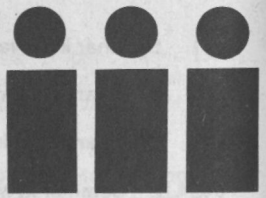
645A,B. Seminar in Management Policy and Problems (3,3)

646A,B. Seminar in Organization Analysis (3,3)

647A,B. Seminar in Management Planning and Control Systems (3,3)

695. Special Topics in Management (3)

Manpower Management



Upper Division

360. Behavioral Sciences and Management (3) F, S Lewis, Simons, Teel, Traynor, Whitcomb, Staff
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. Manpower Management (3) F, S Gregory, Lewis, Quinn, Traynor, Staff
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 Berry, Simons
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 Berry, Traynor
Prerequisite: Manpower Management 361 or 461G. 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, Traynor
Prerequisite: Manpower Management 361 or 461G. 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 Whitcomb, Staff
Prerequisite: Manpower Management 361 or 461G. 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 Kirkpatrick, Simons, Whitcomb
Prerequisite: Manpower 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: Manpower 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.

495. Selected Topics (1-3) F, S Staff
Prerequisites: Consent of instructor and grade point of 3.0 in manpower management. Topics of current interest in manpower 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 chairperson, on Dean's List and 3.0 GPA or higher in manpower management. Individual projects, study and research of advanced nature in manpower management.

Graduate Division

500. Manpower Management (3)

552. Comparative Labor Relations Systems (3)

554. Labor Arbitration (3)

556. Management of Minority Groups (3)

650. Seminar in Labor Relations (3)

652. Seminar in Personnel Management (3)

655. Seminar in Employee Motivation (3)

695. Special Topics in Manpower Management (3)

Marketing

Upper Division

300. Marketing (3) F, S Staff
Prerequisite: 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, Staff
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 behavioral sciences to salesmanship; evaluation of selling techniques and practices including recruiting, training and compensation.

330. Mass Marketing Communications: Advertising (3) F, S Harding, 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. Traffic Management (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. The Enterprise in International Markets (3) F Hazen, Spiller
Principles of foreign trade as they affect an enterprise operating internationally. The extent and expansion of world markets, the flows of trade and U.S. participation therein. Opportunities and problems arising from participation in international operations. Cases, problems, term project and class presentation required.

401. Marketing Systems and Environment (3) F, S Ash, Butcher, Ford, 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 Frye, Harding, Klein, Spiller
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.

408. Marketing Management (3) F, S Staff
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.

440. Organization and Administration of Distributive Education (3) On demand Butcher
Prerequisites: Economics 200, 201; Marketing 300. Philosophy and objectives of distributive education, Federal and State relationships. Includes administration, development, leadership and supervision of the program.

441. Curriculum Development in Distributive Education (3) On demand Butcher
Prerequisites: Economics 200, 201; Marketing 300. Curriculum construction and content organization of distributive education. Includes evaluation, preparation and selection of instructive materials, application of instructional techniques and analysis of distributive curriculum in high school, community college and adult programs.

442. Air Transportation (3) S Harding
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) S Staff
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, Palubinskas, Spiller
Prerequisite: Marketing 300. Fundamentals of marketing 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 210 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 Hazen, Palubinskas
Prerequisite: Marketing 300 or consent of instructor. Individual enterprise in varying

cultural, economic and political environments; international market opportunities; types of foreign operations; international marketing management; financing; legal situation; comparison with domestic marketing. Problems, cases and term projects with classroom presentation are required.

490. Consumer Behavior (3) F, S Butcher, Ford, Klein, Stuteville
Prerequisite: Marketing 300 or consent of instructor. Nature of parameters of consumer behavior. Socio-psychological factors including personality, small group theory, demographic variables, social class and culture.

495. Selected Topics (1-3) F, S Staff
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 Staff
Prerequisites: Consent of instructor and department chairperson, 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

500. Marketing Concepts (3)

660. Seminar in Marketing Theory (3)

661. Seminar in Marketing Policies (3)

662. Seminar in Marketing Environment and Institutions (3)

663. Seminar in Advertising Policies (3)

664. Seminar in Transportation (3)

665. Seminar in Marketing Research (3)

666. Seminar in International Marketing (3)

667A. Seminar in International Business—Africa and the Near East (3)

667B. Seminar in International Business—Asia and Oceania (3)

667C. Seminar in International Business—Europe (3)

667D. Seminar in International Business—Latin America (3)

668. Seminar in Consumer Behavior (3)

Quantitative Systems

Lower Division

130. Current Concepts of American Business (3) F, S King, Nelson
Development of an understanding of contemporary business and related societal issues and the roles of producer and consumer in the American business enterprise system. Includes introduction to major business functions.

202. Business Communication (3) F, S Gillis
Survey of written and oral communication media utilized in business; emphasis on developing skill in business informational writing.

210. Business Statistics (3) F, S Staff
Prerequisite: Mathematics 114. Probability, measures of central tendency and dispersion, hypothesis testing and estimation, simple regression and correlation and applications of the probability distributions.

240. Business Data Processing (3) F, S Staff
Basic data processing and computer programming fundamentals designed to provide an understanding of the function of computers in business and government operations.

Upper Division

302. Advanced 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 management 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 Research Reports (3) F, S Doud, Pickard
Formal business report writing involving problem solving and decision making in the administrative management process; the scientific method of inquiry as it relates to business report writing.

410. Probability and Decisions (3) F, S Chao, Gilon, Payne, Sachdeva
Prerequisites: Mathematics 114, 115 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, Sachdeva, 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. Statistical Methods in Business (3) F, S Chao, Payne, Sachdeva
Prerequisite: Quantitative Systems 210 or 410. Application of concepts and methodology of statistics to practical problems from business and other applied disciplines. Topics include analysis of variance, prediction analysis and forecasting, survey and sampling design, elements of design of experiments and non-parametric methods.

432. Administrative Information Systems (3) F, S Burras, Keester
Prerequisite: Quantitative Systems 331 or consent of instructor. Major types of information systems; study of collecting, processing, storage and retrieval of business information; study of data origination, representation and transmission.

433. Financial Aspects of Business Equipment (3) F, S Keester
Prerequisite: Quantitative Systems 331 or consent of instructor. Economic feasibility, procurement, financing and effective utilization of data originating, processing and communicating equipment used in the administrative management process.

442. Business Computer Methods (3) F, S Gilon, Payne, Wollmer
Prerequisite: Quantitative Systems 240 or consent of instructor. Data bank and file creation, maintenance and information retrieval using an existing information management language. Problem set-up for use of existing pre-programed packages for business and socio-economic model fitting, forecasting, linear programming and CPM/PERT.

445. Computer Application for Business Problems (3) F, S Gilon, Wollmer
Prerequisites: Quantitative Systems 240, 410. Extensive use of existing software in the solution of business and management decision problems. Areas covered are linear programming, model fitting, regression, analysis of variance, simultaneous equation models and a financial model with stochastic elements.

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
Prerequisite: Quantitative Systems 460. Continuation of Quantitative Systems 460 with extensions to probabilistic models such as inventory, queueing theory, Markov chains and simulation.

495. Selected Topics (1-3) F, S Staff
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 Staff
Prerequisites: Consent of instructor and department chairperson, on Dean's List and a GPA of 3.0 or higher in administrative systems. Individual projects, research or study in quantitative systems.

Graduate Division

500. Probability and Statistical Decision Theory (3)

520. Problems in Business Communication (3)

521. Advanced Administrative Management (3)

522. Issues and Trends in Administrative Management (3)

523. Survey of Research in Administrative Management (3)

570. Economic Theory of Decision (3)

571. Theory of Information (3)

572. Stochastic Processes (3)

573. Advanced Statistical Inference (3)

574. Topics in Multivariate Analysis (3)

575. Experimental Design (3)

620. Case Studies in Administrative Management (3)

670. Seminar in Operations Research and Statistics (3)

Business Administration

Thesis and Research

Graduate Division

500. Research Methodology (3)

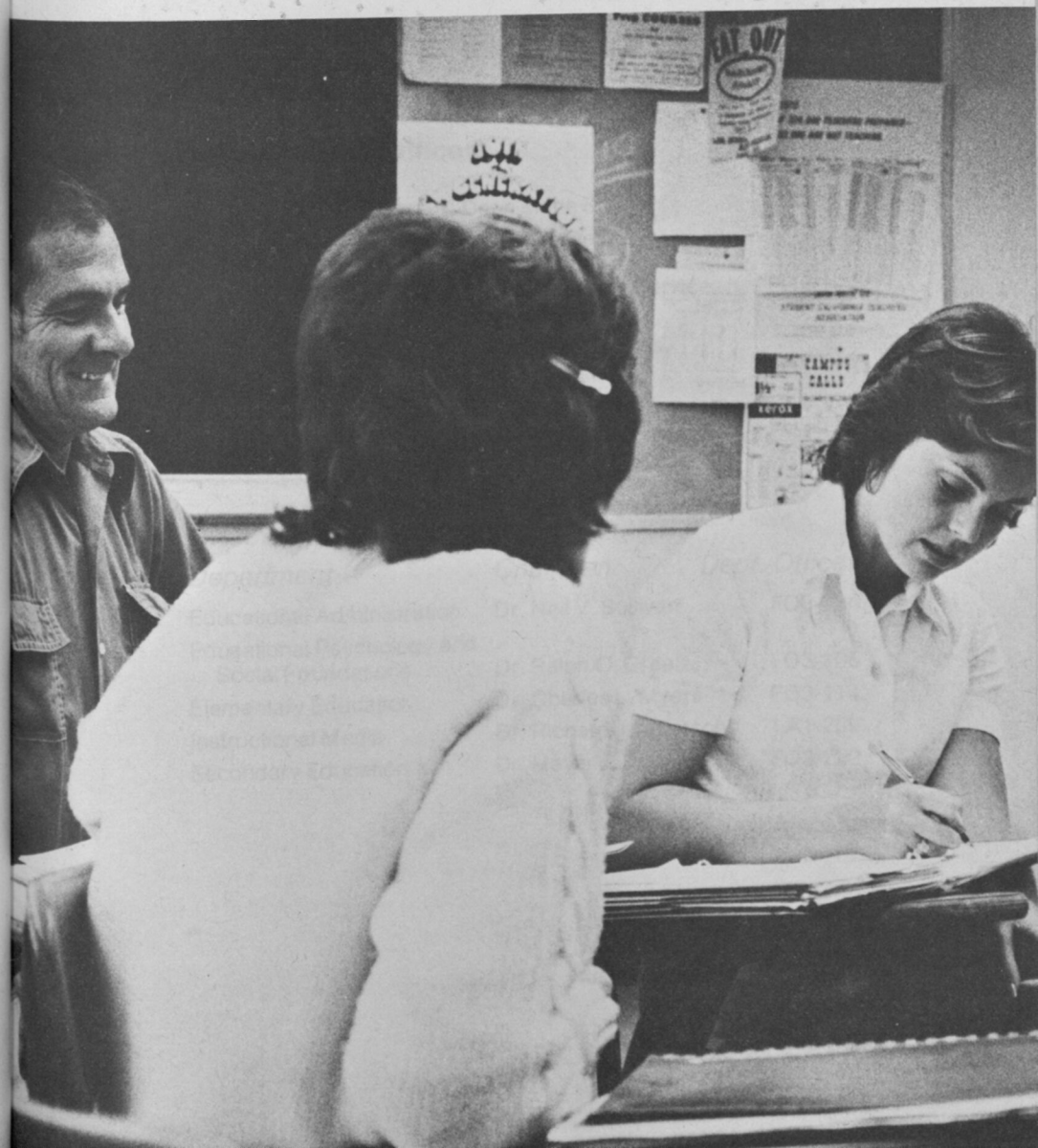
695. Selected Topics (3)

697. Directed Studies (1-3)

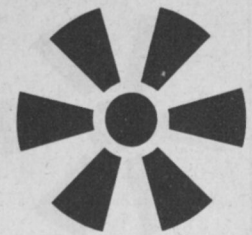
698. Thesis (2-4)

699. Integrated Analysis (3)

School of Education



School of Education



Administrative Officers

Dr. John A. Nelson, Jr.	Dean of the School	FO3-120
Dr. Louis J. Stacker, Jr.	Associate Dean of Professional Programs and Services	FO3-109
	Coordinator of Graduate Studies and Research	FO3-118
Mr. John A. McAnlis	Director of Support Services and Planning	FO3-115

Directory of Departments

Department	*Chairmen*	*Dept. Offices*
Educational Administration	Dr. Neil V. Sullivan	FO3-224
Educational Psychology and Social Foundations	Dr. Ralph C. Graetz	FO3-105
Elementary Education	Dr. Charles L. Myers	FO3-114
Instructional Media	Dr. Richard J. Johnson	LA1-209
Secondary Education	Dr. Mayer J. Franklin	FO3-222

Other School Offices

Credentials Office	Dr. Louis J. Stacker, Jr.	FO3-109
Educational Psychology Clinic	Dr. Thomas Kampwirth	LA5-106
Elementary Education Field Experiences	Dr. Sam Pollach	FO3-110
Graduate Office		FO3-118
University Coordinator of Secondary Education Office	Dr. Wilbur J. Farr	FO3-217
Library Education Office	Miss Barbara A. Ward	LA1-209
Pupil Personnel Office	Dr. Vincente Noble	FO2-205
Special Education Office	Mr. Alfred I. Schmidt	FO3-200

School of Education

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 and other educational agencies of the state.

Descriptions of credential and graduate degree programs appear in the University *Graduate Bulletin*, the *School of Education Graduate Handbook* and the *Credential Advisement Handbook*.

Professional Programs in Education

Multiple Subjects Credential Program (for elementary teachers)

Single Subjects Credential Program (for secondary teachers)

Bilingual/Cross Cultural Specialist Credential

Early Childhood Specialist Credential

Reading Specialist Credential

Special Education Specialist Credential (Learning Handicapped, Severely Handicapped, Gifted) (Communication Handicapped offered through the Communicative Disorders Department)

Administrative Services Credential

Library Services Credential

Pupil Personnel Services Credential

Instructional Media Certificate Program

Career Guidance Certificate Program

Specific program information for all credentials is available through departmental offices or the School of Education, FO3-109.

Master of Arts Degree in Education

Master of Science Degree in Counseling

Master of Science Degree in Special Education

Programs of study leading to the master of arts degree in education, master of science degree in counseling and master of science degree in special education are offered. For detailed information concerning requirements see the *Graduate Bulletin* and the *Handbook for Graduate Studies in Education*.

Scholarships

Two scholarships are available through the Department of Educational Psychology and Social Foundations and one is available for students in the Department of Educational Administration. The William H. McCreary Scholarship for graduate students in pupil personnel 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. The Clyde S. Johnson Scholarship is awarded annually to graduate students in student personnel in honor of a former professor. The Wayne W. Young Memorial Thesis Award is presented annually to a graduate completing an outstanding thesis for a master's degree in educational administration. The amount of the awards and the number of recipients is determined annually by faculty committees. Further information may be obtained from the department offices.

Educational Administration

Department Chairman: Dr. Neil V. Sullivan.

Emeriti: J. Wesley Bratton, George Dotson, Henry R. Sehmann, Willard H. Van Dyke.

Professors: Graham, Jackman, Nelson, Sullivan, S. Williams.

Academic Advising Coordinator: Dr. Neil V. Sullivan.

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.

An internship program is available for those individuals requiring an immediate partial fulfillment credential. Practicing school administrators, supervisors and other part-time administrative personnel who wish to acquaint themselves with the latest developments in the field are invited to inquire at the department office about specific offerings.

Educational Administration Advisory Council

The advisory council for the approved program in educational administration is composed of school board members, interested citizens, teachers, students, community leaders, supervisors and administrators from all levels in the geographic areas served by the University. These persons confer with and assist 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. Donald Ashley, Director of Personnel, Long Beach Unified School District

Mr. Joseph E. Baird, Principal, ABC Unified School District

Mr. William Barnes, Dean of Counseling, Long Beach City College

Mrs. Mary Coo, Principal, Ocean View School District

Mr. Richard Flores, Director of Certificated Personnel, Santa Ana Unified School District

Dr. Rex Fortune, Program Manager, Adult Education, State Dept. of Education

Mr. Robert B. Hunt, Principal, Fullerton School District

Mr. Leon Jordan, Principal, Los Angeles Unified School District

Mrs. R. A. "Molly" McGee, Board Member, Anaheim Union High School District

Mrs. Macy Mend, Director, Administrative Intern Program, Los Angeles County Education Center

Mr. Peter Parra, Administrative Intern, Los Angeles County Education Center

Mr. Harland Polsky, Principal, Compton Unified School District

Mr. William A. Thompson, Assistant Superintendent, Anaheim City School District

Mrs. Elizabeth Wallace, Board Member, Long Beach Unified School District

Graduate Division

541. Principles and Leadership in School Administration (3)

544. Legal and Financial Aspects of Schools (3)

571. Organization and Administration of Community Colleges and Adult Education (3)

573. Instructional Aspects of Administration in Community Colleges and Adult Education (3)

580. Introduction to Field Experience in Administration (3)

590. Special Topics in Educational Administration (1-3)

647. Seminar in School Personnel Administration and Leadership Behavior (3)

648. Seminar in Systems Approach and Educational Management (3)

649. Seminar in Urban Educational Administration (3)

651. Seminar in Administration and Supervision of Elementary Schools (3)

661. Seminar in Administration and Supervision of Secondary Schools (3)

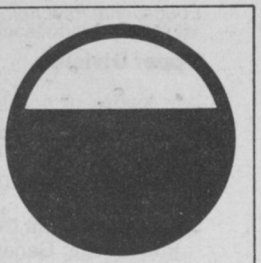
680. Advanced Field Experience in Administration (3-6)

683. Field Work in Administration and Supervision of the Community College (3-6)

697. Directed Studies (1-3)

698. Thesis or Project (2-6)

Educational Psychology and Social Foundations



Department Chairman: Dr. Ralph C. Graetz.

Emeritus: Aileen Poole Koehler.

Professors: Blackman, Crossan, B. Davis, Demos, Fogg, Forst, Glasser, Graetz, Hamel, Orpet, Owen, R. Peck, Revie, Shaver, Stacker, Swan, Tilden, Yee.

Associate Professors: Blaylock, Britton, Cash, N. Gibbs, Harris, Hunter, Kokaska, Lazar, Michael, Schmidt, Sundstrom.

Assistant Professors: Denham, Kampwirth, Noble.

Academic Advising Coordinator: Dr. Virgil A. Revie.

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, child welfare and attendance, school psychometry and psychology) and a master of science in counseling degree. It also offers courses to meet the requirements of the Special Education Specialist Credential and a master's degree in the education of children with learning disabilities.

Lower Division

190. Current Topics in Education (3) F, S Staff
Orientation to and exploration of topics relevant to the college student as a learner-scholar and decision-maker within the changing campus, community and societal milieu. Lectures, discussion, field study. May be repeated in combination of Educational Psychology 190-390 for a maximum of six units. Topics will be announced in the *Schedule of Classes*. Not open to students with credit in Education 190.

199. Orientation to Change in Education (3) F, S Staff
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 Staff
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 Staff
Prerequisite: General psychology. Physical, social, emotional and mental development during adolescence; learning processes.

305. Educational Psychology (3) F, S Staff
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 Staff
Psychological factors important for the development of mental health; implications for teaching, group work and interpersonal relationships in home and school; behavior disorders and educational practice.

350. Survey of Education of Exceptional Individuals (3) F, S Britton, Kokaska
Prerequisite: Admission to the Special Education Specialist Credential Program or consent of instructor. 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
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. Not open to students with credit in Educational Psychology 360A or 360B.

371. Education and Culture in Western Europe (1-6) On demand Hamel, Staff
Prerequisite: Consent of instructor. Guided study-tour of selected West European cultures in the nature of field-work for interdisciplinary studies of education and history, philosophy, the social sciences and the arts. Not open to students with credit in Educational Foundations 371.

372. Education and Culture in the British Isles (3-6) On demand Hamel
Guided study-tour in the British Isles delineating our conceptual and instructional heritage from the cultural and educational traditions of England, Scotland, Wales and Ireland in past and present. Not open to students with credit in Educational Foundations 372.

375. Education and Culture in East Africa (3-6) On demand Hamel, Nelson
Guided study-tour in East Africa, highlighting its cultural and educational history, the biological and man-made environment, the ethos of the people, other features of Third-World Africa. Not open to students with credit in Educational Foundations 375.

390. Current Topics in Education (3) F, S Staff
Orientation to and exploration of topics relevant to the college student as a learner-scholar and decision-maker within the changing campus, community and societal milieu. Lectures, discussion, field study. May be repeated in combination of Educational Psychology 190-390 for a maximum of six units. Topics will be announced in the *Schedule of Classes*. Not open to students with credit in Education 390.

399. Orientation to Change in Education (3) F, S Staff
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 399.

405. Behavior Modification in the Classroom (3) F, S Harris
Prerequisites: Ed. Psych. 305 or a course in basic learning theory, consent of instructor. Application of the principles of social learning and operant conditioning in the classroom. Includes training in observation in a school setting, collection of observational data, building and implementation of intervention programs.

419. Educational Statistics (3) F, S Staff
Prerequisite: Elementary algebra. Introduction to statistical methods with application 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 Staff
Prerequisite: Ed. Psych. 319. 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. Not open to students with credit in Educational Psychology 320 or Educational Research 320.

430. Principles of Counseling and Guidance (3) F, S Staff
Prerequisite: Ed. Psych. 305. Purposes, functions, legal aspects and administration of the pupil personnel program.

435. Counseling and Guidance for the Handicapped (3) F, S Staff
Prerequisites: Ed. Psych. 305, 350, 430 and permission of Office of Special Education. Educational and vocational needs of handicapped children; methods of counseling; rehabilitation and guidance programs.

451. Learning Disabilities in Exceptional Individuals (3) F, S Lazar, Sundstrom
Prerequisite: Advancement to Learning Handicapped Area in the Special Education Specialist Credential Program or consent of instructor. Assessment of learning disabilities in learning 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 learning handicapped. Field work.

455. Teaching Gifted Individuals (3) F Lazar
Prerequisite: Advancement to the Gifted Area in the Special Education Specialist 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 findings 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.

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 Handicapped Individuals (3) S Britton, Schmidt
Prerequisite: Advancement to the Severely Handicapped Area in the Special 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 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.

466. Career Planning for the Exceptional Individual (3) S Britton, Kokaska
Prerequisite: Ed. Psych. 350 or consent of instructor. Review of the career, leisure time, adult, family and community needs and problems of the exceptional individual. Emphasis will be upon the cooperative role of the school, public and private community agencies and organizations including parent groups and associations comprised of exceptional (handicapped, disabled or gifted) individuals.

469. Workshop in Exceptionality (6) SS Staff
Prerequisite: Experience with disabled or exceptional individuals or consent of instructor. The workshop is designed to enable the student to explore and experience new, innovative and creative approaches to the delivery of service to disabled or exceptional individuals. Individual field work is required.

470. History and Philosophy of Education (3) F, S Staff
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 Staff
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, S Staff
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.

486A. Advanced Field Studies with Communication Handicapped (5,5)

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)

490. Special Topics in Educational Psychology (1-3) On demand Staff
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 Staff
Prerequisite: Consent of instructor and department chairperson. Independent study undertaken under the supervision of a faculty member.

Graduate Division

500. Educational Research (3)

519. Advanced Educational Statistics (3)

520. Educational Measurement and Research (3)

525. Individual Pupil Diagnosis (3)

526. Educational Diagnosis (3)

527. Clinical Practice in Educational Remediation (3)

530. Career Development and Decision Theory (3)

531. Counseling Information Resources and Technology (3)

532. Group Counseling (3)

533. Counseling Theory (3)

536. Guidance Practices in the Elementary School (3)

537. Guidance Practices in the Secondary School (3)

538. Student Personnel Work in Higher Education (3)

539. Counseling the College Student (3)

541. General Case Practice and Field Work (3)

542. Specialized Case Practice and Field Work (2-4)

542A. Field Work—School Counseling (2-4)

542B. Field Work—Child Welfare and Attendance (2-4)

542C. Field Work—School Psychology (2-4)

545. Pupil Personnel Practicum (3)

546A-B. Practicum in Special Education (3,3)

548. The College Student and College Environment (3)

549. Management of Student Personnel Services (3)

550. Cultural Perspectives of Special Education (3)

554A,B. Principles of Educational Remediation (3,3)

555. Education and Counseling in a Cross-Cultural Setting (3)

560. Management of Emotionally Handicapped Child (3)

575. Philosophy of Education (3)

582. Comparative Education (3)

585. Group Processes in Education (3)

590. Special Problems in Educational Psychology (1-3)

604. Seminar in Human Development (3)

605. Seminar in School Learning (3)

615. Seminar in Home-School-Community Relations (3)

631. Seminar in Elementary School Counseling (3)

632. Seminar in Secondary School Counseling (3)

639. Seminar in Organization of Pupil Personnel Services (3)

650. Seminar in Special Education (3)

677. Seminar in Curriculum Development (3)

680. Seminar in Current Problems and Issues in Education (3)

696. Research Methods (3)

697. Directed Studies (1-3)

698. Thesis or Project (2-6)

Elementary Education abc

Department Chairman: Dr. Charles L. Myers.

Emeriti: Marion R. Johnston, Oliver P. Johnstone, Leo T. Phearman, Olive L. Thompson.

Professors: Burk, Gensley, Jones, Myers, Nagle, L. Perry, Pollach, Rolfe, Roster.

Associate Professors: Ames, Bernstein-Tarrow, Cahn, Jamgochian, Koppenhaver, M. Krause, Newcastle, Rodney, Tabor, Woodfin.

Assistant Professors: Beck, Gold, Haglund, Martinez.

Academic Advising Coordinator: Dr. Charles L. Myers.

The Department of Elementary Education provides course work for: (a) elementary school credential candidates, (b) candidates pursuing the M.A. in education with a concentration in elementary education, (c) individuals seeking the Reading Specialist Credential, (d) candidates for Early Childhood Specialist Credential, and (e) Bilingual/Cross-Cultural Credential Program.

Upper Division

310. The Elementary School in American Society (3) F, S Staff
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 Burk
Prerequisite: Mathematics 110 or graduate standing. Geometric configurations, interpretation of their relationships and applications. Includes geometrical construction, use of instruments and simple applications of logic in geometry. Not open to students with credit in El. Ed. 461.

362. Unifying Concepts in the Mathematics of Number (2) F, S Burk
Prerequisite: Mathematics 110 or graduate standing. Unification and integration of mathematical ideas and procedures. Includes the development of sets, number and number systems, mathematical conditions and mathematical relations. Not open to students with credit in El. Ed. 462.

420. Teaching Strategies for Young Children (3) F, S Bernstein-Tarrow, Jones, Rodney
Strategies for providing learning environments conducive to creative expression, problem solving and developmental activities appropriate for children four 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, Gensley, 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.

422. Curriculum for Young Children (3) F, S Bernstein-Tarrow, Gensley, 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 Children's Center Programs (3) F, S Gensley
Qualifications of personnel for staffing schools for young children from two to five years of age; duties of staff; financial procedures; annual budgets and records; maintenance; equipment; individual records; attendance records; discipline; health and nutrition; supervision of educational programs.

424. Assessment of Competency in Early Childhood Education (3) F, S Bernstein-Tarrow, Gensley, 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.

430. Teaching in Cross-Cultural Settings (3) F, S Pollach, Rodney
Planning learning environments and teaching strategies for children of varied socio-cultural backgrounds with emphasis on problem solving, self concept and language development.

440. Language Arts in the Elementary School (3) F, S Staff
Prerequisites: El. Ed. 310, Ed. Psych. 301, 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.

441. Teaching Foreign Languages in the Elementary Schools (3) F, S Staff
Methods of teaching foreign languages and of supervising curricular foreign language activities in the elementary schools.

450. Reading in the Elementary School (3) F, S Staff
Prerequisites: El. Ed. 310, Ed. Psych. 301, 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.

451. Measurement and Evaluation in Reading (3) F, S Koppenhaver
Prerequisites: Ed. Psych. 419 and El. 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. Newspaper in the Classroom (1-3) F, SS Staff
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. 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 Staff
Prerequisites: El. Ed. 310, Ed. Psych. 301, Mathematics 110 or equivalent. Admission to elementary teacher education. Concepts and principles of modern school mathematics. Includes methods and media that contribute to its meaning and understanding.

463. Implications of New Mathematics for the Elementary School Mathematics Curriculum (2) SS Burk
Prerequisite: El.Ed.460. Improvement of mathematics programs and teaching procedures with emphasis on understanding. Includes recent curriculum proposals, field experiences, and demonstrations of accepted teaching procedures.

470. Social Studies in the Elementary School (3) F, S Staff
Prerequisites: El. Ed. 310, Ed. Psych. 301, 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.

480. Observation and Participation in the Elementary School (2) F, S Staff
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 college adviser. Enrollment by application only.

481. Student Teaching in the Elementary Grades (2-12) F, S Staff
Prerequisites: Ed. Psych. 301, El. Ed. 310, 440, 450, 460, 470, 480 and official admission by the Teacher Education Committee. El. Ed. 460 may be taken concurrently with El. Ed. 481 if Mathematics 110 or equivalent has been completed. Five mornings per week in a public school elementary classroom, with assignments in two grade levels and a weekly seminar with a college adviser. Enrollment is by application only.

490. Special Topics in Elementary Education (1-3) F, S Staff
Prerequisite: Consent of instructor. Topics of current interest in elementary 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 Staff
Prerequisites: Consent of instructor and department chairperson. Independent study undertaken under the supervision of a faculty member.

Graduate Division

520. Individualization of Learning Experiences in Early Childhood (3)

522. Parent Education and Involvement in Early Childhood Settings (3)

523. Supervision of Early Childhood Programs (3)

540. Problems in Teaching the Language Arts in the Elementary School (3)

550. Problems of Teaching Reading (3)

551. Diagnosis and Correction of Reading Disabilities (3)

554A. Competency in Teaching Reading (2)

554B. Competency in Teaching Reading (1)

556. The Reading Process (3)

558. Linguistics for Reading Teachers (3)

560. Problems of Teaching Arithmetic in the Elementary School (2)

570. Problems of Teaching the Social Studies in the Elementary School (2)

580A,B. Elementary Teaching Internship (3,3)

581A,B. Internship Problems (3,3)

590. Special Problems in Elementary Education (1-3)

621. Seminar in Early Childhood Education (3)

653A,B. Seminar and Clinical Laboratory in Reading Disabilities (3,3)

655. Seminar in Reading Curriculum and Supervision (3)

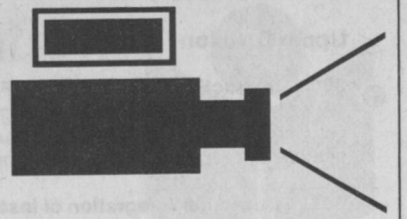
660. Advanced Field Work in Reading (3)

681. Advanced Field Experiences in Early Childhood (4)

697. Directed Studies (1-3)

698. Thesis or Project (2-6)

Instructional Media



Department Chairman: Dr. Richard J. Johnson.

Professors: Brent, Cockrum, Gramlich, R. Johnson, Timmons, Vaughan.

Associate Professors: McLaughlin, Ward.

Academic Advising Coordinator: Dr. Richard J. Johnson.

The Department of Instructional Media offers courses meeting the requirements for the M.A. in education with an emphasis in instructional media, the Library Services Credential for the State of California and a specialist certificate program in instructional and library media.

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 changes in the existing program and assist the department in future planning.

Pat Del Mar, Film Librarian, Long Beach Public Library
Jack Erickson, Training Director, Sears, Roebuck and Co.
Douglas Fee, Student, California State University, Long Beach
Frank B. George, Director of Instructional Resources, Long Beach Unified School District
Helen Gores, Personnel Development Assistant, General Telephone Co.
Blake Gould, Student, California State University, Long Beach
Richard J. Johnson, Chairman, Instructional Media Dept., California State University, Long Beach
Joanne Kato, Student, California State University, Long Beach
Barrett Moore, Student, 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.
Jean Pointer, Coordinator of Instructional Media, Norwalk-La Mirada School District
Betty Ann Rauch, Training Coordinator, Buffums' Department Store, Long Beach
Aldo S. Romiti, Coordinator of Physical Medicine and Rehabilitation Services, Veterans Administration Hospital

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Upper Division

300. Instructional Media (3) F, S Staff
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 Staff
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 Staff
Prerequisite: Consent of instructor and department chairperson. Independent study undertaken under the supervision of a faculty member.

Graduate Division

500. Instructional Systems (3)

501. Theoretical Models Applied to Media (3)

510. Preparation of Photographic Media (2)

511. Preparation of Audio Media (2)

512. Instructional Film Production (3)

513. Multi-Media Message Design (3)

520. Administration of Learning Resource Centers (2)

540. Interactive Computer Systems (3)

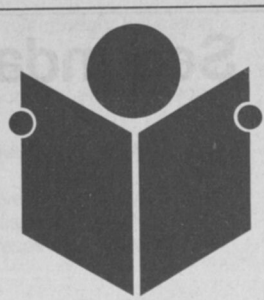
590. Special Problems in Instructional Media (1-3)

630. Seminar in Educational Technology (2)

697. Directed Studies (1-3)

698. Thesis or Project (2-6)

Library Education



Credential Adviser: Miss Barbara Ward.

Lower Division

100. Introduction to Library Use (1) F Brent
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
Prerequisite: Junior standing. Survey of children's books, past and present. Critical analysis and selection of books for elementary school libraries, based on interests and needs of children and curriculum demands. Use of books with children and reading guidance activities of school librarians.

412. Adolescent Books for School Libraries (3) S Ward
Prerequisite: Lib. Ed. 411. Survey of adolescent books appropriate for the school library, including classics, popular novel, junior novel, paperback books and non-fiction. Analysis of the criteria upon which selection is based; use of selection tools, techniques of reading guidance for the secondary school librarian. Extensive reading and analysis.

420. Basic Reference (3) F Ward
Philosophy of reference service and study of criteria for evaluation of reference and bibliographic resources; study of selected standard reference works and bibliographic cooperation and control.

491. Special Topics in School Librarianship (1-3) F, S Staff
Prerequisite: Consent of instructor or library education coordinator. Topics of current interest in school librarianship selected for intensive development. May be taken for a maximum of six units.

Graduate Division

510. Selection of Materials (3)

540. Classification and Cataloging (3)

550. School Library Media Center Administration (3)

581. Field Work in the School Library Media Center (4)

Secondary Education

Department Chairman: Dr. Mayer J. Franklin.

Emeriti: Roy C. Anderson, William E. Fisher, Frank F. Gorow, Kephas A. Kinsman, Daniel C. McNaughton, Wallace H. Moore.

Professor: Popham.

Associate Professors: Franklin, Graham, Jersin, Marrs, Morris, Sugimoto.

Assistant Professor: Hidalgo.

Academic Advising Coordinator: Dr. Mayer J. Franklin.

The Department of Secondary Education provides courses for students working toward single-subject credentials under the Ryan Act, programs for community college teachers, adult education, advanced courses in curriculum, instruction and evaluation for experienced teachers, a program leading to the master of arts in education with an emphasis in secondary education or with specialization in reading and, in cooperation with the Elementary Education Department, the Reading Specialist Credential Program and the Bilingual/Cross-Cultural Credential.

Upper Division

310. Secondary Schools and Students (3) F, S Staff
Prerequisite: Education Single Subject 300. Secondary school pupil development, effects of culture, sociological factors affecting schools, curriculum, controversies about education, problems of secondary education. Cross-cultural field experience is included.

421. Learning and Instruction (3) F, S Staff
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.

422. Field Based Social and Psychological Foundations (School Center Program) (6) F, S Blaylock, Marrs, Morris
Prerequisite: Education Single Subject 300. Students will observe and participate in cross-cultural high school campus centers and engage in classroom discussions of adolescent development, behavior and learning and historical, philosophical and political perspectives of the high school.

428. Individualized Instruction in Secondary Schools (3) F, S Marrs
Prerequisite: Sec. Ed. 421 or equivalent. Rationale of individualization. Analysis of current models, requirements for course and total school individualization. Media and other instructional variables. Development of an individualized unit or course segment.

430. Teaching in a Cross-Cultural Setting (3) F, S Franklin
Teaching youth of varied ethnic backgrounds. Discussion, practicum and field work. (Lecture-discussion 2 hours, practicum 3 hours arranged.)

435 Bilingual/Cross-Cultural Schooling in United States Society (3) F, S Hidalgo
Prerequisite: Education Single Subject 300. Students will observe and participate in a school with a cross-cultural curriculum and engage in classroom discussions of linguistic, cultural, international and sociological perspectives of the schools, especially local schools which are linguistically and ethnically pluralistic.

436. Schooling, Instruction, Evaluation and the Learner in a Cross-Cultural Setting (3) F, S Hidalgo
Prerequisite: Education Single Subject 300. Field-based orientation to the evolution and philosophies of United States schooling, curricular innovations, learning theory, types, functions, purpose and use of evaluation, theoretical, cultural, socio-economic and practical aspects of adolescent development. Includes cross-cultural field experiences.

442. Foreign Language Workshop (4) F, S Staff
Materials and procedures for teaching foreign languages. Includes literary and cultural movements as related to foreign language teaching, basic philology and general linguistics. Elective credit only. (Lecture, laboratory.)

457. Developmental Reading in the Secondary School (3) F, S Graham
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 the Classroom (1-3) F, SS Staff
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. Not open to students with credit in Education 490 (where the topic was Newspaper in the Classroom).

459. Methods of Teaching Reading in the Secondary Schools (3) F, S Graham
Methods 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.

460. The Junior High School (3) On demand Staff
Philosophy, curriculum and teaching procedures in the junior high school. Includes characteristics of junior high school students.

480. Observation and Participation in the Secondary School (2) F, S Franklin
With consent of instructor may be taken concurrently with Sec. Ed. 421; scheduled assignments to observe and participate in learning activities in secondary schools; students make written reports and hold discussion and conferences with instructor.

481A-B. Student Teaching in Secondary Schools (3,3) F, S Staff
Open only to students accepted by the Secondary Teacher Education Committee. Application for student teaching shall be made by October 1 for the spring semester or by March 1 for the fall semester. Students will teach two classes per day for a semester under the guidance of a supervising teacher. In addition, the student will have a daily observation period throughout the semester.

The student will register for three units of 481A for the first assignment of student teaching and for three units of 481B for the second assignment (as approved by the Secondary Teacher Education Committee). The two assignments will be in different subjects, different phases of a subject or in different schools. With the approval of the Committee, the two assignments may be taken in two semesters. This course is intended for students working on credentials under the Fisher Act.

490. Special Topics in Secondary Education (1-3) F, S Staff
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 Staff
Prerequisites: Consent of instructor and department chairperson. Independent study undertaken under the supervision of a faculty member.

Graduate Division

510. The Community College (2)

520. Advanced Studies in Secondary School Instruction (3)

523. Instruction and Evaluation in College Classes (3)

540. Advanced Studies in Secondary School Curriculum (3)

554A. Competency in Teaching Reading (2)

554B. Competency in Teaching Reading (1)

555. Reading Diagnosis and Remediation (3)

557. Problems in Secondary Reading Instruction (3)

560. Evaluation of Curriculum and Instruction (3)

581A,B,C. Directed Field Experiences in Bilingual/Cross-Cultural Education (3,3,3)

583A-B. Student Teaching in the Community College (3,3)

590. Special Problems in Secondary Education (1-3)

657. Clinical Practices in Secondary Reading (3)

659. Seminar in Secondary Reading (3)

660. Advanced Field Work in Reading (3)

697. Directed Studies (1-3)

698. Thesis or Project (1-6)

Education—Single Subject

The designation Education Single Subject is used for those courses which are a part of the professional requirements in the Ryan Single Subject Credential Program (primarily for junior and senior high school teachers). See Secondary Education Department for additional required professional course work.

Education Single Subject 300 is required as the first course in the professional education sequence for the single subject credential under the Ryan Act and should be taken in the junior year. In addition to the hour shown, the student must have a three-hour block of time available one day a week—Monday through Thursday—between the hours of 8 a.m. to 1 p.m. for observation and participation in the public schools in the student's single subject credential major.

Education Single Subject 450 series courses with letter suffixes are required for majors in the respective subject areas who are seeking the secondary credential.

Education Single Subject 470A-B, Final Directed Field Experience, is required for all students seeking the Ryan Single Subject Credential. Each student must sign up for 10 units which indicates full-day full-semester student teaching.

300A-W. Preliminary Directed Field Experiences (2) F, S Staff
Prerequisite: Advanced sophomore or junior standing. Directed field experiences as a teacher aide. Evaluation of students for admission to the single subject credential. *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.)

300A. Preliminary Directed Field Experiences (Art) (2) F, S Staff

300C. Preliminary Directed Field Experiences (Life and Physical Sciences) (2) F, S Staff

300F. Preliminary Directed Field Experiences (Foreign Languages—French, German, Spanish) (2) F, S Staff

300G. Preliminary Directed Field Experiences (English, Journalism, Speech and Theatre Arts) (2) F, S Staff

300H. Preliminary Directed Field Experiences (Home Economics) (2) F, S Staff

300I. Preliminary Directed Field Experiences (Industrial Education) (2) F, S Staff

300M. Preliminary Directed Field Experiences (Mathematics) (2) F, S Staff

300N. Preliminary Directed Field Experiences (Music) (2) F, S Staff

300P. Preliminary Directed Field Experiences (Men's Physical Education) (2) F, S Staff

300S. Preliminary Directed Field Experiences (Social Sciences, including Anthropology, Economics, Geography, History, Political Science, Psychology, Sociology) (2) F, S Staff

300W. Preliminary Directed Field Experiences (Women's Physical Education) (2) F, S Staff

450A. Curriculum and Methods of Art Education (3) F, S Purcell, Schultz
Objectives, curriculum, materials and procedures in art education. Includes a survey of 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. Not open to students with credit in Secondary Education 450A.

450C. Curriculum and Methods in Teaching Natural Science (3) F, S Staff
Prerequisite: Education Single Subject 300C. Objectives, curriculum, materials and procedures used in teaching science. Includes observation in public school classrooms. Must be completed before student teaching. Not open to students with credit in Secondary Education 455N. (Lecture 2 hours, laboratory 3 hours.)

450F. Methods of Teaching Foreign Languages (3) F, S Contreras, Kendall
Procedures for teaching French, German, Latin or Spanish. Includes supervision of co-curricular foreign language activities. Should be taken the semester prior to student teaching. Several sections in different languages may be offered. See *Schedule of Classes* for appropriate section. Not open to students with credit in Secondary Education 450F.

450G. Teaching English (3) F, S Borowiec, Day, Sullivan
Methods of teaching literature and composition in junior high school, senior high school and community college, including planned observations in public school classrooms as well as instruction in techniques of teaching. Must be completed before student teaching. Not open to students with credit in Secondary Education 450G.

450H. Methods and Curriculum in Home Economics Education (3) F, S Moore
Prerequisites: Secondary Education 421, consent of instructor. Objectives, curriculum, methods and materials used in teaching home economics. Observation and participation in home economics classes in the secondary schools. Must be taken by majors and minors the semester prior to student teaching. Not open to students with credit in Secondary Education 450H.

450I. Curriculum and Methods in Industrial Education (3) F Farr
Objectives, curriculum, materials and procedures in teaching industrial education with emphasis on current practices and the relationship of industrial education to the total school program. Includes observation in the secondary school. Must be taken the semester prior to student teaching. Not open to students with credit in Secondary Education 450I.

450M. Curriculum and Methods in Teaching Mathematics (3) F, S Dorn
Prerequisite: Education Single Subject 300M. Objectives, curriculum, methods and materials used in teaching mathematics. Must be taken prior to the final directed field experience. Not open to students with credit in Secondary Education 455M.

450N. Teaching and Observation of Music (3) F, S Winslow
Prerequisite: 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. Observation assignments of from 42 to 48 hours per semester are required. Should be taken the semester prior to student teaching. Not open to students with credit in Secondary Education 450M.

450P. Curriculum and Methods in Teaching Physical Education (Men) (3) F, S Morgan
Limited to students qualified to enroll in student teaching the following semester. Two hours lecture in philosophy, curriculum, legal aspects and public relations as they pertain to physical education. Students are assigned to physical education activity courses as cadet teachers. Students must meet minimum activity skill performance standards. Not open to students with credit in Secondary Education 455P.

450S. Curriculum and Methods of Teaching Social Science (3) F, S Higgins
Prerequisite: Education Single Subject 300S. Objectives, methods and materials for teaching social science in junior and senior high school. Should be taken prior to student teaching, except for experienced teachers. Not open to students with credit in Secondary Education 455S.

450W. Curriculum and Methods of Teaching Physical Education (Women) (3) F, S Stock
Prerequisite: Major or minor in women's physical education. Curriculum and procedures in teaching physical education. Must be taken by majors and minors the semester prior to student teaching. Not open to students with credit in Secondary Education 456P.

470A-B. Final Directed Field Experience (5,5) F, S Farr
Prerequisite: Candidates must be accepted by the Secondary Teacher Education Committee for student teaching for the single subject credential. Students will register in 470A for the first assignment and 470B for the second assignment. The assignments will be in different subjects, different phases of a subject or in different schools. Assignments are for a full day for an entire semester. The students will teach three regular classes daily for which they have complete responsibility as district policy will allow. For the other two periods the students will engage in faculty enterprises and consult with school and college supervisors.

School of Engineering

School of Engineering

Administrative Officers

Dr. Richard C. Potter	Dean of the School	Engr. 1-104
Mr. Willard H. Reed	Associate Dean	Engr. 1-108

Directory of Departments

Department	*Chairmen*	*Dept. Offices*
Civil Engineering	Dr. Chunduri V. Chelapati	Engr. 2-101
Electrical Engineering	Dr. Gene H. Hostetter	Engr. 1-406
Mechanical Engineering	Dr. Hillar Unt	Engr. 1-207

Other School Offices

Biomedical Engineering	Dr. Morton D. Schwartz	E1-503
Chemical Engineering	Dr. John M. Lenoir	E2-109
Computer Engineering	Dr. John H. Lane	E1-502
Engineering Research Center	Dr. Nathan Tiner	E1-104
Engineering Materials	Dr. C. Barclay Gilpin	E1-309
Industrial-Management Engineering	Dr. James L. Dyer	E1-204A
Ocean Engineering	Capt. L. Boyd Kendall	E1-404A

School of Engineering

Emeriti: Cecil V. Armour, Ernest G. Brind, Robert B. Goldman, Rodney C. Lewis, William D. McIlvaine, Harold T. Miller, Herluf P. Nielsen, Robert E. Vivian, Harold W. Washburn.

The School of Engineering offers four-year curricula leading to bachelor of science degrees in engineering and chemical engineering which provide broad education and training for entry to the engineering profession and for continuing academic work towards an advanced degree. The master of science degree is offered in civil, electrical and mechanical engineering, and an interdisciplinary degree, the master of science degree in engineering, is offered also. Information on these graduate degrees is obtainable in the *Graduate Bulletin*. The undergraduate program includes a minimum of 132 semester units and provides opportunity in the upper division to specialize in the areas of chemical, civil, computer, electrical, industrial-management, materials, mechanical and ocean engineering. The options in civil, electrical, materials and mechanical engineering are accredited by the Engineers' Council for Professional Development. Many of the engineering courses are available in evening or Saturday classes primarily for those employed in local industries.

The high school student planning to enter engineering is advised to pursue a strong program in pre-engineering subjects. These subjects should include biology, physics, chemistry, advanced algebra, trigonometry and one year of mechanical drawing in addition to the general requirements for admission to the University. A deficiency in any of the above areas will result in an extension of the time required to complete the program in engineering.

The curriculum is also designed to accommodate students transferring with pre-engineering training from other colleges such as the community colleges and liberal arts colleges. Transfer students should note and follow where possible, the appropriate curriculum as outlined in later sections.

Engineering Advisory and Development Council

The Engineering Advisory and Development Council for the School of Engineering consists of outstanding engineers and executives from industry and government in the area served by California State University, Long Beach. Its function is to afford a liaison between the University and industry and to keep the administration and faculty informed of modern engineering practices. This will insure that the curricula are kept abreast of the times. It will also advise on placement opportunities before and after graduation. The council membership 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. Hobart A. Cress, Division Chief,
Long Beach Ocean Engineering Facility, Battelle Memorial Institute

Mr. Warren H. Eckert, Attorney at Law,
Taubman, Simpson, Young and Eckert

Dr. N. I. Hall, Vice President
Scientific Education, Hughes Aircraft Company

Mr. Millard J. Hines, President
Industrial Paper Distributors, Inc.

Dr. Manuel N. Mayuga, Assistant Director,
Department of Oil Properties, City of Long Beach

Mr. Robert D. Nichol,
Moffat and Nichol Engineers

Mr. J. M. Palmer, Jr., Deputy Director
Engineering Administration and Operations Control,
Douglas Aircraft Co.

Dr. Russell Riese, Chief Higher Education Specialist
California Post Secondary Commission on Education

Dr. Edward Van Driest
Rand Corporation

Dr. Robert E. Vivian, Dean Emeritus
CSULB School of Engineering

Mr. Fred Wunderlich, Area Engineer
Guy F. Atkinson Company

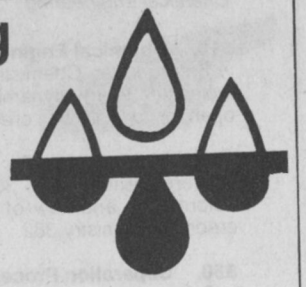
Engineering Facilities

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.

Master of Science Degree in Engineering

A program of study leading to the master of science degree in engineering is offered. For detailed information concerning requirements see the *Graduate Bulletin*.

Chemical Engineering



Professor: Lenoir.

Associate Professors: Hile, J. Reeds.

Academic Advising Coordinator: Dr. John M. Lenoir.

Chemical engineering is concerned with the conversion of chemical materials into products of increased economic utility and benefit to consumers.

The chemical engineering curriculum gives the student a thorough background in chemistry, mathematics, physics, engineering science, and engineering design and analysis to be applied to current technical problems as well as potential technical problems that might arise in the future. The objectives are to serve as preparation for immediate employment as a chemical engineer in industry, to provide a basis for later graduate study and research or to offer a background for possible advanced study in business administration, marketing or law.

All chemical engineering students must have received a minimum grade of 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 chemical engineering student must achieve a minimum 2.0 average in all chemical engineering courses attempted.

Bachelor of Science Degree in Chemical Engineering

Lower Division: Chemistry 111A-B, 251, 251L; C.E. 101, 205; E.E. 210, 210L; Mathematics 122, 123, 224; Physics 151, 152, 153.

Upper Division: Ch.E. 300, 305, 310, 320, 330, 410, 420, 430, 440, 450, 460, 470; Chemistry 321A, 322, 371A-B; Mathematics 370A; 3 units of economics; 3 approved elective units in chemical, civil, electrical or mechanical engineering; 3 units of technical writing; approved electives to total 132 units.

Upper Division

300. Chemical Engineering Fundamentals (3) F, S Hile, Reeds
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.) Not open to students with credit in Chemistry 381.

305. Computer Methods in Chemistry (2) F, S Hile, Reeds
Prerequisites: Chemistry 111A-B, Mathematics 224, Physics 151. 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 Chemistry 385.

310. Chemical Engineering Thermodynamics I (3) S Lenoir, Reeds
Prerequisite: Chemistry 371A. Thermodynamics of real gases and liquids including molecular thermodynamics and statistical concepts. (Lecture, problems 3 hours.) Not open to students with credit in Chemistry 384.

320. Fluids (3) S Lenoir
Prerequisites: Ch.E. 300, Chemistry 371A, C.E. 205, Mathematics 370A. Study of the deformation and flow of fluids. (Lecture, problems 3 hours.) Not open to students with credit in Chemistry 382.

330. Separation Processes (4) S Hile, Lenoir
Prerequisites: Ch.E. 300, 305; Chemistry 371A. Computational methods for predicting the separation of materials by absorption, distillation, extraction, reverse osmosis and other methods. (Lecture 3 hours, laboratory 3 hours.) Not open to students with credit in Chemistry 383.

410. Chemical Engineering Thermodynamics II (3) F Lenoir, Reeds
Prerequisite: Ch.E. 310. Multiphase properties including advanced equations of state. (Lecture, problems 3 hours.) Not open to students with credit in Chemistry 484.

420. Heat and Mass Transport (3) F 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.) Not open to students with credit in Chemistry 382.

430. Chemical Reactor Kinetics (3) F Hile, Lenoir
Prerequisites: Chemistry 371A-B. Homogeneous and heterogeneous reaction and reaction mechanisms. (Lecture, problems 3 hours.) Not open to students with credit in Chemistry 487.

440. Chemical Engineering Laboratory I (2) F Hile, Reeds
Prerequisites: Ch.E. 310, 320, 330. Laboratory study of fluid mechanics, separation processes and thermodynamics. Experimental design and analysis and preparation of engineering reports. (Laboratory 6 hours.) Not open to students with credit in Chemistry 482.

450. Chemical Engineering Laboratory II (2) S Hile, Reeds
Prerequisites: Ch.E. 420, 430, 440, 460 (may be taken concurrently). Laboratory study of heat and mass transport, chemical kinetics and control theory. (Laboratory 6 hours.) Not open to students with credit in Chemistry 483.

460. Chemical Process Control (3) S Reeds
Prerequisites: Ch.E. 420, 430; E.E. 210, 210L. Control theory and practice including electrical analogs of processes, root-locus and Bode plots and stability criteria. (Lecture, problems 3 hours.) Not open to students with credit in Chemistry 485.

470. Chemical Engineering Design (4) S Lenoir, Reeds
Prerequisites: Ch.E. 310, 330, 420, 430. Design based upon economics and chemical engineering design and analysis. (Lecture 3 hours, problem-design session 3 hours.) Not open to students with credit in Chemistry 486.

475. Environmental Pollution (3) On demand Hile, Reeds
Prerequisites: Chemistry 111A-B. Recommended: Chemistry 321A, 371A. Application of chemistry to the problems of pollution. (Lecture 3 hours.)

480. Theoretical Methods in Chemical Engineering (3) On demand Hile
Prerequisites: Ch.E. 305, 310, 420, 430. Simulation and optimization of chemical engineering processes by mathematical formulation and computer modeling. (Lecture, problems 3 hours.)

490. Special Topics in Chemical Engineering (1-3) On demand Hile, Reeds
Prerequisites: Senior standing in chemical engineering and consent of instructor. Selected topics from recent advances in chemical engineering. Course content will vary from year to year and may be repeated once for credit. Specific topic will be recorded on the transcript of the student.

Civil Engineering

Department Chairman: Dr. Chunduri V. Chelapati.

Emeriti: Cecil V. Armour, William D. McIlvaine, Harold T. Miller.

Professors: Al-Chalabi, Alexander, Chelapati, Dudley, Mostafa, Neidengard, W. Reed, Yen, Ying, Zagustin.

Associate Professors: Bakker, Eshett.

Assistant Professors: Chu, Plecnik.

Academic Advising Coordinator: Dr. William H. Ying.

The Department of Civil Engineering offers an option designed to give the students a broad educational background essential to modern civil engineering practice. The program is built around a basic core of mathematics, natural and engineering sciences common to accredited professional engineers' programs. It is planned to give a selection of basic engineering-science education to enable the graduate to begin a career in any of the various fields of practice in civil engineering or to prepare for graduate study in related engineering majors. It makes possible a systematic and integrated foundation in the principles of structural analysis and design, transportation systems, environmental systems, soils and foundations, hydraulic and coastal engineering, construction materials and urban engineering. Opportunity to explore a particular area of interest is offered in the wide selection of civil engineering electives to permit students a sequence of courses related to the area of their choice.

The four engineering buildings house laboratory facilities in fluid mechanics and hydraulics, materials of construction, transportation, soils and foundations, structures, photo measurement, surveying, urban and environmental engineering.

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:

Mr. William J. Carroll, James M. Montgomery Consulting Engineers, Inc.
Ms. Adele B. Dunham, Holmes and Narver, Inc.
Mr. Elias J. Garcia, City of Garden Grove
Mr. Frank B. Harvie, The Fluor Corporation
Mr. Bruce Hecox, Thomas & Hopkins, Pasadena, Calif.
Mr. Bob N. Hoffmaster, Harbor Department, City of Long Beach

Dr. Robert J. McNeill, Woodward-McNeill & Associates

Mr. John Martin, John A. Martin & Associates

Mr. John Maulding, Los Angeles County Department of Engineers

Dr. William Moffitt, University of California, Los Angeles

Mr. H. G. Osborne, Director, Orange County Environmental Management Agency

President, CSULB Student Chapter American Society of Civil Engineers

President, Chi Epsilon, Civil Engineering Honor Society

Bachelor of Science Degree in Engineering

Civil Engineering Option

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. 300 or Physics 153.

Upper Division: Mathematics 370A; C.E. 301*, 305, 335, 345, 346, 359, 406, 426, 437, 459, 464, 490A,B; Geology 370; M.E. 330, 371, 373; E.E. 311; any two laboratories selected from C.E. 336, M.E. 331, 374; an upper or lower division course in economics, electives to total 132 units, including no fewer than nine units of civil engineering courses not specified for the degree.

Master of Science Degree in Civil Engineering

Civil Engineer Degree

Programs of study leading to the master of science degree in civil engineering and the professionally oriented civil engineer degree requiring one year of study beyond the master's degree are offered. For detailed information concerning requirements see the *Graduate Bulletin*.

Lower Division

100A,B. Pre-Engineering Studies (2,2) F, S Staff
Review of engineering prerequisites and preparation for a program in engineering. May be taken in lieu of Civil Engineering 101. (Laboratory 6 hours.)

101. Introduction to Engineering and Engineering Design (1) F, S Staff
Elementary application of engineering methods to case histories. (Lecture-problems 1 hour.)

102. Introduction to Engineering Design Laboratory (1) F, S Staff
Prerequisite: C.ff. 101 or concurrent registration in C.E. 101. Experimental design of a device or a subsystem. The problems selected will involve more than a single engineering discipline and will usually be oriented toward engineering problems on the campus or in the community. Limited to freshmen. (Laboratory 3 hours.)

151. Fundamentals of Architecture I (2) S Neidengard
Prerequisites: Art 121, C.E. 101, M.E. 172 (may be taken concurrently). Imaginative experiments with special forms involving line, plane, volume, mass, color and material. Three dimensional exploration. (Lecture 1 hour, practicum 3 hours.)

200. 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.)

*One unit is required, two units may be taken as elective.

205. Analytical Mechanics I (Statics) (3) F, S Staff
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. (Lecture-problems 3 hours.)

206. Computer Programming and Civil Engineering Applications (2) F, S Ying
Prerequisites: Mathematics 122, Physics 151. Introduction to Fortran programming and application of computers to elementary civil engineering problems. (Lecture 1 hour, laboratory 3 hours.)

225. Surveying and Mapping (3) F, S Staff
Prerequisite: M.E. 172. Theory and practice of plane surveying including the use of instruments. Measurement and keeping field notes of distances, angles, elevations, traversing and plane tabling. Plotting of surveying data as related to profiling contours and topography. Study and interpretation of maps relating to civil cartography. (Lecture 2 hours, field work 3 hours.)

Upper Division

301. Engineering Forum (1) F, S Staff
Prerequisite: Junior standing. Elements of engineering practice common to all engineering specialties. Lectures, professional meetings, readings. May be repeated for a total of three units subject to major department approval.

305. Technical Communications (3) F, S Neidengard
Prerequisite: English composition. Various oral, written, symbolic and numerical methods of recording, processing and transmitting technical information. (Lecture-problems 3 hours.)

306. Computer Methods in Civil Engineering (3) On demand Ying
Prerequisite: C.E. 206 or consent of instructor. Numerical analysis and computer methods applied to various branches of civil engineering problems, including special problem oriented languages. (Lecture-problems 3 hours.)

335. Fluid Mechanics (3) F, S Staff
Prerequisite: M.E. 371. Properties of fluids, fluid statics, fluid dynamics, potential flow, flow of compressible and uncompressible fluids in closed conduits, uniform flow in open channels. (Lecture-problems 3 hours.)

336. Fluid Mechanics Laboratory I (1) F, S Staff
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, Dudley, Yen
Prerequisites: M.E. 373, Geology 370. Soil mechanics applied to engineering structures. Soil exploration, identification, classification, drainage stability and bearing capacity. (Lecture-problems 3 hours.)

346. Soils and Foundation Laboratory (1) F, S Dudley, 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.)

359. Structural Analysis (4) F, S Chelapati, Ying, Zagustin
Prerequisite: M.E. 373. Determination of shear, moment and deflections in statically determinate and indeterminate beams, trusses and frames. Not open to students with credit in C.E. 458. (Lecture 3 hours, problem session 3 hours.)

390. Engineering and Civilization (3) On demand Staff
Readings and lectures providing perspective and insight into current problems at the interfaces between engineering and other disciplines, especially anthropology, art, ecology, economics, philosophy, psychology, science and the social sciences.

401. Engineering Analysis I (3) F Eshett
Prerequisite: Mathematics 370A. Vector and tensor analysis, differential equations, elements of calculus of variations. Applications to setting up and soving problems in engineering. 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 theory and complex variables; introduction to numerical techniques. Same course as M.E. 402. (Lecture-problems 3 hours.)

404. Laboratory Techniques (1) On demand Staff
Prerequisites: Senior standing in civil engineering and consent of instructor. Study in the techniques of organizing and directing of the civil engineering laboratory. May be repeated for maximum credit of 3 units. (Conference 1 hour, laboratory 3 hours.)

405. Special Topics in Civil Engineering (3) On demand Staff
Prerequisite: Senior standing in civil engineering or consent of instructor. Selected topics from recent advances in civil engineering. Course content will vary from year to year. Specific topic will be recorded on the student's transcript. (Maximum credit 6 units.)

406. Engineering Economy and Administration (3) F, S Staff
Prerequisites: Junior standing, C.E. 301. Management principles and economic analysis of engineering projects. (Lecture-problems 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 Staff
Prerequisite: Senior standing in civil engineering. Assigned topics in technical literature or laboratory projects and reports on same.

420. Higher Surveying (3) On demand Staff
Prerequisite: C.E. 225. Advanced techniques in surveying. (Lecture 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 Engineering (2) S Alexander
Prerequisites: C.E. 305, 345 or consent of instructor. Selected highway engineering problems with emphasis on pavement materials. (Lecture 1 hour, laboratory 3 hours.)

428. Engineering Photogrammetry (3) On demand Staff
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 2 hours, laboratory 3 hours.)

429. Traffic Engineering (3) F Staff
Prerequisite: C.E. 426 or consent of instructor. Traffic engineering as related to studies, planning, operation and administration. (Lecture-problems 3 hours.)

435. Hydrology I (3) On demand Eshett
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.)

437. Open Channel Hydraulics (3) F, S Mostafa
Prerequisite: C.E. 335. 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 and laboratory studies 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 hydraulic principles to the design of dams, water courses, water systems and their related structures and devices. (Lecture-problems 3 hours.)

439. Marine Civil Engineering I (3) F Chu
Prerequisite: Senior standing with a background in natural science or engineering. Introduction to the application 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) On demand 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.)

450. Imbedding Methods in Mechanics and Structures I (3) F Zagustin
Prerequisites: Senior or graduate standing or consent of instructor, working knowledge of Fortran. Boundary value problems and integral equations in mechanics and structures are reduced to initial value problems. Applications to problems in structures and other mechanics of engineering. Students will program original work. (Lecture-problems 3 hours.)

451. Imbedding Methods in Mechanics and Structures II (3) S Zagustin
Prerequisites: Senior or graduate standing or consent of instructor, working knowledge of Fortran. Selected methods of solving optimization problems. Applications to optimization of structures and other engineering mechanics. Students will program original work. (Lecture-problems 3 hours.)

454. Computer Methods in Structural Mechanics (3) F Staff
Prerequisites: C.E. 206, 359. Stiffness and flexibility matrix methods, moment distribution, solution of practical problems of trusses and frames by using digital computers. (Lecture-problems 2 hours, laboratory 3 hours.)

455. Structural Steel Design (3) F, S Plecnik
Prerequisite: C.E. 359. Detailed design of structural steel components with typical codes and specifications. (Lecture-problems 3 hours.)

456. Timber Design (3) S Staff
Prerequisite: C.E. 359. Design of stressed skin panels, supporting members, frames and their connections. Applications to timber structures and concrete formwork. (Lecture 2 hours, laboratory 3 hours.)

457. Reinforced Masonry Design (3) F Amrhein
Prerequisite: C.E. 359. Theory, design and application of reinforced masonry (brick and block) in compliance with the Uniform Building Code. Earthquake provisions. Construction and specifications. Design of high rise buildings, industrial buildings, retaining walls. (Lecture-problems 3 hours.)

459. Reinforced Concrete Design (3) F, S Staff
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 Staff
Historical perspective of environmental legislation, laws and acts. Physical factors of environmental quality. Socio-economic factors in environmental quality. Evaluation and review of selected case studies and EIS's. (Lecture-problems 3 hours.)

463. Land Environment Engineering (3) S 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
Prerequisites: C.E. 335, completion of chemistry requirement. Engineer and his community. Source, use and management of land, air, water and related resources. (Lecture-problems 2 hours, laboratory 3 hours, field trips.)

465. Water Environment Engineering (3) F Staff
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.)

467. Water Resources Engineering (3) On demand Staff
Prerequisites: C.E. 406, 464 or consent of instructor. Economics, planning, development and management of water resources. (Lecture-problems 3 hours.)

468. Marine Pollution Control (3) F Staff
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 Staff
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) On demand Staff
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) On demand Staff
Prerequisites: C.E. 426, 459. Construction cost estimating of large engineering projects and the preparation of appropriate bids. (Lecture-problems 3 hours, field trips.)

472. Engineering Project Techniques (3) On demand Staff
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 Staff
Prerequisites: C.E. 200, 206, 305. Theory and application of logic and current techniques in the planning, scheduling and managing of engineering projects. Not open to students with credit in Civil Engineering 403. (Lecture-problems 3 hours.)

482. City Planning (3) F 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.)

490A,B. Creative Design (2,2) F, S Staff
Prerequisites: Completion of all 300 level courses, consent of department. Must be taken in last two semesters of undergraduate program. A supervised laboratory design of an individual or group project incorporating all aspects from concept to completed design and presentation. (Laboratory 6 hours.)

491. Structures Laboratory (1) F, S Chelapati, Plecnik
Prerequisites or co-requisites: C.E. 455, 459. Laboratory examination structural concepts. (Laboratory 3 hours.)

499A,B,C. Accelerated Studies (3,3,3) F, S Staff
Prerequisite: Departmental approval. Completion of a planned course of study approved in advance by the Department Council, supervised by appropriate faculty and presented for evaluation by an appointed committee. No more than nine units of any combination of Civil Engineering 408 and 499 apply toward the major in civil engineering.

Graduate Division

500. Numerical Analysis in Applied Mechanics (3)
502. Finite Element Methods (3)
504. Advanced Topics in Civil Engineering (3)
506. Engineering Economy in Complex Programs (3)
507. Port Engineering Management (3)
521. Seaport Planning and Design (3)
522. Transportation Planning (3)
524. Geometry of Highway Design (3)
525. Airport Planning and Design (3)
526. Pavement Engineering (3)
530. Mathematical Models in Hydraulic Engineering (3)
531. Groundwater and Seepage (3)
532. Sediment Transportation (3)
533. Coastal Hydrodynamics (3)
534. Hydraulic Models (3)
535. Hydrology II (3)
538. Hydraulic Engineering Design II (3)
539. Marine Civil Engineering II (3)
545. Rock Mechanics in Engineering Practice (3)
546. Theory and Design of Foundation Structures (3)
547. Soil Dynamics (3)
548. Applied Soil Mechanics (3)
549. Advanced Soil Mechanics Techniques (3)
551. Prestressed Concrete (3)
552. Theory of Plates and Shells (3)
554. Similitude and Experimental Stress Analysis (3)
555. Seismic Design (3)
556. Advanced Structural Analysis I (3)
557. Advanced Structural Analysis II (3)
558. Dynamics of Structures (3)
559. Elastic-Plastic Instabilities (3)
560. Environmental Engineering Laboratory I (3)
562. Environmental Engineering Design I (3)
563. Environmental Engineering Design II (3)
564. Public Health Engineering (3)
565. Environmental Waste Engineering (3)
602. Seminar in Civil Engineering (3)
696. Research Methods (1)
697. Directed Studies (1-3)
698. Thesis or Project (2-6)
699. Thesis (3-9)

Electrical Engineering

Department Chairman: Dr. Gene H. Hostetter.

Emeriti: Robert B. Goldman, Rodney C. Lewis, Harold W. Washburn.

Professors: Arnett, J. Hill, Houde, Lane, MacMillan, M. Schwartz, R. W. Winchell.

Associate Professors: Carissimo, G. Cain, E. Evans, Frankland, Hostetter, Jordanides, Lindquist, L. Kendall, Paal, Patrick, Stefani.

Adjunct Professor of Ocean Engineering: Willard Bascom.

Adjunct Clinical Professor: Irvin Unger.

Academic Advising Coordinator: Dr. Raymond T. Stefani.

Biomedical Engineering Option

The Electrical Engineering Department offers an option in biomedical engineering that has a curriculum similar to the electrical engineering option but allows the student to acquire substantive competence in biomedical engineering and biology. The program builds upon a strong base of biology, mathematics, physics, chemistry and engineering science to develop a clinically oriented biomedical engineer to serve in community medicine. It includes a core of standard electrical engineering courses as well as courses and laboratories in biomedical engineering, anatomy, physiology and biology. Elective units are available in the senior year to explore individual areas of interest.

Laboratory facilities in the field of biomedical engineering are available in engineering and laboratory facilities for anatomy and physiology are available in biology. The campus computer center plus laboratory computer systems are available to simulate biological systems and to collect, process and display physiological data.

No biomedical engineering student may enroll in an electrical engineering course unless he has received a minimum grade of C in each of the prerequisites. In addition to any other all-college requirements regarding grade point averages for graduation, a biomedical engineering student must achieve a minimum 2.0 average in all electrical engineering and biology courses attempted.

Computer Engineering Option

The Electrical Engineering Department offers an option in computer engineering which has curriculum similar to the electrical engineering option, but allows the student to acquire substantive competence in computer sciences and related fields, similar in content to that acquired in a typical computer

science department. 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. Opportunity to explore a particular area of interest is provided by elective units in the senior year.

Laboratory facilities in the field of electrical engineering and digital circuitry are available in the engineering building. Campus computers plus a tie-in with The California State University and Colleges, Southern Regional Data Center provide ample computing facilities.

No computer engineering student may enroll in an electrical engineering course unless he has received a minimum grade of C in each of the prerequisites. In addition to any other all-university requirements regarding grade point averages for graduation, a computer engineering student must achieve a minimum 2.0 average in all electrical engineering courses attempted.

Electrical Engineering Option

The option in electrical engineering is designed to prepare graduates for responsible engineering positions in design, development, research, applications and operation in the field of electronic circuits, physical electronics, electromagnetics, underwater acoustics and instrumentation and information theory. The curriculum is built around a strong basic core of mathematics, physics, and engineering science. This is followed by basic courses in electronics and electromagnetics. Opportunity to explore a particular area of interest and to provide a wide background in the field of engineering electronics is provided in the senior year by a choice of elective units.

Laboratory facilities in the field of electrical engineering are available in the Engineering Building and include basic as well as more advanced electronic laboratory instruction, servo-mechanisms laboratory and electric machinery laboratory.

No electrical engineering student may enroll in an electrical engineering course unless he has received a minimum grade of C in each of the prerequisites. In addition to any other all-university requirements regarding grade point averages for graduation, an electrical engineering student must achieve a minimum 2.0 average in all electrical engineering courses attempted.

Ocean Engineering Option

Administered by the Electrical Engineering Department, the ocean engineering option program is designed to provide students with two basic skill categories; one, competence in one of the three basic engineering disciplines (civil, electrical or mechanical) and two, an understanding of the ocean environment and knowledge of the drastic effects this environment can have upon engineering endeavors. The curriculum is built around a strong basic core of mathematics, physics and engineering science. This is followed by more advanced courses in electronics, analytical mechanics, fluid mechanics, thermodynamics, materials and corrosion, ocean environment and underwater systems. A wide choice of elective units permits a degree of specialization in a traditional discipline, plus further exploration into ocean-related academic areas.

Laboratory facilities consist of a 40-foot research vessel operated by the School of Engineering, a larger ocean going ship available to the ocean engineering students, plus an inventory of modern electronic and acoustic systems and ocean measurement instruments for study and experience afloat.

This University is a member of the Southern California Ocean Studies Consortium of The California State University and Colleges system.

Bachelor of Science Degree in Engineering

Biomedical Engineering Option

Lower Division: M.E. 172, 273; Physics 151, 152, 153; Mathematics 122, 123, 224; Chemistry 111A; E.E. 101, 140, 210, 210L, 241; Biology 208A,B.

Upper Division: Economics 300; Mathematics 370A; C.E. 301, 406; M.E. 330; E.E. 310, 320, 330, 330L, 341, 370, 370L, 406, 406L, 407, 433, 433L, 440, 445, 480, 490; Biology 441, 446, 494; approved electives to total 132 units.

Computer Engineering Option

Lower Division: M.E. 172, 273; Mathematics 122, 123, 224; Chemistry 111A; Physics, 151, 152, 153; E.E. 101, 140, 210, 210L, 241.

Upper Division: Economics 300; Mathematics 370A; C.E. 301, 406; M.E. 322 or 331, 323, 330, 371; E.E. 310, 320, 330, 330L, 341, 370, 370L, 400, 410, 411L, 433, 433L, 440, 442, 445; approved electives to total 132 units.

Electrical Engineering Option

Lower Division: M.E. 172, 273; Mathematics 122, 123, 224; Chemistry 111A; Physics 151, 152, 153; E.E. 101, 140, 210, 210L, 241.

Upper Division: Economics 300; Mathematics 370A; C.E. 301, 406; M.E. 330, 331, 371; E.E. 310, 320, 330, 330L, 341, 350, 350L, 370, 370L, 410, 411L, 433, 433L, 462; approved electives to total 132 units.

Ocean Engineering Option

Lower Division: M.E. 172, 273; Mathematics 122, 123, 224; Chemistry 111A; Physics 151, 152, 153; E.E. 101, 210, 210L, 265; C.E. 206 or E.E. 140 or M.E. 205.

Upper Division: Mathematics 370A; Geology 462; C.E. 301, 335, 336, 406, 468; E.E. 310, 330, 330L, 365, 366, 425; M.E. 330, 331, 371, 373, 426; Economics 300; approved electives to total 132 units.

Master of Science Degree in Electrical Engineering

A program of study leading to the master of science degree in electrical engineering is offered. For detailed information concerning requirements see the *Graduate Bulletin*.

Lower Division

101. Introduction to Electrical Engineering (3) F, S Staff
Prerequisite or co-requisite: Mathematics 122. Survey of the various branches of electrical engineering: networks, computers, systems, communication, electromagnetics, power, electronics and solid state. Not open to students with credit in Electrical Engineering 210. (Lecture-problems 2 hours, laboratory 3 hours.)

140. Computer Methods in Electrical Engineering I (2) F, S Staff
Fortran language for digital computers, programming and applications to engineering problems. (Lecture 1 hour, laboratory 3 hours.)

202. Introduction to Technology for Non-Engineers (3) F, S Paal
Survey of the achievements, methods and goals of contemporary technology. Not open to students majoring in engineering. (Lecture-discussion 3 hours.)

210. Electric Circuits I (3) F, S Staff
Prerequisites: Physics 152, Mathematics 224, E.E. 102, 102L. Linear circuit analysis techniques including Kirchhoff's laws, Network Theorems, Mesh and nodal analysis. Resonance, transformers and balanced 3 phase systems. (Lecture-problems 3 hours.)

210L. Electric Circuits I Laboratory (1) F, S Staff
Prerequisites: E.E. 102, 102L. Prerequisite or co-requisite: E.E. 210. Laboratory study of electric and magnetic circuits, instrumentation, transformers and rotating machinery. (Laboratory 3 hours.)

241. Computer Methods in Electrical Engineering II (2) F, S Hill, Paal
Prerequisite: E.E. 140. Application of digital computers to the solution of problems in electrical engineering. (Lecture-problems 2 hours.)

265. Engineering for Ocean Environment (3) F Kendall
Problems involved in engineering ventures in, on and under the ocean. Environmental considerations at the coastal interface and engineering contributions to development and use of ocean resources. Analysis of current events in ocean-related activities. (Lecture-discussion 3 hours.)

Upper Division

310. Electric Circuits II (3) F, S Staff
Prerequisites: E.E. 210, Mathematics 370A. Continuation of circuit analysis including Fourier and LaPlace transform techniques, signal flow graphs and analogous systems. (Lecture-problems 3 hours.)

311. Electric Circuits and Electronics (3) F, S Staff
Prerequisites: Mathematics 224, Physics 152. Analysis of electric and electronic circuits with emphasis on applications. Not open to electrical engineering majors. (Lecture 2 hours, laboratory 3 hours.)

320. Fundamentals of Electron Devices (3) F, S Frankland, Winchell
Prerequisites: Mathematics 370A, Physics 152. Electrostatic and electromagnetic fields, electron ballistics, semi-conductors, characteristics of vacuum tubes, diodes and transistors. (Lecture-problems 3 hours.)

330. Engineering Electronics I (3) F, S Staff
Prerequisites: E.E. 210, 210L. Co-requisite: E.E. 330L. Transistor characteristics, equivalent circuits, rectifier and amplifier circuits, introduction to vacuum tubes. (Lecture-problems 3 hours.)

330L. Engineering Electronics I Laboratory (1) F, S Staff
Co-requisite: E.E. 330. Laboratory study of electron tubes, transistors and crystal diodes, electronic circuits and instruments. (Laboratory 3 hours.)

340. Computers in Engineering (3) F Staff
Prerequisite: E.E. 140. Concepts in analysis, design and utilization of computers. Basic digital computer structure. Representation and processing of information. (Lecture-problems 3 hours.)

341. Computer Methods in Electrical Engineering III (2) F, S Staff
Prerequisites: E.E. 241, Mathematics 370A. Numerical methods in applied engineering problems including numerical integration and solutions to differential equations. (Lecture-problems 2 hours.)

345. Computers' Role in Today's Society (3) F, S Staff
Nonquantitative survey of the impact of computer technology on contemporary society. Topics include computer organization and structure, commercial applications, computers in the arts, hospital information systems. (Lecture, discussion 3 hours.)

350. Electromagnetics (3) F, S Strawn
Prerequisite: E.E. 310. Analysis and performance of electro-mechanical energy conversion devices and transformers. Not open to students with credit in E.E. 450. (Lecture-problems 3 hours.)

350L. Electromagnetics Laboratory (1) F, S Staff
Co-requisite: E.E. 350. Laboratory study of electro-mechanical devices, transformers and magnetic amplifiers. Not open to students with credit in E.E. 450L. (Laboratory 3 hours.)

365. Ocean Engineering I (3) S Kendall
Prerequisite: E.E. 265 or consent of instructor. Principal aspects of the technology of ocean engineering. Physical ocean features, sea motion, oceanographic instrumentation, underwater tools and manipulators, marine corrosion, boring and fouling, materials for marine use. Analysis of current developments in ocean and underwater engineering. (Lecture-discussion 3 hours.)

366. Ocean Engineering II (3) F, S Kendall
Study of major elements in ocean engineering. Ship characteristics, advanced ocean interface vehicles, introduction to naval architecture, design of underwater vehicles, buoys and buoy systems, ship handling and seamanship. Analysis of current developments in ocean and underwater engineering. (Lecture-discussion 3 hours.)

370. Control Systems I (3) F, S Staff
Prerequisite: E.E. 310. Principles of analysis block diagrams and signal flow graphs, stability criteria, application to classical control systems design. Not open to students with credit in Electrical Engineering 470.

370L. Control Systems I Laboratory (1) F, S Staff
Prerequisite or co-requisite: E.E. 370. Laboratory study of classical control systems. Not open to students with credit in Electrical Engineering 470L. (Laboratory 3 hours.)

401. Electrical Engineering Problems (3) F, S Staff
Prerequisite: Mathematics 370A. Co-requisite: E.E. 310. Problem solving in various areas of electrical engineering. (Lecture-problems 3 hours.)

405. Special Topics in Electrical Engineering (3) On demand Staff
Prerequisite: Senior standing in electrical engineering or consent of instructor. Selected topics from recent advances in electrical engineering. Course content will 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. (Lecture-problems 3 hours.)

406. Biomedical Engineering I (3) F Schwartz
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
Prerequisite: Senior standing in engineering or consent of instructor. Laboratory study of medical instrumentation, transducers and computer data processing. (Laboratory 3 hours.)

407. Biomedical Engineering II (3) S Schwartz
Prerequisite: E.E. 406 or consent of instructor. Analysis and design of computers and data collection equipment for real time, on line medical systems. (Lecture-problems 3 hours.)

410. Electric Circuits III (3) F, S Winchell
Prerequisite: E.E. 310. Two port networks, matrix methods, introduction to network synthesis, distributed parameter circuits. (Lecture-problems 3 hours.)

411L. Transmission Lines (1) F, S Staff
Transmission lines, impedance matching and microwave networks. (Laboratory 3 hours.)

420A-B. Electrical Properties of Matter (3,3) F, S Houde
Prerequisite: E.E. 320. Electrical properties and characteristics of materials which comprise engineering devices and systems. (Lecture-problems 3 hours.)

425. Underwater Instrumentation Systems (3) F, S Staff
Prerequisite: E.E. 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) F, S Staff
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 Paal
Prerequisite: E.E. 433. Analysis of transistor circuits, wave shaping circuits, logic circuits and non-linear waveform generation. Use of ECAP. (Lecture-problems 3 hours.)

431L. Engineering Digital Electronics Laboratory (1) F, S Staff
Co-requisite: E.E. 431. Laboratory study of wave shaping, non-linear waveform generation and logic circuits. (Laboratory 3 hours.)

432. Semi-Conductor Circuit Design (3) F, S Patrick
Prerequisite or co-requisite: E.E. 433. Design of semi-conductor circuits considering variation in circuit and device parameters, noise and dissipation. (Lecture-problems 3 hours.)

432L. Semi-Conductor Circuit Design Laboratory (1) F, S Staff
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 Staff
Prerequisites: E.E. 330, 330L; co-requisite: E.E. 433L. Analysis of electronic integrated circuits and systems. Not open to students with credit in E.E. 430. (Lecture-problems 3 hours.)

433L. Engineering Electronics II Laboratory (1) F, S Staff
Co-requisite: E.E. 433. Laboratory study of integrated electronic circuits and systems. (Laboratory 3 hours.)

440. Logical Design of Digital Computers (3) F, S Lane
Prerequisites: E.E. 330, 330L and senior standing. Number systems, Boolean algebra, minimal functions, logic and design of sequential circuits. (Lecture-problems 3 hours.)

441. Computer Applications in Electrical Engineering (3) S Paal
Prerequisite: E.E. 241. Numerical methods in applied engineering problems including matrix inversion, numerical differentiation and integration. (Lecture-problems 3 hours.)

442. Programming Languages and Systems I (3) S Carissimo
Prerequisite: E.E. 340. Formal definition of programming languages including specification of syntax and semantics including a comparative study of several widely used programming languages. (Lecture 2 hours, laboratory 3 hours.)

444. Programming Languages and Systems II (3) F, S Staff
Prerequisite: E.E. 442. Syntax directed compiler theory. Organization of a compiler and overall design. Use of compiler writing languages and boot-strapping. (Lecture-problems 3 hours.)

445. Digital Subsystems and Systems (3) F, S Staff
Prerequisite: E.E. 440. Basic digital circuits. Design of digital subsystems such as sequences, adders, registers and memories. Integration of digital components into an overall system. (Lecture- problems 3 hours.)

452. Power Systems I (3) F Hill
Prerequisite: E.E. 350. Power transmission line and terminal equipment parameters and characteristics, system performance. (Lecture-problems 3 hours.)

453. Power Systems II (3) S Hill
Prerequisite: E.E. 350. Power systems in the steady state, short circuit calculations, equipment characteristics. (Lecture-problems 3 hours.) Not open to students with credit in E.E. 451.

460. Guided Waves and Antennas (3) F, S Hostetter
Prerequisite: E.E. 462. Propagation of plane and guided wave in lossless and dissipative media; radiation and antenna design. (Lecture-problems 3 hours.)

462. Electrical Engineering Fields (3) F, S Evans, Houde
Prerequisites: Mathematics 370A, Physics 152, E.E. 320. Electric and magnetic static and dynamic field theory through Maxwell's Equations. Not open to students with credit in Electrical Engineering 360. (Lecture-problems 3 hours.)

465. Underwater Sonics (3) S Staff
Prerequisite: C.E. 335 or E.E. 410. Analysis of distributed parameter systems; wave generation, propagation and detection. Application to transmisson media and waves in liquids and solids. (Lecture-problems 3 hours.)

465L. Ocean Engineering Laboratory (1) S Staff
Co-requisite or prerequisite: E.E. 465. Laboratory study and analysis of distributed parameter systems; wave generation, propagation and detection. Laboratory measurement of sonic performance. (Laboratory 3 hours.)

466. Underwater Sonics II (3) S Staff
Prerequisite: E.E. 465. Application of sonic principles to engineering problems. Directional arrays and detectors. Transmission types and levels. Noise and reverberation effects. (Lecture-problems 3 hours.)

467. Underwater Information Systems (3) S Staff
Prerequisite: E.E. 465. Selection, collection and processing of underwater information obtained by active and passive systems. Engineering consideration for optimizing selection of bandwidth, modulation type, signal levels and processing techniques. (Lecture-problems 3 hours.)

471. Control Systems II (3) F, S Staff
Prerequisite: E.E. 370, 370L. Introduction to modern control system analysis and design. State space descriptions, canonical forms, observability, controllability and controller configurations. (Lecture-problems 3 hours.)

471L. Control Systems II Laboratory (1) F, S Staff
Co-requisite: E.E. 471. Laboratory study of modern control systems. (Laboratory 3 hours.)

480. Engineering Probability and Statistics (3) F, S Arnett, Schwartz
Prerequisite: E.E. 310. Introduction to probability, statistics, random variables and their application. (Lecture-problems 3 hours.)

482. Communication Theory (3) F, S Cain
Prerequisites: E.E. 310, 330. Modern theory of communication with emphasis on noise processes and their effect on transmission of information. (Lecture-problems 3 hours.)

490. Special Problems (1-3) F, S Staff
Prerequisite: Consent of instructor. Assigned topics in technical literature or laboratory projects and reports on same. May be repeated for a total of six units.

Graduate Division

505. Analytical Methods in Engineering (3)

510. Linear Network Synthesis (3)

511. Active Network Synthesis (3)

520. Physical Electronics I (3)

521. Physical Electronics II (3)

522. Semiconducting Materials (3)

530. Semi-Conductor Circuit Design (3)

530L. Semi-Conductor Circuit Design Laboratory (1)

540. Digital Computer System Analysis (3)

541. Computer Arithmetic Unit Design (3)

542. Systems Engineering (3)

544. Analog Analysis (3)

545. Advanced Engineering Applications of Digital Computers (3)

560A-B. Applied Electromagnetic Theory (3,3)

565. Underwater Acoustics (3)

566. Underwater Detection Systems (3)

570. Advanced Control Systems I (3)

571. Advanced Control Systems II (3)

572. Electronic Instrumentation and Control (3)

580. Information Theory (3)

582. Random Processes in Engineering (3)

583. Decision Theory (3)

590. Special Topics in Electrical Engineering (3)

610. Seminar in Network Theory (3)

630. Seminar in Electrical Circuit Design (3)

640. Seminar in Digital Computer Systems (3)

670. Seminar in Control Systems (3)

697. Directed Research (1-3)

698. Thesis and/or Project (2-4)

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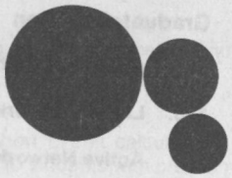
Mechanical Engineering



Department Chairman: Dr. Hillar Unt.

Emeriti: Ernest G. Brind, Herluf P. Nielsen.

Professors: deSoto, Dyer, Gilpin, Gold, Kyle, Leutwiler, Miller, Potter, Roman, Torby, Tsao, Unt.

Associate Professors: Edelman, Kellam, Kundis, Mijares, Sungu, VanderMeyden.

Academic Advising Coordinator: Mr. Ernest R. Mijares.

Engineering Materials Option

Modern engineering applications in all fields require new materials with properties well beyond those obtainable with the alloys available several years ago. New materials are needed for such diverse applications as the supersonic air transports, 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 materials options are being offered throughout the country to satisfy the demand for materials oriented engineers.

Course work is directed toward the understanding of the properties of materials in terms of their atomic structure, and emphasis is placed on the behavior of materials in engineering applications. The laboratories have excellent equipment for studies in this field and include facilities for the determination of crystal structure, microscopic and X-ray diffraction examination of solids, thermal and mechanical treatment and the determination of properties at low and high temperatures.

Industrial-Management Engineering Option

The option in industrial-management engineering is designed to prepare graduates for responsible engineering positions in the growing field of technical management. The option is of a highly interdisciplinary nature having a number of courses from the School of Business Administration in the curriculum. It is composed of a core of mathematics, physics and engineering science supplemented by courses in business law, economics, statistics, accounting, management, operations research, processing and production control.

Mechanical Engineering Option

The realm of mechanical engineering is so extensive that training must be broad and 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.

Industry sponsored scholarships are available to upper division mechanical engineering students. Participating industries that contribute scholarships are the Alcoa Foundation, Getty Oil Company and Union Oil Company of California Foundation. Further information is available in the department office.

Engineering Materials Option

Lower Division: M.E. 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 to total a minimum of 17 units.

Upper Division: M.E. 322, 323, 330, 371, 373, 374, 375, 421, 423, 425, 427, 436; E.E. 420A; C.E. 301, 406; Chemistry 371A; Economics 300; Mathematics 370A; approved electives to total 132 units.

Industrial Management Option

Lower Division: M.E. 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 to total a minimum of 17 units.

Upper Division: M.E. 330, 331, 371, 373, 390, 490; C.E. 301, 406; E.E. 330, 330L; Mathematics 370A; Economics 300; Finance 324; Management 300, 402, 442, 460; and approved electives to total 132 units.

Mechanical Engineering Option

Lower Division: M.E. 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 to total a minimum of 17 units.

Upper Division: M.E. 305, 322, 323, 330, 331, 336, 337, 371, 373, 374, 375, 471, 472; C.E. 301, 335, 336, 406; E.E. 310, 330, 330L; 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: C. B. Gilpin

Professors: J. L. Dyer, Ph.D.; C. B. Gilpin, Ph.D.; E. Miller, D. Engr. Sci.; H. Unt, Ph.D.

Associate Professor: W. Edelman, Ph.D.

Assistant Professor: G. Trusty, Ph.D.

The Certificate Program in Industrial Plastics Processing and Design is an interdisciplinary program sponsored by the Industrial Education, Mechanical Engineering and Chemical Engineering Departments. For additional information and requirements refer to the Industrial Education Department.

Master of Science Degree in Mechanical Engineering

A program of study leading to the master of science degree in mechanical engineering is offered. For detailed information concerning requirements see the *Graduate Bulletin*.

Lower Division

172. Engineering Design Graphics I (3) F, S Kundis
Principles of graphical expression through sketching, instrumental drawing, orthographic projection, auxiliary views, dimensions, working drawings. Descriptive geometry; methods of points, lines, planes, warped surfaces, intersections and development. Elementary creative design. (Lecture 1 hour, laboratory 6 hours.)

200. Impact of Technology on Society (3) F, S deSoto
Study of the interaction between man, society, engineering and science. Philosophical viewpoints of anthropology and engineering will be used as starting points. Guest lecturers from disciplines associated with the study of man will be used. Divergent views will be explored in structured and unstructured discussion. (Lecture, discussion 3 hours.)

201. Technological Pollution (3) F, S Unt
Instrumental methods for pollution measurement, pollution control technology. Economic evaluation of technological processes for pollution control. Designed primarily for non-majors. (Lecture-demonstration 3 hours.)

205. Computer Methods in Mechanical Engineering (2) F, S Staff
Prerequisites: Mathematics 122, Physics 151. Digital computer programming with applications to mechanical engineering problems. (Lecture 1 hour, laboratory 3 hours.)

222. Manufacturing Processes (2) F, S Staff
Prerequisite or co-requisite: M.E. 172. Machines and equipment and processes used in 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 Staff
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: M.E. 205. Application of numerical methods to the solution of mechanical engineering problems. Roots of algebraic and transcendental equations. Solution of simultaneous linear algebraic equations. Numerical integration and differentiation. Numerical integration of ordinary differential equations: initial-value problems, boundary-value problems. Partial differential equations. (Lecture-problems 3 hours.)

322. Engineering Metallurgy I (2) F, S Gilpin, Miller
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
Prerequisite or co-requisite: M.E. 322. Metallographic study of the effects of thermal treatments on the structures and mechanical properties of metals and alloys. (Laboratory 3 hours.)

330. Engineering Thermodynamics I (3) F, S Staff
Prerequisites: Mathematics 224, Physics 151 and approved chemistry. Co-requisite: M.E. 331. First and second laws of thermodynamics; properties of liquids, gases and vapors; sources of energy and its conversion to work. Introduction to heat transfer and psychrometry. (Lecture-problems 3 hours.)

331. Engineering Thermodynamics I Laboratory (1) F, S Staff
Co-requisite: M.E. 330. Measurements of thermodynamic properties, fluid flow and heat transfer; calorimetry. (Laboratory 3 hours.)

336. Engineering Thermodynamics II (3) F, S Staff
Prerequisites: M.E. 330, 331. Co-requisite: M.E. 337. Gas processes; relation of entropy to the second law; gas cycles; vapor cycles; mixtures of gases and vapors. (Lecture-problems 3 hours.)

337. Engineering Thermodynamics II Laboratory (1) F, S Staff
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 Staff
Prerequisites: M.E. 172, 205; C.E. 205 or Mathematics 370A. Engineering application of fundamentals of kinematics and kinetics to problems involving translation, rotation, and plane motion. Work and energy, impulse and momentum, and mechanical vibrations. (Lecture-problems 3 hours.)

373. Mechanics of Deformable Bodies (3) F, S Staff
Prerequisite: C.E. 205; co-requisite: M.E. 374. 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 Staff
Co-requisite: M.E. 373. Laboratory course in the physical and mechanical properties of engineering materials, and the relationship of structure to these properties. (Laboratory 3 hours.)

375. Kinematics and Dynamics of Mechanisms (4) F, S Edelman, Leutwiler
Prerequisites: M.E. 222, 272, 322, 371. Fundamentals of linkages, cams, gears and gear trains. Velocity and acceleration analysis of machines. Static and inertia loading of machine parts. Dynamic analysis. (Lecture 3 hours, design application 3 hours.)

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 Gold, Roman
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. (Lecture-problems 3 hours.)

402. Engineering Analysis II (3) F, S Gold, Roman
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.)

405. Special Topics in Mechanical Engineering (3) On demand Staff
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 the department. (Lecture-problems.)

421. Metallurgy II (3) F Gilpin
Prerequisite: M.E. 322. Heat treatment of steels and non-ferrous alloys. Properties and uses of engineering alloys, such as carbon and alloy steels, aluminum-base and copper-base alloys. (Lecture-problems 2 hours, laboratory 3 hours.)

423. Crystallography of Metals (3) F Staff
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. (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.

425. Chemical and Electrochemical Processes (3) S Miller
Prerequisites: Chemistry 371A-B, M.E. 330. Application of thermodynamics to electroplating, electroless plating, heat treating, chem milling, corrosion and ore reduction.

426. Corrosion Engineering (3) S Gilpin
Prerequisite: M.E. 322. Principles of oxide film growth and electrochemical corrosion, corrosion testing, environmental and metallurgical effects on corrosion, environmental stress crackling, corrosion control and prevention. (Lecture-problems 3 hours.)

427. Mechanical Metallurgy (3) F Staff
Prerequisite: M.E. 421. Plasticity, deformation of single crystals and polycrystalline aggregates, dislocations, fracture, internal friction, brittle failure, residual stresses, plastic forming. (Lecture-problems.)

431. Heat Transfer (3) F, S deSoto
Prerequisites: M.E. 330, C.E. 335, Mathematics 370A. Principles of heat transfer by conduction, radiation, and convection. Steady state conduction in one, two, or three dimension. Introduction to transient heat flow, mass transfer. (Lecture 2 hours, laboratory 3 hours.)

432. Fluid Machinery (3) On demand Kyle
Prerequisites: M.E. 330, 371; C.E. 335. Design, analysis and selection of pumps, fans, blowers, compressors, turbines, fluid actuators, control and metering devices. The solution of practical engineering problems especially in the area of turbomachinery. Suitable field trips will be taken to observe manufacture and operation of equipment. Laboratory demonstrations will be made of selected items discussed in the course. (Lecture-problems 3 hours.)

434. Oceanographic Waves and Currents (3) F Kyle
Prerequisites: Mathematics 370A; M.E. 331, 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. Statistical Thermodynamics (3) S Dyer
Prerequisite: M.E. 336 or consent of instructor. Fundamentals of combinatorial analysis, statistical mechanics, independent particles, monoatomic solids, chemical equilibrium studies, collision theory, real gases and liquids. (Lecture-problems.)

437. Intermediate Fluid Mechanics (3) S Kyle
Prerequisites: C.E. 335, Mathematics 370A. Dynamics of ideal and real fluids; potential 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 Staff
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 (3) F Kellam
Prerequisites: C.E. 335, M.E. 336. Application of theoretical and experimental fluid mechanics to aerodynamic theory of lift and drag; finite wing theory; compressibility and viscosity; slender body theory. (Lecture 2 hours, laboratory 3 hours.)

442. Flight Vehicle Propulsion Systems (3) S Mijares
Prerequisites: C.E. 335; M.E. 322, 336. Analysis and performance of aircraft and missile propulsion systems including reciprocating, turboprop, ramjet, pulse jet and rocket. Limitations on performance imposed by thermodynamics, fluid mechanics and strength. (Lecture 3 hours.)

443. Aircraft and Missile Structures (3) S Staff
Prerequisites: M.E. 322, 373. Introduction to the analysis of interminate structures, shear flow, torsion, column stability, plates and shells. (Lecture-problems 3 hours.)

444. Flight Vehicle Dynamics and Control (3) F Mijares
Prerequisites: C.E. 335, E.E. 310, M.E. 371, Mathematics 370A. Equations of motion for vehicles in flight. Solution of linearized equations by methods of Laplace transforms and dynamic system analysis using computer techniques. (Lecture-problems 3 hours.)

450. Special Problems (1-3) F, S Staff
Prerequisite: Senior standing. Assigned topics in technical literature or laboratory projects and reports on same.

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 3 hours, laboratory 3 hours.)

471. Analysis and Design of Machine Components (3) F, S Leutwiler
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 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 2 hours, laboratory 3 hours.)

473. Dynamics of Machinery (3) On demand Staff
Prerequisite: M.E. 471. Balancing of rotating and reciprocating parts, energy variation in machinery, speed control of machines, design project. (Lecture-problems.)

475. Analytical Mechanics III. Particle and Rigid Body Mechanics (3) F, S Staff
Prerequisites: M.E. 371, Mathematics 370A. Detailed study of particle and rigid body mechanics using vector methods and three dimensional analysis emphasizing vibrating systems, planetary and satellite motions, variable mass, the gyroscope and gyrocompass. (Lecture-problems 3 hours.)

476. Engineering Vibrations (3) S Unt
Prerequisites: M.E. 371, Mathematics 370A. Introduction to fundamentals of mechanical vibrations, types of oscillatory motions. Free, forced and transient vibrations; damping, vibration isolation, vibration measuring instruments. Coupled oscillations of lumped systems; use of Lagrange's equations; Rayleigh and matrixiteration method. (Lecture 2 hours, laboratory 3 hours.)

477. Advanced Mechanics of Deformable Bodies (3) F, S 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 theorem. (Lecture-problems 3 hours.)

479. Engineering Acoustics (3) F Kellam, Unt
Prerequisites: Mathematics 370A, E.E. 310, M.E. 371. Theory and application of acoustical principles to generation, transmission, measurement and control of sound. (Lecture 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 to engineering design, component modes of failure and system reliability. Design analysis of failure modes and life time. Case study of design application. (Lecture-problem 2 hours, design laboratory 3 hours.)

Graduate Division

501. Advanced Engineering Analysis (3)

522. Fracture of Engineering Materials (3)

531. Heat and Mass Transfer (3)

532. Mechanics of Ideal Fluids (3)

533. Mechanics of Real Fluids (3)

536. Analytical Thermodynamics (3)

537. Gas Dynamics (3)

541. Advanced Aerodynamics (3)

542. High-Speed Aerodynamics (3)

543. Advanced Aircraft and Missile Structures (3)

544. Bioengineering in Flight Vehicle Design (3)

571A-B. Random and Nonlinear Vibrations (3,3)

572. Stress Analysis in Design (3)

573. Theory of Elasticity (3)

574. Advanced Design in Mechanical Engineering (3)

575. Advanced Dynamics (3)

576. Engineering Vibrations II (3)

577. Creep and Fatigue (3)

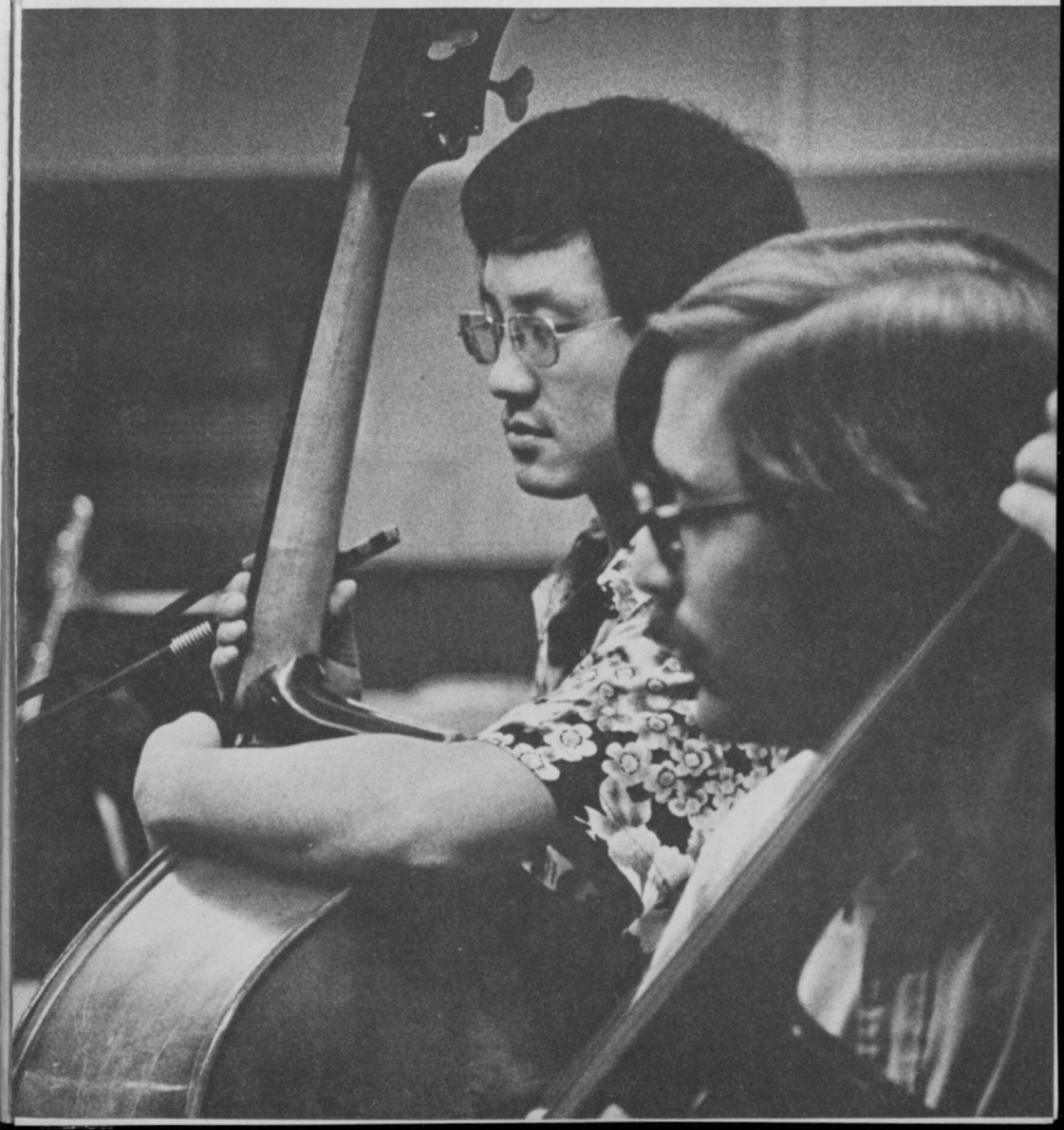
691. Directed Studies (1-3)

695. Seminar in Mechanical Engineering (3)

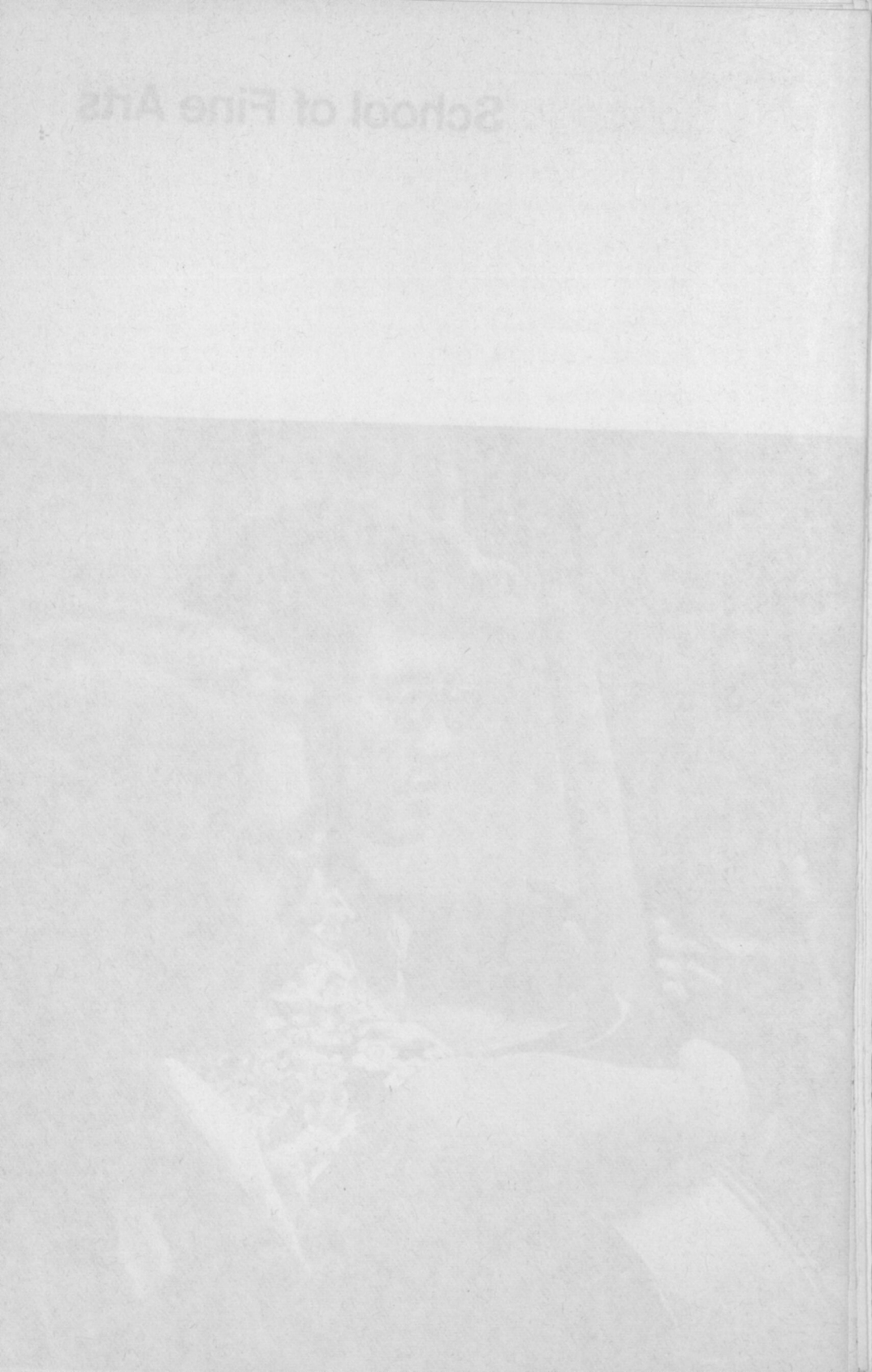
697. Directed Research (1-3)

698. Thesis and/or Project (1-6)

School of Fine Arts



School of Fine Arts



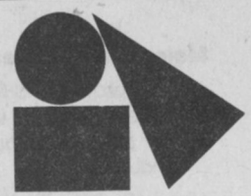
Administrative Officers

Dean of the School	Mr. A. James Bravar	FA3-100
Administrative Assistant	Mrs. Sue T. Elliott	FA3-100

Directory of Departments

Department	*Chairmen*	*Dept. Offices*
Art	Mr. Thomas Ferreira	FA4-106
Dance	Mrs. Celeste Kennedy	FO4-270
Music	Dr. Gerald Daniel	MU-104
Theatre Arts	Mr. Ralph Duckwall	TA-221

Art



Department Chairman: Mr. Thomas Ferreira.

Emeritus: Bela L. Biro.

Professors: Archer, Covell, Crafts, Dillingham, Ferreira, Glenn, Graff, Gross, Hitchcock, Krause, Leland, Martin, Merlino, Moryl, Muller-Stach, Oden, Ramsey, J. Schultz, Shaak, Swift, C. Thompson, Turnbull, Tyrnauer, Van Eimeren, Wallin, Youry.

Associate Professors: Aall, Borders, Brisker, Click, Cooper, Kammermeyer, Lincoln, Martel, Myers, Pine, Purcell, Slayman-Jones, Snidecor, Werlick.

Assistant Professors: Cummings, Dame, de Heras, Dukes, Greer, Harris, Kimball, McDonald.

Visiting Professor: Askin.

Lecturers: Mendez, Pendell, Ravanal, Yates.

Director, University Galleries: Constance Glenn.

Adjunct Professors: Jan Adlmann, Director, Long Beach Museum of Art; Robert Barrett, Creative Arts Director, Long Beach Recreation Department.

Credential Adviser: Dr. James Crafts.

Academic Advising Coordinator: Mr. John Snidecor.

The Art Department has curricular programs leading to the following 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.

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.

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. The certificate programs are described in the Special Programs section in this *Bulletin*.

Major in Art for the Bachelor of Arts Degree (General Art)

This program is for students who seek a broad understanding and appreciation of art. Total art units required: 47 (23 lower 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 master of 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.

Freshmen and sophomores seeking admission to the B.F.A. program must:

1. Meet entrance requirements to the University.
2. Provide a transcript of credits to the Art Department. This is in addition to any transcript submitted to the University Admissions Office.
3. A portfolio is optional at this level. Students who feel they have not yet specialized enough to prepare a portfolio or to demonstrate otherwise their qualification for the B.F.A. program are advised to seek admission to the B.A. program in art. Once in residence, the B.A. student who wishes may take more specialized work and apply at a later date to transfer to the B.F.A. program.

Juniors and seniors seeking admission to the B.F.A. program must:

1. Meet entrance requirements to the University.
2. Submit a portfolio of work to the Art Department.
3. Provide transcripts of all college level credits. This is in addition to any transcript submitted to the University Admissions Office.

For detailed information write the Coordinator, B.F.A. Program, Art Department.

Note: Requests for admission to Art Department programs exceed the capacity to accommodate. Therefore, prospective students are urged to file applications during the initial filing period listed in the "Admission to the University" section of this *Bulletin*.

Programs of Specialization: Course Requirements

1. Drawing and Painting. *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.
2. Printmaking. *Lower Division:* Art 111, 112A, 112B, 121, 131, 181, 184, 187, 277, 161 or 281, two units of art electives. *Upper Division:* Art 320, 378, 379, 477A, 477B, 478A, 478B, 499R; Art 317A or B and three additional units of art history; Art 318, 384A and seven additional units of art outside specialization.

3. Sculpture. *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.
4. Illustration. *Lower Division:* Art 111 or 161, 112A, 112B, 121, 131, 181, 184, 187, 223, 271, 284. *Upper Division:* Art 320, 371A, 371B, 372, 373, 471A, 471B, 490 or 499F; six units of art history; Art 323A, 323B, 385A, 387A and three additional units outside specialization.
5. Graphic Design. *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; Art 331A, 341A, 371A, 385A.
6. Interior Design. *Lower Division:* Art 111 or 161, 112A, 112B, 121, 131, 181, 184, 187, 224, 237, 271. *Upper Division:* Art 320, 341A, 341B, 342A, 342B, 343, 441A, 441B, 499H; Art 418 and three additional units of art history; 11 units of art outside specialization which must include Art 322A or 331A, 327A or 385A, 332, 417.
7. Textile Design. *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, 419, 428A, 428B, 428C; six units of art history; Art 418 and nine units of art outside specialization.
8. Ceramics. *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.
9. Metalsmithing and Jewelry. *Lower Division:* Art 111 or 161, 112A, 112B, 121, 131, 181, 184, 187, 271; Industrial Arts 101, 282. *Upper Division:* Art 320, 357A, 358A, 357B, 358B, 458A, 458B, 499J; six units of art history; 12 units of art outside specialization

Major in Art for the Bachelor of Arts Degree (Art History)

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 selected from 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 humanities except art with adviser's approval; three units of art electives.

Major in Art for the Bachelor of Arts Degree (Teacher Preparation)

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). For information concerning requirements for the B.A. program, as well as the fifth year for the credential, consult the art education faculty.

Bachelor of Science Degree in Industrial Design

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, 237, 271; Industrial Arts 101, 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.

Master of Arts Degree in Art

Master of Fine Arts Degree

Programs of study leading to the master of arts degree in art and master of fine arts degree are offered. For detailed information concerning requirements see the *Graduate Bulletin*.

Lower Division

100. Introduction to Art Studio (3) F, S Staff
Visual and structural concepts through studio experiences in color, drawing, painting, design and three-dimensional form. Not open to students who have had Art 121, 131, 187 or equivalent. Designed for non-art majors.

110. Introduction to Art (3) F, S Staff
Media, methods of analysis and stylistic development in the visual arts. A lecture course with field trips. Not open for credit to art majors.

111. Fundamentals of Art (2) F, S Staff
Comparative study, through lecture, discussions and readings, of the considerations which are basic to an understanding of art and its relation to society.

112A,B. History of Western Arts: Survey (3,3) F, S Staff
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 Oriental Art: Survey (3,3) F, S Staff
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 Staff
Investigation and problems in the organization of two-dimensional visual phenomena.

131. Three-Dimensional Form (3) F, S Staff
Prerequisites: Art 121, 181. Investigation and problems in the organization of three-dimensional phenomena.

151. Beginning Ceramics (2) F, S Staff
Handbuilding techniques used in the design, forming, glazing and firing of ceramic materials.

161. Beginning Life Sculpture (2) F, S Staff
Prerequisites: Art 181, 184. Modeling based on the human figure.

181. Beginning Drawing (3) F, S Staff
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 Staff
Prerequisite: Art 181. Drawing from the human figure.

187. Beginning Painting (3) F, S Staff
Prerequisites: Art 121, 181. Introduction to painting problems using opaque media.

213. Comparative Art: Western/Non-Western (3) F, S Staff
Comparison of art theory and aesthetics in Western and non-Western cultures.

223. Lettering (2) F, S Staff
Prerequisites: Art 121, 181. Theory and techniques of lettering.

224. Perspective (2) F, S Staff
Use of measuring devices and the mechanical development of volume, space and shadow projection.

237. Applied Design (2) F, S Staff
Prerequisites: Art 121, 131, 181 or 224. Form in design and an introduction to the varying applied aspects of design.

251. Intermediate Ceramics (2) F, S Staff
Prerequisite: Art 151. Ceramic materials and design emphasizing the use of the potter's wheel to develop forms.

263. Beginning Sculpture (2) F, S Staff
Prerequisites: Art 121, 131, 181. Principles of sculpture.

271. Rendering (2) F, S Staff
Prerequisites: Art 121, 181. Graphic visualization for convincing representation.

277. Beginning Printmaking (2) F, S Staff
Prerequisites: Art 121, 181, 184. Fundamental printmaking processes.

281. Intermediate Drawing (2) F, S Staff
Prerequisite: Art 181. Drawing in various media with emphasis on space and form.

284. Intermediate Life Drawing (2) F, S Staff
Prerequisites: Art 181, 184. Drawing from the human figure.

287. Beginning Life Painting (2) F, S Staff
Prerequisites: Art 184, 187. Painting from the figure.

Upper Division

320. Issues in the Arts (2) F, S Staff
Comparative examination, discussion and study of major issues in the arts with special emphasis on issues that face the artist in our contemporary society.

445. Museum-Gallery Practices (3) F, S Glenn
Prerequisite: 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. Limited to nine units.

489. Special Topics in Visual Art (1-3) On demand Staff
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) On demand Staff
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) On demand Staff
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.

Art Education

300. Child Art (3) F, S Staff
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 Staff
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.

304. Art in Recreation (2) F, S Archer
Prerequisite: Art 100. Creative use of art materials for recreational programs and leisure activities.

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.

400. Advanced Art Studio (3) F, S Staff
Prerequisite: Art 100. Advanced studio experience in color, drawing, painting, design and three dimensional form.

402. Concepts in Art Appreciation (2) F, S Schultz
Techniques for promoting the study of the visual arts in relation to visual/tactile perception, creative art expression, art heritage and aesthetic judgment.

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 Staff
Experiece 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 Staff
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 Staff
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.

408. History and Philosophy of Art Education (2) F, S Purcell
Study of the historical and philosophical background of the teaching of art in the schools of America.

499P. Special Studies in Art Education (3) F, S Staff
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, 1975 and alternate years Greer
History of Greek and Roman art: 1000 B.C.-300 A.D.

311. Early Christian and Byzantine Art (3) F, 1975 and alternate years Martel
Arts of Southern Europe from decline of Roman Empire through Byzantine Empire to 1200.

312. Ancient Art (3) F, 1976 and alternate years Greer
Prehistoric, Near Eastern, Egyptian and Aegean art.

313A,B. Medieval Art (3,3) F, S, 1976-77 and alternate years Martel
Art 313A: Arts of Northern Europe from Merovingian through the Romanesque periods; 313B: 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, 1300-1500.

314C. Renaissance Art (3) S, 1976 and alternate years Greer
High Renaissance and Mannerist art of the 16th Century in Europe.

315A,B. Baroque and Rococo Art (3,3) F, S, 1975-76 and alternate years 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 Staff
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 1975-76 and alternate years Covell
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) F, 1975 and alternate years Slayman-Jones
Art of Sub-Saharan Africa.

411B. Primitive Art (3) S, 1976 and alternate years Slayman-Jones
Oceanic art.

411C. Primitive Art (3) S, 1977 and alternate years Slayman-Jones
North American Indian art.

413A,B. North American Art (3,3) F, S Gross
Art 413A: Art of the United States from the Colonial period through the Civil War; 413B: from the Reconstruction period to the present.

414. Post-Conquest Art of Latin America (3) F, 1975 and alternate years Staff
Arts of Central and South America from the Spanish conquest 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) S, and alternate years 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, 1976 and alternate years Aall
Islamic art and architecture of Persia and its transformation in India during the Mughal period.

494A,B. Japanese Art (3,3) F, S, 1976-77 and alternate years Covell
Art 494A: The art of Japan from 10,000 B.C. to end of Kamakura Period 1185 A.D.; 494B: From the Muramachi 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 Staff
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in art history. Limited to six units.

Ceramics

351A-B. Ceramic Processes (3,3) F, S Youry
Prerequisites: Art 131, 251. Design problems with ceramic materials emphasizing wheel thrown forms.

352A-B. Technical Ceramics (3,3) F, S Ramsey
Prerequisite: Art 251. The nature of raw materials as they relate to the development of clay bodies and ceramic glazes, and 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 351 B. 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 Staff
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 Staff
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in display and exhibition design. Limited to six units in one semester and a total of nine units.

Drawing and Painting

380. Painting for the Non-Art Major (3) F, S Staff
Prerequisite: Art 100. Work with various painting media indoors and on location. Not open for credit to art majors or art minors.

381. Drawing (3) F, S Staff
Prerequisite: Art 181. Problems and concepts in drawing using a variety of media.

384A-B. Advanced Life Drawing (3,3) F, S Staff
Prerequisite: Art 284. Continued study in drawing from the human figure.

385A-B. Watercolor Painting (2,2) F, S Staff
Prerequisites: Art 121, 181, 187. Nature and use of the water color media.

387A-B. Painting (3,3) F, S Staff
Prerequisites: Art 121, 181, 187. Painting with emphasis on representation, organization and expression.

389. Materials and Craft of Drawing and Painting (2) (F, S) Staff
Prerequisites: Art 121, 181, 387A. Theory and practice in the craft of drawing and painting.

487A-B. Advanced Life Painting (3,3) F, S Staff
Prerequisites: Art 287, 37 387A.

499D. Special Studies in Drawing (3) F, S Staff
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervison on individual problems in life drawing. Limited to six units in one semester and a total of nine units.

499I. Special Studies in Life Drawing (3) F, S Staff
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 Staff
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.

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.

Graphic Design

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

323A-B. Graphic Design Production Processes (3,3) F, S Turnbull
Prerequisites: Art 121, 181, 223. Printing processes relative to the needs of the graphic designer from typographic design to reproduced form.

324A-B. Film Animation (2,2) F, S VanEimeren
Prerequisite: Consent of instructor by drawing portfolio. Design and production of color, super 8 mm and sound synchronized 16 mm animated films.

325. Packaging Design (2) F VanEimeren
Prerequisites: Art 322B, 323B. Materials, processes and the design of packaging and point-of-sales pieces.

422A-B. Advanced Graphic Design (3,3) F, S VanEimeren
Prerequisites: Art 322B, 323B.

499S. Special Studies in Graphic Design (3) F, S Staff
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 Kollar, Oden
Prerequisites: Art 111, 112A,B, 121, 131, 161, 181, 184, 187. Creative magazine and book illustration.

372. Anatomy for Artists (2) F, S Mendez, Oden
Prerequisites: Art 181, 184. Skeletal and muscle structure emphasizing the development of skill in depicting the human figure.

373. Fashion Illustration (2) S Kollar, Staff
Prerequisites: Art 371A, 372. Fashion drawing for reproduction.

374A-B. Biomedical Rendering (3,3) F, S Oden
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 Kollar, Oden
Prerequisite: Art 371B.

499F. Special Studies in Illustration (3) F, S Oden
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 semester and a total of nine units.

Industrial Design

330A-B. Industrial Design Technology (2,2) F, S Staff
Application of design principles to specific problems in the fields of industry. Not open to art majors or art minors.

331A-B. Industrial Design (2,2) F, S Kammermeyer
Prerequisites: Art 121, 131, 181 or 224; Art 331B: Art 237, 271. Planning and design of useful products for industrial production.

332. Rapid Visualization (2) F, S Myers
Prerequisites: Art 181, 224, 271 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 (2,2) 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, 271, 332, consent of instructor. Advanced idea generation and visualization for industrial design.

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.

499G. Special Studies in Industrial Design (3) F, S Staff
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) F, S Brisker, Staff
Prerequisites: Art 112A,B, 121, 131 and 181 or 224; 341B: 224, 271. 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 Staff
Prerequisites: Art 121, 131, 181, 187, 224, 271. Drawing, rendering and techniques of graphic expression for interior designers. Includes working drawings.

343. Materials of Architecture and Interiors (3) F Staff
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, Staff
Prerequisites: Art 341B, 342A-B or consent of instructor. Advanced design and space planning problems emphasizing relationships between the environment and human factors in design.

499H. Special Studies in Interior Design (3) F, S Brisker, Staff
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.

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.

Printmaking

378. Intaglio and Relief Printmaking (3) F, S Swift
Prerequisites: Art 121, 181, 184. The intaglio process of etching, drypoint, aquatint and the relief processes of woodcut, linocut and collograph.

379. Lithography and Serigraphy (3) F, S Staff
Prerequisites: Art 121, 181, 184. Black and white and color lithography and silk screen processes.

477A-B. Advanced Intaglio and Relief Printmaking (3,3) F, S Swift, Staff
Prerequisite: Art 378.

478A-B. Advanced Lithography and Serigraphy (3,3) F, S Swift, Staff
Prerequisite: Art 379.

499R. Special Studies in Printmaking (3) F, S Swift, Staff
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 Harris, Werlick
Prerequisite: Art 161. Sculpture based on the human figure.

362A-B. Sculpture Processes (3,3) F, S Glenn, Harris, Werlick
Prerequisites: Art 161, 263. Traditional and non-traditional sculpture processes.

363. Sculpture (3) F, S Glenn
Prerequisite: Art 362A or B. Composition in sculpture.

461. Advanced Life Sculpture (3) F, S Werlick
Prerequisites: Art 361, 362A or B.

463. Advanced Sculpture (3) F, S Glenn
Prerequisites: Art 361, 362A,B, 363.

499M. Special Studies in Sculpture (3) F, S Glenn, Harris, 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
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 Leland
Prerequisites: Art 121, 131, 161, 187. Concepts and development in non-loom fiber structure.

428A-B-C. Weaving (3,3,3) F, S Leland
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.

Theatre Design

347A-B. Theatre Design (2,2) F, S Merlino
Prerequisites: Art 112A,B, 121, 131, 181, 187. Sets, costumes and properties for the contemporary theatre in education.

4990. Special Studies in Theatre Design (3) F, S Merlino
Prerequisite: Consent of instructor. Opportunity for extensive work with faculty supervision on individual problems in theatre 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)

599. Studio Problems in Art (3-12)

601A-B. Seminar in Art Education (3,3)

611. Seminar in Art History (3)

690. Graduate Seminar (3)

692. Public Exhibition (2)

694. Directed Studies-Studio (1-3)

695. Field Problems in Art (1-6)

696. Research Methodology (2)

697. Directed Studies (1-3)

698. Thesis or Project (1-6)

699. Thesis or Project (1-6)

Dance

Department Chairman: Mrs. Celeste Kennedy.
Associate Professors: Hamilton, Schlaich.
Assistant Professor: Kennedy.
Credential Adviser: Mrs. Joan Schlaich.
Academic Advising Coordinator: Mrs. Celeste Kennedy.

The Dance Department provides an in-depth program of studies with emphasis on the areas of 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 dance specialist; performer in dance companies, on television or in dance films; or a choreographer for companies or films. The curriculum gives the general education student and the student in closely related areas experience in dance as an art form.

The part-time faculty includes Christine Bigelow, Rebecca Bobele, Antonia Ellis, Donald Hewitt, Carlton Johnson, Gloria Newman, Jack Payne, Betty Walberg and Carol Warner.

A major in dance is not offered at this time but one is being proposed. Students interested in a special major in dance should see the Special Programs section of this *Bulletin*. Contact the Dance Department for further information.

Minor in Dance

Lower Division: Dance 112A, 112B, 114A, 220A.

Upper Division: Dance 320A, 331, 441, 488 and a minimum of two units selected from Dance 180A,B, 380A,B.

Teaching Credential

See adviser.

Technique

Lower Division

112A,B. Modern Dance Technique I, II (2,2) F, S Staff
Basic skills and techniques of modern dance. Dance 112A is not open to students with credit in Dance 107; Dance 112B is not open to students with credit in Dance 109. (Activity 4 hours.)

114A,B. Ballet Technique I, II (2,2) F, S Staff
Basic skills and techniques of ballet. Dance 114A is not open to students with credit in Dance 108; Dance 114B is not open to students with credit in Dance 305. (Activity 4 hours.)

116A,B. Jazz Technique I, II (2,2) F, S Staff
Basic theory and practice of modern jazz dance. Dance 116A is not open to students with credit in Dance 303; Dance 116B is not open to students with credit in Dance 403. (Activity 4 hours.)

118A. Ethnic Dance Forms (3) F, S Staff
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.)

162. Introduction to Dance for the Theatre (2) F, S Hamilton
Fundamentals of movement theories and techniques with direct application to stage movements.

212A,B. Modern Dance Technique III, IV (2,2) F, S Staff
Prerequisite: Dance 112A. Increased skill in the techniques of modern dance. Dance 212A is not open to students with credit in Dance 210; Dance 212B is not open to students with credit in Dance 211. (Activity 4 hours.)

Upper Division

312A,B. Modern Dance Technique V, VI (2,2) F, S Staff
Prerequisite: Dance 212B. Increased skill in the technique of modern dance. (Activity 4 hours.)

314A. Ballet Technique III (2) F Staff
Prerequisite: Dance 114B. Advanced skills in the techniques of ballet. (Activity 4 hours.)

316. Jazz Technique III (2) F Staff
Prerequisite: Dance 116B. Advanced theory and practice in jazz dance. (Activity 4 hours.)

462. Advanced Dance Movement for the Theatre (2) F, S Hamilton
Prerequisite: Dance 162. Movement, modern dance and choreography for the actor, teacher and director of theatre arts and musical theatre.

Composition

Lower Division

120A. Improvisation (2) F Hamilton
Use of improvisation as an introduction to structural form; individual and group problems. (Activity 4 hours.)

220A. Elements of Choreography (3) F Schlaich
Prerequisite: Basic dance course. Theory and practice in the basic elements of dance composition. Not open to students with credit in Dance 220. (Lecture 1 hour, activity 4 hours.)

Upper Division

320A. Solo and Small Group Composition (3) S Kennedy
Prerequisite: Dance 220A. Development of theme and style in solo and small group studies. Not open to students with credit in Dance 320. (Lecture 1 hour, activity 4 hours.)

Production

Lower Division

180A,B. Dance Performance (1,1) F, S Staff
Participation in University-sponsored dance concerts. Some concert participation is by audition only.

Upper Division

380A,B. Dance Performance (1,1) F, S Staff
Participation in University-sponsored dance concerts. Some concert participation is by audition only.

488. Organization of Dance Production (3) S Staff
Prerequisite: Minimum of nine units of dance. Analysis and practice in the production elements of dance concerts. Course is coordinated with student concert.

General

Upper Division

331. Music for Dance (3) F Abeling
Prerequisite: Dance 112A. 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.)

350A,B. Dance Notation I, II (3,3) F, S Kennedy
Theory and practice of notating movement. Dance 350A is not open to students with credit in Dance 350. (Lecture 1 hour, activity 4 hours.)

441. History of Dance (3) S Schlaich
History of dance from primitive to contemporary times. Cultural importance of dance as an art form.

469. Long Beach Summer School of Dance (6) SS DuPont, Kennedy, Schlaich
Comprehensive course in dance offering students an opportunity to work with professional artists. Includes theory and practice in dance areas from beginning to advanced levels. May be repeated to a total of 18 units.

485. Contemporary Dance and the Fine Arts (3) F Staff
Advanced theory and practice relating contemporary dance to the fine arts.

490. Special Topics in Dance (1-3) F, S Staff
Prerequisite: Consent of instructor. Topics of current interest in the field of dance 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. Directed Studies in Dance (1-3) S Staff
Prerequisite: Consent of instructor. Independent projects and research of advanced nature in any area of dance.

Music

Department Chairman: Dr. Gerald R. Daniel.

Emeriti: Russell N. Squire, Gerald Strang, Henri Temianka.

Professors: Anderson, Becker, Curtis, Dallin, Daniel, Gibson, Helm, Lampl, Musafia, Neiswender, Pooler, Stroud, Tyndall, Winslow.

Associate Professors: Andrus, Rayner, Sindelar.

Assistant Professors: Crockett, Matthews, Norman, Thompson.

Lecturers: Prince, Roskam, Wilson.

Credential Adviser: Dr. Robert Anderson.

Academic Advising Coordinator: Dr. Gerald Daniel.

The 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 placement tests and auditions which are normally administered at the beginning of registration week. Each entering student should inquire at the Music Office for the details.

Each music major must declare a specialization in some performance area (voice, piano or other 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.

Participation, with or without credit, in one of the principal performance organizations (Choral Organizations, Symphony 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 the National Association of Schools of Music. The bachelor of music and the bachelor of arts degrees in music are accredited by the association.

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 plus 2 additional units from Music 460, 461, 462, 463, 464, 465, 466, 490); music theory (Music 141A-B, 142A-B, 241, 341, 342); music performance (Music 100, 300—at least one unit each semester in residence); keyboard proficiency (equivalent to Music 220B); semester recital (Music 020—each semester in residence); senior project (Music 428).

Options:

History and Literature. Required: performance level of grade 8 in piano or grade 6 in other performance mediums, Music 393, 469, 490, 2 units of studies in library resources and research elected as Music 499 by advisement. Elect 10 units from Music 460, 461, 462, 463, 464, 465, 466; may elect additional units from Music 429, 442, 444, 445, 491. Recommended general education courses: English 101, foreign language equivalent to 201A, art history, theatre history, history.

Composition. Required: performance level of grade 8 in piano or grade 6 in other performance media: Music 441, 442, 444, 445 (must be taken twice), 446, six units to be selected from Music 422, 452B, 429, 443, 491, 499.

Instrumental Music. (This option is intended for teaching credential candidates.) Music 429 (4 units); Music 425A, 425B, 442, 481, 482A, 482B; 10 units of individual instruments, Music 125/325, to be distributed by advisement over brass, woodwinds, strings and percussion. Required: performance level of grade 8.

Choral-Vocal Music. (This option is intended for teaching credential candidates.) Music 429 (4 units); Music 320 or 322, 327, 328, 421, 422, 426, 483A, 483B; 8 units selected from Music 130, 330, 425A, 425B, 442, 444, 460, 461, 462, 466. Required: performance level of grade 8.

Performance. Individual instruction required each semester in residence with an achievement of grade 10. Music 335 will replace this requirement in certain concentrations when offered and advised by the department.

Piano: Music 321, 431, 460; Music 200/400 (4 units); Music 335 (8 units in place of Music 429).

Organ: Music 421, 444, 461.

String Instruments: Music 425A, Music 200/400 (4 units); Music 335 (8 units in place of Music 429, when available).

Wind Instruments: 425A, 425B, 464, 465; Music 200/400 (4 units).

Voice: Music 328, 332, 421, 426, 432A,B, 462.

Opera: Music 328, 332, 421; Theatre Arts 231; Music 463 to complete core; 3 additional units selected from Theatre Arts 242, 244, 246, 362; Music 130/330 allowed for 4 units of activity credit.

Piano Accompanying: Music 326, 421, 431; Music 200/400 (4 units); Music 462 to complete core.

Major in Music for the Bachelor of Arts Degree

Lower Division: Music 020 (four semesters), 100 (four semesters), 141A-B, 142A-B, 241, 260, keyboard competency 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 semester of the senior project.

Master of Arts Degree in Music

A program of study leading to the master of arts degree in music is offered. For detailed information concerning requirements see the *Graduate Bulletin.*

Teaching Credentials:

See Instrumental Music and Vocal-Choral Music options under B.M. degree.

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 Staff
Recital attendance and performance on principal instrument or voice. Required of undergraduate music majors each semester.

100. Performance (1) F, S Staff
Prerequisite: Consent of instructor. Major performance groups, including a cappella choir, college 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 Staff
Technique, tone production, rhythm, sight-reading, interpretation and keyboard facility. Meets piano requirement for music majors and minors.

121A-B. Piano for Elementary Teachers (1,1) F, S Gibson
Techniques, rhythm, sight-reading, keyboard facility. Piano materials for the classroom teacher.

122A-B. Class Voice (1,1) F, S Staff
Fundamental technique of singing, tone production, voice placement, breathing, diction. Repertoire and song interpretation.

125. Instruments (1) F, S Staff
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 Staff
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 3 hours.)

141A-B. Musicianship (2,2) F, S Staff
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 Staff
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.

145. Fundamentals of Music (3) F, S Staff
Music reading and writing related to the special creative and performance interests of the students. Not open to music majors.

150. Introduction to Music Therapy (2) F, S Staff
Introductory information, orientation and history of music therapy for those considering music therapy as a career.

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 Staff
Fundamentals of music and essentials of music listening. Performance skills in singing and playing music.

190. Listener's Approach to Music (3) F, S Staff
Nontechnical course open to all students except music majors. Materials, forms and styles of music with extensive listening.

200. Performance (1) F, S Staff
Prerequisite: Consent of instructor. Specialized performance groups, such as madrigal singers, chamber music, brass or woodwind ensembles, string quartet, etc.

220A-B. Class Piano (1,1) F, S Staff
Continuation of 120A-B.

222A-B. Class Voice (1,1) F, S Staff
Continuation of 122A-B.

241. Counterpoint (3) F, S Staff
Prerequisites: Music 141B and 142B. Counterpoint in two, three and four parts.

250. Psychology of Music (3) F Staff
Introduction to the physical aspects of music with emphasis on psychological and perceptual responses to music. Primarily for music therapy majors but open to all music majors and psychology majors with music minor.

260. History of Music (3) F, S Staff
Primarily for music majors and minors, but open to others who read music. Chronological study of music from 1750 to the contemporary scene. Selected readings, recordings and scores intensively studied.

271. Improvisation Techniques I (2) F Staff
Basic techniques in improvisation, beginning with simple question and answer phrases and progressing to extended solos. Detailed and applied knowledge of chord progressions.

280. Music Theory for Classroom Teachers (3) S Anderson
Prerequisite: Music 120A-B or Music 180 or consent of instructor. Scale and chord construction, melodic and harmonic design, rhythmic analysis; keyboard applications; original writing of simple song forms.

281. Community and Recreational Music (2) F, S Neiswender
Singing for enjoyment. Survey, singing and directing of song materials used in camps, scouting, schools, church youth groups, banquets. Techniques of song leading.

290. Music in General Culture (3) F, S Stroud
Artistic and socio-economic bases of music in the contemporary scene with emphasis on Southern California. Not open to music majors.

Upper Division

300. Performance (1) F, S Staff
Prerequisite: Consent of instructor. Major performance groups, including a cappella choir, college chorus, women's chorus, band, orchestra, etc. (See note on music performance.)

301. 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).

320. Intermediate Piano (2) F, S Staff
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) S Neiswender
Prerequisite: Music 222B or consent of instructor.

324. Introduction to Organ Technique (2) F Stroud
Prerequisite: Music 220B or consent of instructor. Acquaints pianists with organ-playing technique; registration, pedal technique, repertoire; performance of simple compositions, accompaniments and hymns.

325. Instruments (1) F, S Staff
See Music 125. May be repeated for credit.

326. Piano Accompanying (2) 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. Not open to students with credit in Music 228. (Lecture 1 hour, laboratory 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 Staff
Prerequisites: Music 142B, 241. Small, large, multimovement, variation, and contrapuntal forms in instrumental and vocal music.

342. Materials of Modern Music (3) F, S Staff
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 Staff
Study of music as a form of human behavior and the fundamental constructs for the use of music as a therapeutic medium.

360. History of Music (3) F, S Rayner
Primarily for music majors and minors, but open to others who read music. Chronological study of music from antiquity to 1750. Selected readings, recordings and scores intensively studied.

370. Recording and Electronic Techniques (2) S Staff
Technique of the preparation and recording of music and the study of electronic recording and musical equipment.

371. Improvisation Techniques II (2) S Staff
Continuation of Music 271.

372. Jazz Harmony and Analysis (3) F Staff
Basic techniques of writing and analyzing jazz harmony.

380. Elementary Music Education (3) F, S Gibson
Prerequisite: Music 142A or Music 180. Psychological principles and sequence of music learning. Music literature and its relation to aural experience, kinesthetic sensitivity, performance skill, and the development of creativity. Recommended for the Elementary Credential candidate. Not open to music majors.

381. Foundations of Music Education (3) F, S Gibson
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 and minors only. Required for elementary student teaching in music.

382. Children's Literature in Music (2) F, S Staff
Music materials designed for children's listening and singing, together with principles of presentation.

383. Problems in Elementary School Music (2) SS Gibson
Prerequisite: Music 380 or 381 or consent of instructor. Procedures and materials used in elementary school music. Specific projects based upon individual needs.

385. Musical Concepts (3) On demand Staff
Prerequisite: Music 180. Effects and interrelations of melody, rhythm, harmony and form in the music of various periods and cultures. Advanced applications through reading, writing, performing and listening to music.

386. Music for Early Childhood (3) F, S Gibson
Prerequisite: Music 180 or consent of instructor. Comprehensive analysis of music materials and activities suitable for early childhood.

390. Music in Western Civilization (3) F, S Helm
Music from the Renaissance to the present; lectures, readings and listening. Not open to music majors.

393. Jazz, An American Music (3) F, S Helm
Studies from recordings, readings and live performances, the formative influences of jazz and its historical development up to the present. Musical style in jazz compared to that of other music and to other concepts of form in art.

394. Classical Music of India (3) F Rao
Theory and practice of the music of India. Religious chants, classical ragas, dances and folk songs. Ensemble sessions with Sitar, Tabla, Tanpura and Voice.

400. Performance (1) F, S Staff
Prerequisite: Consent of instructor. Specialized performance groups, such as 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 instructor. Principles and techniques of choral conducting and organization. Study and interpretation of choral materials, using the class as a laboratory group. Three periods per week.

422. Advanced Choral Conducting and Literature (2) S Pooler
Prerequisite: Music 421 or consent of instructor. Choral technique, style and interpretation; choral schools and composers since the 16th Century; contemporary secular and sacred choral compositions. Class used as laboratory group.

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 Staff
Three hours weekly. (425A not open to students with credit in Music 420.)

426. Vocal Pedagogy (2) F Neiswender
Prerequisite: Consent of instructor. Theory and techniques of teaching voice.

428. Senior Project (0) F, S Staff
Standard literature for solo instrument or voice and performance of a balanced program in solo recital or a written project in certain options in the bachelor of music degree. Enrollment restricted to music majors passing the qualifying examination.

429. Individual Instruction for Music Majors (1) F, S Staff
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 Neiswender
Prerequisite: Voice major or consent of instructor. Selecting and preparing song literature for public performance. Coaching in languages, musical style and vocal techniques.

441. Studies in Musical Analysis (2) F Staff
Prerequisite: Music 341. Intensive individual and class analysis of representative compositions of various periods and styles.

442. Instrumentation (3) F, S Staff
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 Staff
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 Staff
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 Staff
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 electronic devices.

450. Therapy Orientation (2) F Staff
Introduction to hospital procedure and role of the music therapist and the various disciplines in the hospital milieu.

451. Music in Therapy (3) S Staff
Basic approaches and techniques of music therapy applied in mental health programs. Clinical uses of music in psychiatric settings, mental retardation centers and hospitals for the physically disabled will be studied.

460. Keyboard Literature (2) S Musafia
Prerequisite: Music 360 or Music 390 or consent of instructor.

461. Organ Literature (2) S Stroud
Prerequisite: Music 360 or Music 390 or consent of instructor. Organ music from the Renaissance to the present.

462. Song Literature (2) S Neiswender
Prerequisite: Music 360 or Music 390 or consent of instructor. Music for solo voice composed after 1600. Vocal proficiency not required.

463. Music of the Theater (2) F Lampl
Prerequisite: Music 360 or Music 390 or consent of instructor. History and development of music for the stage from 1600 to the present, its conventions and styles. Analysis of representative masterworks.

464. Chamber Music Literature (2) S Staff
Prerequisite: Music 360 or Music 390 or consent of instructor. Music for various instrumental ensembles representative of various periods and composers.

465. Symphonic Literature (2) F Rayner
Prerequisite: Music 360 or Music 390 or consent of instructor. Symphony and symphonic poem from their inception to the present time.

466. Church Music (2) F Stroud
Prerequisite: Music 360 or Music 390 or consent of instructor. History of western church music, noting its roots in the Jewish and Greek cultures. Concludes with a survey of church music of the United States.

469. Music in the Humanities (2) S Odd 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. Commercial Arranging (3) S Staff
Arranging and scoring for the various types of commercial ensembles in the styles demanded by contemporary performance practices.

480. Marching Band Techniques (2) F Curtis
Marching fundamentals, charting formations, precision drills, parade technique and half-time pageantry.

481. Instrumental Organization and Literature (3) S Curtis
Procedures for organization and development of instrumental programs and literature for performing groups.

482A,B. Instrumental Music Laboratory (1,1) F, S Curtis
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.

489. Special Topics in Music Education (1-3) F, S Staff
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 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, Physics 104, 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 Staff
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 Staff
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 Instrumental Conducting (3)

541. Studies in Homophonic Music (3)

542. Studies in Polyphonic Music (3)

561. Music of the Renaissance (3)

562. Music of the Baroque Period (3)

563. Music of the Classic Era (3)

564. Music of the Romantic Era (3)

565. Twentieth Century Music (3)

580. Studies in Contemporary Music Education (3)

581. Studies in Elementary School Music (3)

582. Studies in Secondary School Music (3)

641. Seminar in Musical Analysis (3)

645. Seminar in Advanced Composition (3)

680. Seminar in Instrumental Music Teaching (2)

681. Seminar in Choral Music Teaching (3)

696. Research Methods (3)

698. Thesis or Project (2-6)

Theatre Arts

Department Chairman: Mr. Ralph W. Duckwall.

Emeritus: Edward A. Wright.

Professors: Camburn, Duckwall, Green, Kahan, MacArthur, Stiver, Watts.

Associate Professors: Bailor, Eggers, Lyman, Rugg, Shoup.

Assistant Professors: Crellin, Hunt, Peachy, Rankin, Skalka, Smith.

Credential Adviser: Dr. Jerry Bailor.

Academic Advising Coordinator: Mr. Ralph W. Duckwall.

The Department of Theatre Arts offers three basic programs leading to the bachelor of arts degree with opportunities for options in performance (acting/directing), technical theatre (scenery/costume/lighting design) and children's theatre. Each program provides appropriate background for its respective teaching credential at the elementary or secondary level. Each program will 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 student needs in four principal areas: (1) Enrichment of the student's liberal arts background through the development of appreciations and insights derived from theatre arts courses taken as general education electives. (2) Preparation for the teaching profession on the elementary, secondary, community college, and college levels. Students may elect either a teaching major or minor in theatre arts which is fully recognized as an academic area for teacher preparation. (3) Development of interests and skills that will offer the student life-long satisfactions as an avocational outlet. (4) Preparation for the professions of director, technical director, scene designer and performer in the community theatre, recreational theatre, children's theatre, educational theatre and professional theatre. Several course offerings in theatre and dramatic literature are available jointly with the Comparative Literature Department. These courses cover the full range of world drama from both the viewpoint of theatre and dramatic literature.

All majors are required to participate with or without credit in the departmental production program each semester. Furthermore, majors enrolled in any acting course are expected to be available, try out and participate in departmental productions in that semester. Majors are also expected to seek approval from their advisers before making any commitment to a theatre program which lies outside of the departmental academic atmosphere.

The Department of Theatre Arts has extensive library resources available for students including the entire library of the Pasadena Playhouse, a collection

consisting of approximately 5,400 scripts and books. The rare book department of the University Library houses for departmental use rare costume and scenic designs, outstanding Oriental theatre materials, period theatrical posters and rare manuscripts. Also, a compilation of over 1,400 authentic period costumes including 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.

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 112, 114, 124, 242, 244, 246; Dance 162.

Upper Division: Theatre Arts 321, 322, 346, 348, 374, 476. Theatre Arts 010 (no unit credit) is required each semester of enrollment.

No more than 8 units of theatre arts activity (cast and/or crew) will apply toward degree requirements.

Option in Performance: Acting/Directing

Theatre Arts 214, 216A or B or 316A or B, 426, 432, 443 and 9 units of approved electives selected from Theatre Arts 231, 310A,B, 312, 318, 361, 363, 375, 414, 416, 431, 470A,B, 474 and 498.

Option in Technical: Scenery/Costume/Lighting Design

Theatre Arts 341, 347, 444, 446, 448 and 8 units of approved electives selected from Theatre Arts 342, 440A,B, 443, 445, 447, 470A,B.

Option in Children's Theatre

Theatre Arts 352, 353, 354, 356, 358, 452, 459A or B and 6 units of electives.

Master of Arts Degree in Theatre Arts

A program of study leading to the master of arts degree in theatre arts is offered. For detailed information concerning the requirements see the *Graduate Bulletin*.

Lower Division

010. Theatre Arts Showcase (0) F, S Staff
Participation in weekly programs dealing with all aspects of theatre arts. Required of theatre arts majors each semester.

110A,B. Theatre Arts Activity—Cast (1,1) F, S Staff
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.

112. Stage Diction (3) F, S Staff
Theory and practice in developing command of oral techniques for stage.

113. Introduction to Acting (3) F, S Staff
Review of actors and acting, past and present; their work as artists; basic exercises in voice, diction, movement and personality projection. Open only to non-theatre arts majors.

114. Fundamentals of Acting (3) F, S Staff
Introduction to problems of acting; lectures, readings and exercises in developing and projecting a character through voice, emotion and physical movement.

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.

124. 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) F, S Staff
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 Staff
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 Staff
Prerequisites: Theatre Arts 112, 114. Advanced problems of acting; developing a character through emotional, vocal and bodily expression. Not open to students with credit in Theatre Arts 314.

216A,B. Rehearsal and Performance (2,2) F, S Lyman
Prerequisite: Theatre Arts 114 or equivalent. Preparation and rehearsal for performance in short scenes, one-act plays and University-sponsored productions; no more than four units of Theatre Arts 216 and/or Theatre Arts 316 may be applied toward the major.

231. Acting for the Musical Theatre (3) F Shoup
Prerequisite: Consent of instructor. Problems of performing in opera, operetta and musical comedy. Not open to students with credit in Theatre Arts 230A-B.

240A,B. Theatre Arts Activity—Crew (1,1) F, S Staff
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. One crew assignment required as practical experience on actual University-sponsored productions. May not be taken concurrently with Theatre Arts 246.

244. Stage Make-up (1) F, S Smith
Practical introduction to techniques of theatrical make-up. Male students must be clean-shaven because of the nature of the course. Crew assignment required in University-sponsored productions.

246. Costume Crafts (2) F, S Camburn, Crellin
Techniques of costume and accessory construction for the stage; use of fabrics, materials and equipment; crew assignment required in University-sponsored productions. (Not to be taken concurrently with Theatre Arts 242.)

270. Summer Theatre (1-6) SS Staff
Preparation, rehearsal and public performance of University-sponsored productions in an organized summer theatre similar to professional stock company; students devote full time in all phases of production. Amount of credit dependent upon amount of participation. Not more than eight units total credit in any combination of 270 and 470 may apply toward the B.A. degree.

Upper Division

310A,B. Theatre Arts Activity—Cast (1,1) F, S Staff
Prerequisite: Junior 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.

312. Advanced Stage Diction and Dialects (3) Even years Staff
Prerequisite: Theatre Arts 112 or equivalent. Advanced study and special problems in stage speech and a study of special dialects for the stage.

316A,B. Rehearsal and Performance (2,2) F, S Lyman
Prerequisite: Theatre Arts 114 or equivalent. Preparation and rehearsal for performance in short scenes, one-act plays and University-sponsored productions; no more than four units of Theatre Arts 216 and/or Theatre Arts 316 may be applied toward the major.

318. Introduction to Acting Styles (3) F, S MacArthur, Peachy, Shoup
Prerequisites: Dance 162, Theatre Arts 214, 216, 316A,B and/or consent of instructor. Practical analysis and exercises from period styles other than the realistic.

321. History of the Theatre and Drama to 1660 (3) F MacArthur
Development of theatre arts from primitive origins through Moliere.

322. History of the Theatre and Drama Since 1660 (3) S Bailor, MacArthur
Prerequisite: Theatre Arts 321 or consent of instructor. Development of theatre arts from the Restoration to the present.

324. World Theatre Today (3) S Lyman, Rugg
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 avant-garde movement of post World War I (Expressionism, Dada, Surrealism, the Absurd, Existentialism). (Same course as Comparative Literature 324.)

325. Asian Theatre and Drama (3) F Shoup
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 Comparative Literature 325.)

340A,B. Theatre Arts Activity—Crew (1,1) F, S Staff
Prerequisite: Junior 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.

341. Graphics for the Theatre (3) F Camburn
Interpretation of form, architecture, landscape, drapery and the costumed figure for the theatre designer through basic drawings, watercolor, gouache and mixed media. (No previous art training required.)

342. Advanced Technical Theatre (3) F, S Duckwall, Skalka
Prerequisite: Theatre Arts 242. Scene painting, scenic drafting, problems of rigging and mounting various stage productions. Supervision in the practical application of these elements in University-sponsored productions. Not open to students with credit in Theatre Arts 342A,B.

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.

348. 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; crew assignment required in University-sponsored productions.

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.

354. Theatre for Children (2) F, S Rankin
Problems of presenting plays for children; examination of organizations for children's theatre productions.

356. Puppetry (3) S, odd years Staff
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
Prerequisites: Dance 162, Theatre Arts 114, 361 or consent of instructor. Technique of classical mime. Use of the human body as an instrument for the expression of emotions, dramatic narrative and characterization.

374. Fundamentals of Play Direction (3) F, S Lyman, Stiver
Prerequisites: Theatre Arts 114, 124, 242, 246, Dance 162 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 Peachy, 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 Lyman
Creative writing for the stage.

410A,B. Theatre Arts Activity—Cast (1,1) F, S Staff
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. Advanced Acting (3) F, S MacArthur, Peachy, Shoup
Prerequisites: Theatre Arts 318 and/or consent of instructor. In-depth study of historical styles including the factors of costume, movement, socio-cultural attitudes and dramatic form.

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 Staff
Greek and Roman drama, in translation. (Same course as Comparative Literature 421.)

422. Renaissance Theatre and Drama (3) F Staff
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 Comparative Literature 422.)

423. Continental Drama to Ibsen (3) S Staff
European drama, in translation, from the Middle Ages to Ibsen, excluding British. (Same course as Comparative Literature 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 Staff
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 semester. (Same course as Comparative Literature 428.)

431. Directing for the Musical Theatre (3) F Shoup
Prerequisite: Consent of instructor. Direction and rehearsal of short scenes, one-acts and University-sponsored musical theatre productions. (Not open to students with credit in Theatre Arts 430A, formerly 166A.)

432. Lyric Theatre (3) F Kahan, Shoup
History and production techniques of musical theatre including the dramatic content and staging of the lyric drama: opera, operetta, ballet, musical comedy and musical drama.

433. Production of Musical Theatre (3) S Duckwall
Prerequisite: Consent of instructor. Analysis and practice in the production elements of design, costuming, setting and lighting for opera, operetta and musical comedy; crew assignment required in University-sponsored productions. (Not open to students with credit in Theatre Arts 430B.)

440A,B. Theatre Arts Activity—Crew (1,1) F, S Staff
Prerequisite: Senior 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.

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 scenic 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.

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 348 or equivalent. Techniques of designing lighting 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 Peachy, Staff
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 Peachy, Stiver
Prerequisites: Art 112A,B; Theatre Arts 322 or concurrent enrollment; Theatre Arts 346, 348, 414, 426; completion of Theatre Arts 375 or 359 with B or better and consent of instructor. Problems in styles of directing classic and contemporary drama and producing University-sponsored productions.

476. Theatre Management (3) F Eggers
Examination of administration, management and promotion of a producing theatre organization; practical application required in University-sponsored productions.

480. Advanced Playwriting (3) F Lyman
Prerequisite: Theatre Arts 380 or consent of instructor. Creative writing for the stage.

490. Special Topics in Theatre Arts (1-3) On demand Staff
Prerequisite: Consent of instructor. Topics of current interest in theatre arts selected 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 Staff
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 supervision. Limited to six units in any one area. Area will be designated by letter at time of registration as (a) acting, (b) directing, (c) costume, (d) scenery, (f) playwriting, (g) children's theatre, (h) theatre management, (i) dance, (j) theatre history, (k) theatre criticism, (m) makeup, (n) lighting.

Graduate Division

514. History and Theory of Acting (3)

524. Aesthetics of the Theatre (3)

542. Architecture of the Theatre (3)

570A,B. Ensemble Production Practicum (2,2)

574. History and Theory of Directing (3)

621A,B. Seminar in Theatre History and Dramatic Literature (3,3)

623A,B. Seminar in Contemporary Theatre (3,3)

626A,B. Seminar in Dramatic Theory and Criticism (3,3)

642A,B. Seminar in Theatre Decor (3,3)

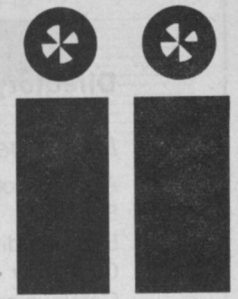
694. Advanced Studies in Theatre Arts (3)

696. Research Methods (3)

698. Thesis or Project (1-4)

School of Letters and Science

School of Letters and Science



Administrative Officers

Dr. Richard H. Wilde	Dean of the School	HOB-215
Dr. Dorothy M. Goldish	Associate Dean, Educational Policy	HOB-204
Dr. William H. Resch	Associate Dean, Fiscal Affairs	HOB-208
Dr. Charles W. Austin	Associate Dean, Faculty and Staff Affairs	HOB-201
Mr. Frank L. Costa	Assistant to the Dean	HOB-215

Directory of Departments

Department	*Chairmen*	*Dept. Offices*
Anthropology	Dr. Dorothy Libby	Psych. 145
Biology	Dr. Bruce E. Beekman	SC1-111
Black Studies	Dr. Skyne Uku	FO4-251
Chemistry	Dr. Roger D. Bauer	SC3-242
Communicative Disorders	Dr. June M. Cooper	LAB-112
Comparative Literature	Dr. John C. Jernigan	HOB-517
Economics	Dr. Simeon J. Crowther	Psych. 205
English	Dr. Helen C. Gilde	HOB-419
French-Italian	Dr. F. M. Swensen	SC2-112
Geography	Dr. John C. Kimura	LA4-105
Geological Sciences	Dr. Paul J. Fritts	SCE-115
German, Russian and Classics	Dr. Wilm Pelters	LA4-263
History	Dr. Eugene L. Asher	FO2-106
Journalism	Mr. M. L. Stein	LA4-206
Mathematics	Dr. Thomas A. McCullough	FO5-118
Mexican American Studies	Mr. Alejandro Osuna	FO4-274
Microbiology	Dr. Frank E. Swatek	SC2-212
Philosophy	Dr. Shane Andre	HOB-917
Physics-Astronomy	Dr. Dean Ayers	SC3-126
Political Science	Dr. Robert L. Delorme	FO5-104
Psychology	Dr. John R. Jung	Psych. 100
Radio and Television	Dr. B. Joe Langston	FA1-201
Social Welfare	Mrs. Erma L. Hutton	FO4-172
Sociology	Dr. Harold G. Hubbard	FO4-151
Spanish-Portuguese	Dr. Beverly DeLong-Tonelli	HOB-818
Speech Communication	Dr. Owen Jenson	HOB-717

Other School Offices

American Indian Studies	Dr. David Hood	FO4-175
American Studies	Dr. David Fine	HOB-619
Asian American Studies	Mr. Lloyd T. Inui	FO4-163
Asian Languages	Mr. Lloyd T. Inui	FO4-163
Community Psychology Clinic	Dr. Doris DeHardt	Psych.206
Linguistics	Dr. Janet Sawyer	Psych. 142
Religious Studies	Dr. Alexander Lipski	SC3-46
Speech and Hearing Clinic	Dr. Duane C. Craven	LAB-112

American Studies

Program Director: D. Fine (English).

Faculty Advisers: J. Buchanan (History), C. Gross (Art), M. Mendelman (Political Science), D. Peck (English), C. Pomeroy (English).

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

A minimum of 35 units distributed as follows:

Core Course Requirement: American Studies 300, 490, 498 (nine units).

Breadth Requirement: English 370A,B; History 477A,B (14 units).

Elective Pattern: Four courses from one of the following thematic sequences. No more than two shall be from any one department and at least two shall be upper division courses.

A. *American Institutions:* Criminal Justice 301 or 403; Economics 360 or History 475; History 479A,B, 489, Political Science 400, 405; Home Economics 312 or 413 or Sociology 320; Political Science 421; Political Science 423 or 430 or 440.

B. *The American People:* American Indian Studies 130 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, 304, 306; History 471A,B, 472, 474A,B; Sociology 419; Urban Studies 201 or 401; Economics 305 or Geology 305.

D. *The Arts and Communication in America:* American Indian Studies 132 or 333 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 100, 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 304, 316; Political Science 375.

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, reflecting a balanced and coherent program, must be approved by the program director before the student enrolls in the final 12 elective units.

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 Staff
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.*

498. Senior Colloquium in American Studies (3) On demand Staff
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 is open to seniors only.

Anthropology

Department Chairperson: Dr. Dorothy Libby.

Emeriti: Ethel E. Ewing, William J. Wallace.

professors: Dixon, Fenenga, Key, McCone, McCorkle, Osborne.

Associate Professors: Bates, Harman, Kershaw, Libby, Weide.

Assistant Professors: Eckhardt, Gregory, Lord, Shermis.

Lecturers: Kelly, Long.

Credential Adviser: Dr. Stewart Shermis.

Academic Advising Coordinator: Dr. Gretha Kershaw.

The 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 of 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.

Major in Anthropology for the Bachelor of Arts Degree

Lower Division: Anthropology 110, 120, 170; recommended, Anthropology 240, Sociology 100.

Upper Division: A minimum of 24 units in anthropology as follows: Anthropology 300, 301; six units of topical courses selected from Anthropology 303, 305, 306, 307, 403, 405, 411, 413, 414, 415, 416, 417, 419, 421, 496; three units of regional courses selected from Anthropology 321, 322, 323, 324, 325, 327, 331, 332, 333, 334, 336, 420; three units of physical anthropology selected from Anthropology 360, 361 or 363; three units of archaeological courses selected from Anthropology 341, 342, 345, 347; and three units of upper division elective courses selected in consultation with adviser.

Minor in Anthropology

The degree minor in anthropology requires a minimum of 20 units and must include:

Lower Division: Anthropology 110, 120.

Upper Division: Three units selected from each of the following combinations: (a) Anthropology 303, 305, 306, 307, 360, 361, 363, 403, 405, 411, 413, 414, 415, 416, 417, 419, 421, 496; (b) Anthropology 300, 321, 322, 323, 324, 325, 327, 331, 332, 333, 334, 336, 420; (c) Anthropology 341, 342, 345, 347; six units of anthropology electives.

Master of Arts Degree in Anthropology

Master of Arts Degree in Linguistics

Programs of study leading to the master of arts degree in anthropology and the interdisciplinary master of arts degree in linguistics are offered. For detailed information concerning requirements see the *Graduate Bulletin*.

Lower Division

100. General Anthropology (3) F, S Staff
General introduction to the fields of anthropology emphasizing the integration of both the biological and cultural fields of man. Especially recommended for non-majors.

110. Introduction to Physical Anthropology (3) F, S Staff
Origin and present nature of man; man's relation to other animals, heredity and principles of evolutionary change, 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 Staff
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.

170. Introduction to Linguistics (3) F, S Key
Nature of language; its 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.

240. Introduction to Archaeology (3) F, S Dixon, Fenenga, Weide
Contributions of archaeology toward understanding the growth and development of human cultures; survey of world-wide prehistory from the Old Stone Age to the Iron Age.

Upper Division

300. Peoples of the World (3) F, S Harman, Kershaw
Prerequisite: Anthropology 120 or consent of instructor. Cultures representing major world areas and different levels of development; emphasis on the interaction of environment, technology, social system and culture history. Not open to students with credit in Anthropology 230.

301. History of Anthropology (3) F, S Libby, Lord
Prerequisite: Anthropology 120 or consent of instructor. Growth of anthropology from the earliest times to the present. Various schools of thought and outstanding contributors and their works will be studied.

302. Quantitative Methods in Anthropology (3) F Bates
Prerequisites: High school mathematics and consent of instructor. Survey of sampling statistics with emphasis on anthropological data. Basic statistical measures, common sampling distributions, tests of hypotheses.

303. Social Anthropology (3) S Kershaw
Prerequisite: Anthropology 120 or Sociology 100 or consent of instructor. Introduction to the methods, aims and development of social anthropology. Not open to students with credit in Anthropology 220.

305. Comparative Religion: the Anthropological Approach (3) F Dixon, Eckhardt
Prerequisite: Anthropology 120 or consent of instructor. Variety of religious beliefs and practices in cultures throughout the world, analyzed from a broad comparative view of religion as a universal human institution, emphasis on the nature, meaning, and functions of religion in human society.

306. Pre-Industrial Technology (3) F, S Osborne
Recommended: Anthropology 120. Anthropological examination of the techniques used by man living at a less technologically evolved (primitive) level than ourselves, in making and using his tools, weapons, equipment. Stone, bone, wood, ceramics, early metal, weaving and other technologies; their origins and development.

307. Folklore (3) S Eckhardt
Prerequisite: Anthropology 120 or consent of instructor. Myths and tales of peoples of the world; the place of folklore in cultural life and its spread from one people to another.

321. Indians of North America (3) F Fenenga
Prerequisite: Anthropology 120 or consent of instructor. Introduction to the history, physical characteristics and cultures of the Indians north of Mexico.

322. Indians of California (3) S Fenenga
Prerequisite: Anthropology 120 or consent of instructor. Origin, physical characteristics, languages, history and cultures of the Indians of California.

323. Indians of Mexico and Central America (3) F, 1975 and alternate years Harman, McCorkle
Prerequisite: Anthropology 120 or consent of instructor. Cultural background and current economic, social and religious institutions of the Indians of Mexico and Central America.

324. Native Peoples of South America (3) S, 1976 and alternate years Eckhardt, Harman, McCorkle
Prerequisite: Anthropology 120 or consent of instructor. Origin and development of the peoples, technologies and social systems of the native American Indian cultures of South America. Acculturation and roles of native peoples in colonial and recent national contexts.

325. Contemporary Cultures of Latin America (3) F, 1976 and alternate years Harman, McCorkle
Prerequisite: Anthropology 120 or consent of instructor. Descriptive survey of the major Latin American cultural groupings; their conquest and colonial backgrounds and their emerging characteristics, with special attention to folk cultures and their relations to cultural change and national life.

327. Peoples of the Pacific (3) F, 1975 and alternate years Lord, Osborne
Prerequisite: Anthropology 120 or consent of instructor. Origins, prehistory, physical characteristics, languages and culture patterns of Oceania; influence of island ecology on the development of cultural patterns; trends in acculturation. Not open to students with credit in Anthropology 346.

331. Native Peoples of the USSR (3) S, 1976 and alternate years Libby
Prerequisite: Anthropology 120 or consent of instructor. Origins, physical characteristics, languages, environmental and historical influences on the development of cultural patterns, traditional cultures and modern development of peoples in the Soviet Union.

332. Cultures of China and East Asia (3) F, 1975 and alternate years Staff
Prerequisite: Anthropology 120 or consent of instructor. Development of traditional Chinese culture, its analysis, spread to surrounding areas, and the trends of modernization. Patterns of technology, social organization and configurations.

333. Cultures of India and Southeast Asia (3) S, 1977 and alternate years Staff
Prerequisite: Anthropology 120 or consent of instructor. Development of traditional Indian culture, its analysis, influence in surrounding areas and the trends of modernization. Patterns of technology, social organization and configurations.

334. Cultures of the Middle East (3) F, 1976 and alternate years Lord
Prerequisite: Anthropology 120 or consent of instructor. Development of traditional Moslem culture, its analysis and the trends of modernization. Patterns of technology, social organization and configurations.

336. Cultures of Africa (3) S, 1977 and alternate years Kershaw
Prerequisite: Anthropology 120 or consent of instructor. Origins, physical characteristics, languages, traditional cultures and acculturation problems of African peoples, south of the Sahara.

341. Prehistoric Cultures of Europe (3) S, 1976 and alternate years Osborne, Weide
Prerequisite: Anthropology 120 or 240 or consent of instructor. European archaeology from the earliest Stone Age; varying cultural adaptations to different environments, migrations of peoples, influences from Asia and Africa; problems of culture reconstruction from ancient remains.

342. Early Civilizations of the Old World (3) F, 1976 and alternate years McCone
Prerequisite: Anthropology 120 or 240 or consent of instructor. Interrelated growth of the civilizations of Egypt, Mesopotamia, India and the Mediterranean from agricultural villages to urban centers and empires; the significance of increasing complexity in social organization, technology, art and accumulation of knowledge.

345. Ancient Civilizations of Mexico and Central America (3) S, 1977 and alternate years Dixon
Prerequisite: Anthropology 120 or 240 or consent of instructor. Origin and growth of the Aztec, Maya, Inca and other civilizations of Mexico and South America with emphasis upon their changing social systems, economic patterns, art and intellectual achievements.

347. Prehistoric Cultures of North America (3) F, 1975 and alternate years Fenenga
Prerequisite: Anthropology 120 or 240 or consent of instructor. Origin, growth and prehistory of American Indian cultures north of Mexico; changing economic patterns through time; development of agriculture and changes in population densities.

360. Human Evolution (3) F, S Bates, Shermis
Prerequisite: Anthropology 110 or consent of instructor. Fossil evidence for human evolution with a consideration of the importance of cultural factors.

361. Human Variation (3) F, S Bates, Shermis
Prerequisite: Anthropology 110 or equivalent or consent of instructor. Influence of culture and environmental factors upon the composition and distribution of human populations. Genetic basis for human variation and the biological validity of the race concept.

363. Primate Studies (3) S Shermis
Prerequisite: Anthropology 110 or equivalent or consent of instructor. Description of the several spheres of primatology including gross morphology, taxonomy, phylogeny, behavioral studies and ecology. (Field trips scheduled to San Diego Zoo.)

403. Political Anthropology (3) S, 1977 and alternate years Gregory
Prerequisite: Anthropology 303 or consent of instructor. Discussion of the principles involved in political organization and law, emphasizing tribal and other traditional social systems.

405. Economic Anthropology (3) F, 1975 and alternate years Gregory
Prerequisites: Anthropology 300, 303. General principles underlying non-Western economic systems of production and distribution.

411. Personality and Culture (3) S McCone
Prerequisite: Anthropology 120 or consent of instructor. Relationships between cultural, social and personality factors in human behavior; development of personality in representative cultures; changing viewpoints in culture-personality studies.

413. Language and Culture (3) F, S Harman, Key
Prerequisite: Anthropology 120 or 170 or consent of instructor. Linguistic patterns and their relation to other aspects of culture, such as social organization and ways of thinking; use of native language in the study of culture.

414. Linguistic Anthropology (3) S McCone
Prerequisite: Anthropology 170 or structural linguistic courses from other departments. Language and linguistic methods for anthropological research in specific cultures. Application and use of these resources in research.

415. The Dynamics of Cultural Change (3) S Gregory, Harman
Prerequisites: Anthropology 120 and 300 or consent of instructor. Analysis of the processes of cultural change such as invention, diffusion and culture contact; the impact of Western civilization upon primitive and peasant cultures; emphasis on major theories and case studies of cultural change.

416. Urban Anthropology (3) F Kershaw
Prerequisites: Anthropology 300, 303, any two area courses or consent of instructor. Substantive and theoretical consideration of the anthropology of cities and urban societies with special reference to societies and nations in the process of modernization.

417. Applied Anthropology (3) F McCorkle
Prerequisite: Anthropology 120 or consent of instructor. Strongly recommended: Anthropology 415. Applications of anthropological theory, knowledge and skills to problems related to community development, education, medicine and public health with special reference to cross cultural problems.

419. Anthropology and Health (3) S Harman
Recommended: Anthropology 120. Medical beliefs and practices in diverse cultural settings; relation of health behavior to other areas of culture. Recommended for students in nursing and allied health fields.

420. American and European Societies: An Anthropological Approach (3) F Kershaw
Prerequisite: Anthropology 120 or other introductory social science course or consent of instructor. Study of modern communities in selected areas of America and Europe, the relationships of these communities to the larger environments within which they are placed, problems of plural and complex societies, networks and the application of modern anthropological theories to the study of these communities.

421. Anthropology and Education (3) F McCone
Prerequisite: Anthropology 120 or consent of instructor. Application of anthropological perspective and concepts to the understanding of the problems and processes of formal education. Role of culture in the motivation of learning in diverse ethnic groups and under conditions of rapid cultural change.

450. Field Methods in Archaeology (3) S Fenenga, Weide
Prerequisites: Anthropology 120 or 240 and consent of instructor. Locating and recording of archaeological sites. Methods of excavation and recording of field data. Excavation at a local archaeological site.

451. Analysis and Interpretation of Archaeological Data (3) F Fenenga, Weide
Prerequisites: Anthropology 120 or 240 and consent of instructor. 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. Methods in Ethnology and Social Anthropology (3) F Eckhardt, Gregory, Kershaw
Prerequisites: Anthropology 300, 303 and consent of instructor. Methods used in the study of other peoples and cultures; field techniques and supervised practice in observation, interviewing, securing and interpreting data; related theory.

471. Linguistic Methodology in Phonetics and Phonemics (3) F Key
Prerequisite: Anthropology 170 or consent of instructor. Identification and distribution of the sound units of language with emphasis on unwritten languages.

472. Linguistic Methodology in Morphology and Syntax (3) S Key
Prerequisite: Anthropology 170 or consent of instructor. Identification and distribution of the morphological, word, phrase and clause units of language with emphasis on non-Indo-European languages.

480A. Methods in Physical Anthropology: Osteology (3) F Shermis
Prerequisites: Anthropology 110, consent of instructor. Instruction in osteology, landmarks and methods in anthropometry and somatology; measurement and analysis of osteological collections, applied anthropometry and somatotyping. Instruction in paleopathology as necessary; discussion of skeletal identification where applicable. (Lecture 2 hours, laboratory 3 hours.)

480B. Methods in Physical Anthropology: Serology (3) S Bates
Prerequisites: Anthropology 110, laboratory biological science and consent of instructor. Laboratory procedures used in the analyses of genetic systems: blood grouping techniques, immunodiffusion and electrophoretic techniques; recent research and applications of genetic data to anthropological problems. (Lecture 2 hours, laboratory 3 hours.)

490. Special Topics in Anthropology (3) On demand Staff
Prerequisite: Consent of instructor. Topics of current interest in anthropology selected for intensive development. May be repeated for a maximum of six units. Topics will be announced in the *Schedule of Classes*.

496. Foundations of Anthropological Knowledge (3) S McCone
Prerequisites: Senior or graduate standing, Anthropology 301 or consent of instructor. Critical study of concepts and theory developed in anthropology, their relationship to the culture in which they have developed and to other disciplines of the study of man, the ethical and moral implications of anthropological research and knowledge; its applications to the problems of modern man.

499. Guided Studies in Anthropology (1-3) F, S Staff
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)

501. Development of Anthropological Theory (3)

502. Proseminar (3)

504. Kinship Systems (3)

516. Urban Anthropology (3)

520. Core Course, Archaeology (3)

530. Core Course, Linguistics (3)

540. Core Course, Physical Anthropology (3)

570. Advanced Field Method in Linguistics (3)

597. Directed Readings in Anthropology (1-3)

600. Seminar in Ethnology and Social Anthropology (3)

620. Seminar in Archaeology (3)

630. Seminar in Anthropological Linguistics (3)

640. Seminar in Physical Anthropology (3)

697. Directed Research (1-3)

698. Thesis (1-4)

Asian Languages

Administrator: Mr. Lloyd T. Inui.

Assistant Professor: Miyazaki.

Lecturer: Pusavat.

Academic Advising Coordinator: Mr. Lloyd T. Inui.

The program in Asian languages is governed by a board of two members representing the Center for Asian Studies and one representing the Asian American 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 (see the Special Programs section of this *Bulletin*) and for the master of arts degree in Asian studies (see the *Graduate Bulletin*). Asian language courses are also appropriate electives to support several of the majors offered by the University.

Chinese

Lower Division

221A-B. Fundamentals of Chinese (4,4) F, S Staff
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 (3,3) F, S Staff
Continuation of first year Chinese. Reading and translation of simple stories and essays; emphasis on grammar, composition and conversation.
331A. Prerequisite: Chinese 221A-B. 331B. Prerequisite: Chinese 331A.

499. Directed Studies in Chinese (1-3) F, S Staff
Prerequisite: Consent of instructor. Independent study under supervision of a faculty member. May be repeated for a maximum of 6 units.

Hindi

Lower Division

221A-B. Fundamentals of Hindi (4,4) F, S Staff
Reading and writing basic Hindi using the devanagari alphabet. Introduction to grammar, conversation and elementary composition.

Upper Division

331A-B. Intermediate Hindi (4,4) F, S Staff
Reading and writing intermediate Hindi using the devanagari alphabet. Second year of grammar, conversation and composition.
331A. Prerequisite: Hindi 221B. 331B. Prerequisite: Hindi 331A.

335. Introduction to Indic Literature (3) F, S Staff
Readings of representative texts from the literature of India in English translation.

499. Directed Studies in Hindi (1-3) F, S Staff
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 Staff
Introduction to grammar, reading, pronunciation, writing and conversation. Not open to students with credit in Japanese 101A-B.

Upper Division

300. Calligraphy (3) S Staff
History and theory of Shodo (Japanese calligraphy). Practice in actual writing with a 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 Staff
Continuation of first year Japanese. Progressive drill on syntax and grammar and sentence patterns: reading, translation and composition.
331A. Prerequisite: Japanese 221A-B. 331B. Prerequisite: Japanese 331A.

405A-B. Conversational Japanese (3,3) F, S Miyazaki
Prerequisite: Japanese 331B or its equivalent as determined by instructor. Advanced study in modern spoken Japanese.

441A-B. Advanced Japanese (3,3) F, S Miyazaki
Prerequisite: Japanese 331B or its equivalent as determined by the instructor. Study of modern spoken and written Japanese involving advanced patterns, expressions.

499. Directed Studies in Japanese (1-3) F, S Miyazaki
Prerequisite: Consent of instructor. Independent study under supervision of a faculty member. May be repeated for a maximum of 6 units.

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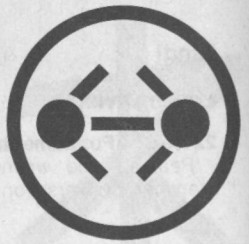
Biology



Department Chairman: Dr. Bruce E. Beekman.

Emeriti: Robert P. Durbin, Ross C. Hardy, Kenneth E. Maxwell.

Professors: Baird, Beekman, Carpenter, Cox, Hrubant, K. L. Johnson, Kluss, Kroman, R. Lincoln, Loomis, Mansfield-Jones, Menees, Rainey, Reish, Schatzlein, Shipley, Sleeper, L. Stephens, Stockton, Wellhouse, Widdowson.

Associate Professors: Alender, Alfieri, Anand, P. Baker, Biedebach, Bourret, Callison, C. Collins, Dailey, C. Hill, Ho, Jenkins, I. Jones, Leamy, D. R. Nelson, Ting, Warter, E. Wood.

Assistant Professors: Dash, Galt, K. Gregory, Huckaby, Lippincott, A. Miller, Parmley, Tjioe.

Credential Adviser: Dr. Frank Alfieri.

Academic Advising Coordinator: Dr. Bruce Beekman.

Programs in biology are offered to provide adequate 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 which can lead to a degree in any one of the following: biology, botany, entomology or zoology. Courses in any of these degree programs should be selected in consultation with the major adviser who will be assigned by the department office. Elective courses may be selected that provide an emphasis in one, or a 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 electron microscope, a sea water system, greenhouses and research and teaching collections of vertebrates and invertebrates, including insects. 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 marine biology, ecology, entomology and vertebrate zoology.

The Biology and Art Departments offer an interdisciplinary program in biomedical art which is described in the Special Programs section of this *Bulletin*.

Major in Biology for the Bachelor of Arts Degree

Lower Division: Biology 212, 216; Chemistry 111A-B; Physics 100A-B; Microbiology 210; Mathematics 112 or 117 and Mathematics 115 or 122 or 270 or Biology 260.

Upper Division: Chemistry 327 and a minimum of 24 units in biological sciences including the following: Biology 340 and 340L, or 342 and 342L, or 447 and 447L, or 440; Biology 370; two courses in botany, one of which must be Biology 327, 331, 447 (and 447L), or 450; either Biology 316 or 313; Biology 332 or 333 or 433. Remaining electives should be selected in consultation with the major adviser.

Major in Botany for the Bachelor of Science Degree

Lower Division: Biology 212, 216; Chemistry 111A-B; Physics 100A-B; Microbiology 210; Mathematics 112 or 117 and Mathematics 115 or 122 or 270 or Biology 260.

Upper Division: Chemistry 327 and a minimum of 33 units of upper division courses to include Biology 316, 327, 331, 370, 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

Lower Division: Biology 212, 216; Chemistry 111A-B; Physics 100A-B; Mathematics 112 or 117 and Mathematics 115 or 122 or 270 or Biology 260.

Upper Division: Chemistry 327; Biology 316, 370; Biology 327 or 344 or 447 and 447L; Biology 350 or 450 or 352 or Chemistry 441A or 448; a minimum of 15 additional units in entomology (to be selected with adviser); Biology 340 and 340L or 342 and 342L or 440 or 448 and six additional units of electives in biological science or chemistry selected in consultation with the major adviser.

Four options within the general field of entomology will be offered: ecology, systematics, physiology and toxicology. Those interested in ecology or systematics will take the following courses not specified in the major: Biology 319, 327, 418, 420, 453. Those interested in a physiology or toxicology option will take the following courses not specified in the major: Biology 447, 447L; Chemistry 328 and 441A or 448; Biology 448, 461 and electives specified by an appropriate adviser depending upon the option.

Major in Marine Biology for the Bachelor of Science Degree

Lower Division: Biology 212, 216; Chemistry 111A-B; Physics 100A-B; Mathematics 112 or 117 and Mathematics 115 or 122 or 270 or Biology 260.

Upper Division: Chemistry 327; Geology 462; Biology 313, 320, 325, 370, 416, 340 and 340L or 440; six units of electives in marine biology and related areas selected from Geology 464; Biology 314, 315, 351, 417, 452, 454; Civil Engineering 468; plus six units of electives from Biology 324, 330, 331, 332, 333, 350, 352, 360, 430, 433, 447, 447L.

Major in Zoology for the Bachelor of Science Degree

Lower Division: Biology 212, 216; Chemistry 111A-B; Physics 100A-B; Mathematics 112 or 117 and Mathematics 115 or 122 or 270 or Biology 260.

Upper Division: Chemistry 327 and a minimum of 34 units in biological science including the following: Biology 313 or 316*, 332 or 333 or 433, 340 and 340L or 342 and 342L, or 440, 370; remaining electives should be selected in consultation with the major adviser.

*Students planning to enter medical, dental, or veterinary schools should substitute Biology 317 for Biology 316.

Master of Arts Degree in Biology

A program of study leading to the master of arts degree in biology is offered. For detailed information concerning requirements see the *Graduate Bulletin.*

Lower Division

100. Man and His Environment (3) F, S Staff
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.

101. 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. (Lecture 2 hours, laboratory 3 hours.)

102. Human Physiology (4) F, S Alender, Biedebach
General introduction to the functional integration of human body systems. Not open for credit to biological science majors. (Lecture 3 hours, laboratory 3 hours.)

103. Animal Life in Southern California (3) F, S Rainey
Ecology, aesthetics and economic importance of some common amphibians, reptiles, birds and mammals of Southern California. Not open for credit to biological science majors. (Lecture 2 hours, demonstration 2 hours.)

104. Trees and Shrubs (3) F Baker
Identification and culture of principal trees and shrubs found in 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 3 hours.)

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.)

200. General Biology (3) F, S Dash, Staff
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 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 for credit to biological science majors. (Lecture 2 hours, laboratory and field 3 hours.)

203. Conservation of Natural Resources (2) F, S Shipley
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) F, 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.)

206. Human Body-Structure and Function (3) F, S Staff
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. (Lecture 2 hours, laboratory 3 hours.

208A-B. Anatomy and Physiology (4,4) F, S Gregory, Lippincott
Prerequisites: Chemistry 100, Physics 104, Biology 200. Chemistry 100 may be taken concurrently with 208A. Integrated course in the principles of anatomy and physiology of the human body. Designed primarily for majors in nursing, physical therapy or related disciplines. Not open for credit to biological science majors. (Lecture 3 hours, laboratory 3 hours.)

210. General Botany (3) F Staff
Development of structures, functions and genetics of plants. (Lecture 2 hours, laboratory 3 hours.)

211. General Botany (2) S Staff
Prerequisite: Biology 210. The morphology and life history of the major groups of plants. (Lecture 1 hour, laboratory 3 hours.)

212. General Botany (5) F, S Staff
A course combining Biology 210 and 211. (Lecture 3 hours, laboratory 6 hours.)

216. General Zoology (5) F, S Staff
Principles of animal biology. Metabolism, physiology, genetics, embryology, evolution and ecology of animals. Not open to students with credit in Zoology 210A-B. (Lecture 3 hours, laboratory 6 hours.)

260. Quantitative Biology (3) F, S Staff
Prerequisites: Mathematics 100, five units of biological science. Introduction to the methods of defining and solving quantitative problems in biology; design of biological experiments. (Lecture 2 hours, laboratory 3 hours.)

Upper Division

300. California Natural History (3) F, S Wellhouse
Common plants, animals, rocks and minerals; the solar system; emphasis on local species and environments. Not open to biological science majors. (Lecture 2 hours, demonstration 2 hours.)

301. Science in the Elementary School (3) F, S Stockton
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 Stockton
Program in carrying out science activities in grades one through eight. Not open for credit to biological science majors or minors. (Laboratory and field 4 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 Jones
Prerequisites: Biology 212 or 216; Chemistry 111A. A comparative study of certain morphological, physiological and life history features of representative protozoan species. Emphasis in the laboratory on optical, cytochemical, nutritional and other experimental techniques. (Lecture 2 hours, laboratory 6 hours.)

315. General Animal Parasitology (4) S Dailey
Prerequisite: Biology 216. The comparative morphology, systematics, and life history 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.)

316. General Entomology (3) F, S Sleeper
Prerequisite: Biology 216. Characteristics, structures, habits, life cycles of insects and their importance to man. (Lecture 2 hours, laboratory and field 3 hours.)

317. Medical Entomology (3) F, S Menees
Prerequisite: Biology 216. Collection, preparation, identification, habits, life cycle and control of insects and other arthropods of medical importance. (Lecture 2 hours, laboratory and field 3 hours.)

318. Medical Entomology Laboratory and Field Procedures (1) S Menees
Introduction to epidemiological and field survey methods, examination of arthropods for pathogens, methods of collecting, preparing and rearing medically important arthropods. (Laboratory and field 3 hours.)

319. Terrestrial Arthropods (3) F Stockton
Prerequisite: Biology 216. Common representatives of the groups of terrestrial arthropods exclusive of the insects. Emphasis on forms of local occurrence and on those which are important in gaining an understanding of relationships within the phylum and of relationships of the arthropods to other phyla. (Lecture 2 hours, laboratory 3 hours.)

320. Ichthyology (3) F, S Staff
Prerequisite: Biology 216. Taxonomy, morphology and ecology of fishes. (Lecture 2 hours, laboratory 3 hours.)

321. Herpetology (3) S Loomis
Prerequisite: Biology 216. Taxomony, natural history, ecology and distribution of amphibians and reptiles; emphasis on local forms. (Lecture 2 hours, laboratory and field 3 hours.)

322. Ornithology (3) F, S Collins, Warter
Prerequisite: Biology 216. Morphology, taxonomy, ecology and behavior of birds; emphasis on laboratory and field study of adaptations of local forms. (Lecture 2 hours, laboratory and field 3 hours.)

323. Mammalogy (3) F, S Huckaby
Prerequisite: Biology 216. Taxonomy, ecology and distribution of mammals; emphasis on field work and use of mammal collections of western forms. (Lecture 2 hours, laboratory and field 3 hours.)

324. The Vertebrates (4) F, S Huckaby
Prerequisite: Biology 216. Natural history, ecology and evolution of the vertebrates. Not open for major credit if more than one of the following courses has been previously taken: Biology 320, 321, 322 or 323. (Lecture 3 hours, laboratory 3 hours.)

325. Algae (3) F, S Widdowson
Prerequisite: Biology 212. Systematics, morphology, ecology, and phylogeny of marine and freshwater algae, emphasis on forms of Southern California. (Lecture 1 hour, laboratory and field 6 hours.)

326. Cryptogamic Botany (3) S Bourret
Prerequisite: Biology 212. Morphology, physiology and biology of the nonphotosynthetic cryptogamic plants. (Lecture 2 hours, laboratory 3 hours.)

327. 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. (Lecture 2 hours, laboratory and field 6 hours.)

328. Plants and Man (3) F Baker
Economic and social role of plants and plant products in our civilization, from a botanical perspective. Emphasis on the origins, methods of processing and uses of plants. Recommended for non-science majors and prospective teachers. (Lecture 3 hours.)

328L. Plants and Man Laboratory (1) F Baker
Prerequisite: Concurrent enrollment in Biology 328. Field trips and practical laboratory experience in processing plant products. (Laboratory or field trips 3 hours.)

330. Plant Anatomy (3) S Alfieri
Prerequisite: Biology 212. Structure and growth of meristems; development and structure of cells, tissues and tissue systems; comparative anatomy of leaf, stem and root. (Lecture 2 hours, laboratory 3 hours.)

331. Plant Morphology (4) F Cox
Prerequisite: Biology 212. Comparative structure, life history and phylogenetic relationships of plants. (Lecture 2 hours, laboratory 6 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) S 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.)

340L. Laboratory in Comparative Animal Physiology (1) F, S Staff
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 Johnson, 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 Staff
Prerequisite: Biology 342 (may be taken concurrently). Laboratory course with applications to the principles included in Biology 342.

343. Endocrinology (3) F, S Schatzlein
Prerequisites: Biology 216; Chemistry 111A-B. Role of the endocrines in vertebrate and invertebrate adjustment to changes in the internal and external environment. (Lecture 3 hours.)

344. Plant Pathology (3) F Bourret
Prerequisites: Biology 212 and Chemistry 111A-B. Principles and practices of plant pathology. Structure, development and classification of fungi. Emphasis on diagnosis, treatment and control of diseases affecting cultivated plants. (Lecture 2 hours, laboratory and field 3 hours.)

345. Pathophysiology (2) F, S Anand, Gregory
Prerequisite: Microbiology 345. 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 Miller
Prerequisites: Biology 212, 216. Chemistry and physics recommended. Relationships of plants and animals to environment, both physical and biotic; distribution and interrelationship of land forms; visits to typical local plant and animal communities. (Lecture 2 hours, laboratory and field 3 hours.)

351. Animal Behavior (4) F, 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.)

352. Dynamics of Animal Populations (3) F Rainey
Prerequisites: Biology 216, Mathematics 115 or 122 or 270 or Biology 260. Response to components of the physical environment, distribution, density, dispersal rates, reproduction, growth, regulation and social behavior of natural animal populations. Experimentation and quantitative information stressed. (Lecture 2 hours, laboratory and field 3 hours.)

354. Conservation (3) F Shipley
Prerequisite: Biology 212 or 216. Wise utilization of natural resources in the United States; historical development, economics, water, soils, minerals, forests, grasslands, wildlife, recreational resources, planning and the conservation of man. Not open to students with credit in Biology 310. (Lecture 2 hours, laboratory and field 3 hours.)

355. Biology and Human Affairs (3) F Staff
Prerequisites: Five units of biological sciences. Major contributions of biology to human welfare, health , eugenics, conservation, economics, and philosophy with a consideration of the resulting aspects and problems to the citizen.

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.)

363. Biological Graphics (2) S R. Johnson
Prerequisite: Photography 210 or consent of instructor. Experience in the preparation of photographic and graphic material for scientific publication and science classroom instruction. Course is designed specifically for science majors. (Laboratory 6 hours.)

364. Biomedical Illustration (2) F, S Cox, Warter
Prerequisites: Degree in biology or art in progress, consent of instructor. Must be taken concurrently with Art 374A-B. May be repeated for a maximum of four units.

370. General Genetics (4) F, S Staff
Prerequisites: Biology 212 or 216, Mathematics 115 or 122 or 270 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. Not open to students with credit in Biology 311. (Lecture 3 hours, laboratory 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.)

416. Marine Biology (3) F, S Galt
Prerequisites: Biology 313 or Geology 341, Chemistry 111A-B. Introduction to physical, chemical and biological aspects of marine environment. Ecology of organisms of littoral, deep sea and pelagic zones; their economic implication. (Lecture 2 hours, laboratory and field 3 hours.)

417. Invertebrate Systematics (3) S Reish
Prerequisite: Biology 313. Systematics of invertebrates, excluding insects. (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.)

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 inmportant orders; Coleoptera, Lepidoptera, Diptera and Hymenoptera. (Lecture 2 hours, laboratory 3 hours.)

422. Economic Entomology (3) F Staff
Prerequisite: Biology 316 or equivalent. Bionomics of injurious insects and arachnids affecting plants and animals; recognition, life history and habits; the manipulation of insect and mite populations by chemical, mechanical, legislative and environmental means. (Lecture 2 hours, laboratory and field 3 hours.)

430. Cytology (2) F, S Wood
Prerequisite: Biology 212 or 216. Structure, organization and function of protoplasm at the microscopic and submicroscopic levels, including techniques of study.

431. Cytology Laboratory (2) S Wood
Prerequisites: Biology 430, consent of instructor. Experimental approaches to problems of cell structure and function, using electron microscopy, phase microscopy, autoradiography and other methods. (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. 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.)

440. General and Cellular Physiology (4) F, S Schatzlein
Prerequisites: Five units of biological sciences, Chemistry 327, Physics 100A-B. 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 and Renal Physiology (3) F Staff
Prerequisite: Biology 340 or 342 or 440 or consent of instructor. Function of the circulation and kidney 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, laboratory 3 hours.)

445. Mammalian Metabolism (3) S Anand
Prerequisite: Biology 440 or Chemistry 441A or Home Economics 331 or consent of instructor. Study of chemical and energy transformations in mammals with emphasis on intermediary metabolism and regulatory mechanisms of physiological processes. (Lecture 3 hours.)

446. Respiratory Physiology (2) On demand Staff
Prerequisite: Biology 340 or 342 or 440. Analysis of respiratory mechanisms and function in higher vertebrates. (Lecture 2 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 327 (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 Natural History (2-6) On demand Staff
Prerequisites: Six units of upper division biological science and consent of instructor. Studies of the flora and fauna of a specific area or habitat type such as deserts, mountains or marine zones. (Lecture, laboratory and field arranged.)

452. Marine Plankton (4) F Galt
Prerequisite: Biology 313. Identification, adaptations, life histories and distributions of the 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.)

454. Quantitative Ecology of Fishes (3) S Staff
Prerequisites: Biology 320 and a knowledge of elementary statistics. Selected studies in the quantitative ecology of marine and freshwater fishes with emphasis on those of commercial importance. (Lecture 2 hours, laboratory 3 hours.)

455. Physiological Ecology (3) F Hill
Prerequisites: Biology 342 or 440 and Biology 350. Study of physiological responses of animals to environmental factors with emphasis on distributional and evolutionary aspects. (Lecture 2 hours, laboratory 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 Staff
Prerequisite: Chemistry 327 or equivalent. Invertebrate and mammalian toxicity of materials used for protection of food, fiber, and human health; mode of action, chemical properties, bio-assay, phytotoxicity, poison residues, hazards, legal aspects, effect on aquatic and terrestrial wildlife, and environment. (Lecture 2 hours, laboratory 3 hours.)

464. Environmental Toxicology (3) F Staff
Prerequisites: Biology 212 or 216, Chemistry 327. Metabolism, mode of action and detoxication mechanisms of extraneous chemical substances in living processes. Effects of pollutants, waste products, chemicals of commerce, warfare agents, drugs and narcotics on human health and survival, wildlife and the biotic environment.

470. Mammalian Physiological Genetics (3) S Hrubant
Prerequisites: Biology 370, Chemistry 327. Genetic basis of metabolic disorders in mammals with special emphasis on man. Not open to students with credit in Biology 411.

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. Not open to students with credit in Biology 412.

473. Molecular Genetics (3) S Ting
Prerequisites: Biology 370, Chemistry 327. Nature, replication, regulation and mode of action of the genetic material. Not open to students with credit in Biology 413. (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. Not open to students with credit in Biology 432.

475L. Cytogenetics Laboratory (2) F Even years Hrubant
Prerequisites: Biology 370 and 475 which may be taken concurrently. Microscopic study of the processes of mitosis, meiosis and aberrant chromosomal behavior. Chromosome culture, karyotyping and the effects of external agents on the chromosomes. Not open to students with credit in Biology 432L. (Laboratory 6 hours.)

490. Special Topics in Biology (1-3) On demand Staff
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 six units.

495A-B. Laboratory Techniques (1,1) F, S Staff
Prerequisite: Consent of instructor. Experience for advanced students in the organization and techniques in a basic science laboratory. Not open to students with credit in Biology 462A-B. (Conference 1 hour, laboratory 3 hours.)

496. Investigations in Biology (1-3) F, S Staff
Prerequisite: Consent of instructor. Research in a specific subject in biology, such as anatomy and physiology, biology, botany, entomology or zoology. Topic of study to be approved and directed by a staff member in the Department of Biology. May be repeated to a maximum of 3 units.

Graduate Division

500. Topics in Biology (2)

512. Organic Evolution (3)

517. Polychaete Systematics (3)

520. Advanced Ichthyology (2)

521. Advanced Herpetology (2)

522. Advanced Ornithology (2)

523. Advanced Mammalogy (2)

524. Principles of Animal Taxonomy (2)

525. Advanced Parasitology (2)

526. Advanced Insect Systematics (2)

530. Advanced Cytology (2)

531. Adaptive Vertebrate Morphology (3)

532. Invertebrate Embryology (4)

540. Radio-Chemical Techniques in Biology (4)

541. Experimental Endocrinology (3)

542. Plant Growth and Development (3)

550. Ecology of Marine Organisms (2)

551. Plant Geography (2)

552. Zoogeography (2)

555. Advanced Animal Behavior (2)

560. Biological Literature (2)

561. History of Biology (2)

562. Biometry (3)

563. History of Entomology (2)

570. Population Genetics (3)

650. Field Biology and Ecology (3)

660. Seminar (1)

661. Seminar in Botany (1)

662. Seminar in Ecology (1)

663. Seminar in Entomology (1)

664. Seminar in Genetics (1)

665. Seminar in Marine Biology (1)

666. Seminar in Physiology (1)

696. Research Methods (2)

697. Directed Studies (1-3)

698. Thesis (1-4)

Chemistry

Department Chairman: Dr. Roger D. Bauer.

Professors: Bauer, E. Becker, Goldish, Harris, R. Henderson, Kalbus, Kierbow, Marsi, Mayfield, Perlgut, Simonsen, Stern, Tharp.

Associate Professors: Baine, Devore, Hunt, J. Jensen, Legg, Lieu, Loeschen, Po, Senozan, Wynston.

Assistant Professors: Berry, C. Osborne, Schachter, Wikholm.

Lecturers: Hutchins, Paselk.

Academic Advising Coordinator: Dr. Roger D. Bauer.

The program in chemistry at the bachelor's degree level is planned to promote development of both 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. in chemistry program is approved by the American Chemical Society.

Major in Chemistry for the Bachelor of Science Degree

Chemistry majors must achieve a grade of C or better in all chemistry courses required for the major.

Lower Division: Chemistry 111A-B, 251, 251L; courses to support the major to include Physics 151, 152, 153 and Mathematics 117, 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 321B or Chemistry 371A-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.

Major in Chemistry for the Bachelor of Arts Degree

Chemistry majors must achieve a grade of C or better in all chemistry courses required for the major.

Lower Division: Chemistry 111A-B, 251, 251L; courses to support the major to include Physics 100A,B; Mathematics 115, 116 or 122. (Students who contemplate further study in chemistry or biochemistry are advised to take Mathematics 122.)

Upper Division: Chemistry 321A-B, 377 (or 371A), 451 and a minimum of six additional units of chemistry, chosen in consultation with an adviser, from Chemistry 371B, 373, 421, 422, 431, 434, 441A,B, 443, 461 and 496. A maximum of three units of Chemistry 496 may be used to fulfill this six-unit requirement. Students are encouraged to consult with an adviser relative to selecting additional units in accordance with the students' individual goals and interests. Courses in biological sciences are recommended for preprofessional students, in business for those interested in marketing, and in English and journalism for those interested in technical writing.

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 and B, which have been taken elsewhere, the consent of the department chairperson is required.

Master of Science Degree in Chemistry

Master of Science Degree in Biochemistry

Programs of study leading to the master of science degree in chemistry and the master of science degree in biochemistry are offered. For detailed information concerning requirements see the *Graduate Bulletin*.

Lower Division

100. Fundamentals of Chemistry (4) F, S Staff
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 111A. (Lecture 3 hours, laboratory 3 hours.)

107. Chemistry and the Environment (3) F, S Staff
Discussion of problems of current concern to man regarding his interactions with the environment and how chemistry plays a role either as a cause of or a solution to such problems as environmental pollution of the soil, water and atmosphere; use and abuse of drugs, medicine and food additives; the population explosion; use of pesticides and herbicides and chemical processes of general importance. (Lecture, discussion and demonstration, 3 hours.)

111A-B. General Chemistry (5,5) F, S Staff
Prerequisite: Mathematics 101 or 102 (may be taken concurrently). High school chemistry and physics are recommended. Principles of chemistry with emphasis on inorganic materials. Qualitative analysis is included in the second semester. A chemistry entrance examination must be taken before registration in Chemistry 111A. (Lecture 3 hours, laboratory and problem session 6 hours.)

200. Introduction to Chemistry (4) F, S Staff
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 (2) F, S Staff
Prerequisites: Chemistry 111B and 251L or concurrent registration in 251L. Introduction to the theories and techniques of gravimetric and volumetric analysis, with emphasis on the latter. This course, together with 251L, meets the requirements of most medical schools. (Lecture 2 hours.)

251L. Quantitative Analysis Laboratory (2) F, S Staff
Prerequisite: Chemistry 251 or concurrent registration in 251. Laboratory work in which the principles taught in 251 are applied to the analysis of unknown samples. (Laboratory 6 hours.)

Upper Division

300. Bio-organic Chemistry (4) F, S Staff
Prerequisite: Chemistry 200. 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-B. Organic Chemistry (5,5) F, S Staff
Prerequisite: Chemistry 111B. Recommended: Chemistry 251, 251L. Designed primarily for chemistry majors, but open to other students who desire a broader background in this field. Emphasis is upon the application of modern principles to structure, reactivity, methods of synthesis, and physical properties of organic compounds. (Lecture 3 hours, laboratory and quiz section 6 hours.)

322. Organic Chemistry Lecture (3) F, S Staff
Prerequisite: Chemistry 321A. Designed for pre-medical and engineering students and others who need 8 units of organic chemistry. Not open to chemistry majors or to students with credit in Chemistry 321B.

323. Organic Chemistry Laboratory (2) F, S Staff
Prerequisites: Chemistry 322 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 Staff
Prerequisite: Chemistry 111A. 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 Staff
Prerequisite: Chemistry 327 which may be taken concurrently. Designed to provide training in the basic techniques of the organic chemistry laboratory. Not applicable to a degree in chemistry. (Lecture 1 hour, laboratory 6 hours.)

371A-B. Physical Chemistry (3,3) F, S Staff
Prerequisites: Chemistry 111B, Physics 153 and Mathematics 224. Fundamental physical laws, theoretical principles, and mathematical relations of chemistry. Consists of the extensive application of mathematical methods to chemical systems and the solution of typical problems. (Lecture 3 hours.)

373. Physical Chemistry Laboratory (3) F, S Staff
Prerequisites: Chemistry 251, 251L, 371A, and Chemistry 371B which may be taken concurrently. 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.)

377. Fundamentals of Physical Chemistry (3) F, S Staff
Prerequisites: Chemistry 111B, Mathematics 115 or 122, Physics 100B or 152. Principles and mathematical methods of physical chemistry, with solution of problems in the thermodynamics and kinetics. Not open to students with credit in Chemistry 371A. Not applicable to a B.S. degree in chemistry. (Lecture 3 hours.)

385. Computer Methods in Chemistry (2) F, S Staff
Prerequisites: Chemistry 111AB, 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 Staff
Prerequisites: Chemistry 321B or 322 or pass the Organic entrance exam and 371B or 377. Theoretical interpretations of the chemical and physical properties of organic compounds including the following: mathematical derivations of rate equations from experimental results, calculations of retion rate constants from experimental 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 Staff
Prerequisites: Chemistry 251, 251L and 321B 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 Staff
Prerequisite: Chemistry 371A or consent of instructor. Detailed quantitative study of the atomic structure of elements and relationships to chemical behavior; review of the properties of elements and compounds; application of mathematical methods to the solution of problems illustrating these properties.

432. Inorganic Chemistry Laboratory (3) F even years Staff
Prerequisite: Chemistry 431. Preparation and properties of inorganic compounds. Reference to chemical literature is required. (Lecture 1 hour, laboratory 6 hours.)

434. Radiochemistry (4) S Staff
Prerequisite: Chemistry 371A or consent of instructor. Properties and uses of natural and artificial radioactive isotopes. (Lecture 2 hours, laboratory 6 hours.)

441A-B. Biological Chemistry (3,3) F, S Staff
Prerequisite: Chemistry 321A or 327; one biology or microbiology course recommended. Quantitative dynamic metabolic processes involved in the maintenance of life, a mathematical treatment of the energetics and kinetics of chemical reactions in living systems; chemistry and metabolism of carbohydrates, lipids, amino acids, proteins and nucleic acids.

443. Biological Chemistry Laboratory (3) F, S Staff
Prerequisites: Chemistry 251, 251L, and 441A. Laboratory study of the chemical process of life. (Lecture 1 hour, laboratory 6 hours.)

447. Clinical Chemistry (3) F, S Staff
Prerequisites: Chemistry 251, 251L, and 441A. 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 Staff
Prerequisite: Chemistry 327. 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. Open to majors in the biological sciences only with the consent of the major department and the instructor. (Lecture 3 hours.)

451. Instrumental Methods of Analysis (4) F, S Staff
Prerequisite: Chemistry 371A or 377 or consent of instructor. Theory and quantitative application of instrumental methods to chemical problems. Laboratory work includes experiments in colorimetry, spectrophotometry, polarography, refractometry and other modern techniques. (Lecture 2 hours, laboratory 6 hours.)

461. Glass Blowing (1) F, S Staff
Demonstrations and practice in elementary laboratory glass manipulation. Open only to natural science majors. Offered only on credit/no credit basis. (Laboratory 3 hours.)

471. Chemical Thermodynamics (3) F Staff
Prerequisites: Chemistry 371A 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 Staff
Prerequisite: Chemistry 371B. 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.

491. Chemical Literature and Report Writing (2) F, S Staff
Prerequisites: English 100 or equivalent, Chemistry 321A or 371A, Chemistry 499 or 496 must be taken concurrently. Use of the chemical literature and practice in writing technical reports based on literature.

496. Special Problems in Chemistry (1-3) F, S Staff
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 Staff
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

521. Advanced Physical Organic Chemistry (3)

522. Special Topics in Organic Chemistry (3)

531. Advanced Inorganic Chemistry I (3)

532. Advanced Inorganic Chemistry II (3)

541. Biochemistry of Macromolecules (3)

542. Special Topics in Biochemistry (3)

543. Advanced Biochemistry Laboratory (2)

552. Special Topics in Analytical Chemistry (3)

571. Advanced Thermodynamics (3)

572. Advanced Physical Chemistry (3)

595A. Colloquium in Biochemistry (1)

595B. Colloquium in Organic Chemistry (1)

595C. Colloquium in Analytical, Physical and Inorganic Chemistry (1)

691. Directed Reading (1)

695. Seminar in Chemistry (1)

697. Directed Research (1-3)

698. Research and Thesis (1-6)

Communicative Disorders

Department Chairperson: Dr. June M. Cooper.

Professors: Cooper, Goodman-Malamuth, Larr, Partridge, J. Thompson.

Associate Professors: Craven, Yates.

Assistant Professor: Beattie.

Lecturer: Warren.

Academic Advising Coordinator: Dr. June M. Cooper.

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 department 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 implement their regular majors.

To provide clinical experience for its majors, the department maintains a speech and hearing clinic on campus and branch clinics in adjacent communities.

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.

Students seeking admission into the clinical and/or credential programs in communicative disorders must complete the departmental application form, must have an overall GPA of 2.5 and must complete the following course work with a grade point average of 2.75: C.D. 361, 371, 471, 473.

Major in Communicative Disorders for the Bachelor of Arts Degree

Lower Division: Speech Communication 246 or 271, three units from Speech Communication 130, 131, 132, 133.

Upper Division: Communicative Disorders 361, 362, 364, 366, 371, 471, 473, 480, 481, 469 (two units) or 469 (one unit) and 479 (one unit), and one course from the following: Communicative Disorders 431, 466, 474, 476.

Master of Arts Degree in Communicative Disorders

A program of study leading to the master of arts degree in communicative disorders is offered. For detailed information concerning requirements see the *Graduate Bulletin*.

Lower Division

060. Speech Improvement (0) F, S Staff
For students with speech defects that are not amenable to correction in other speech courses. Counts 1 unit toward the student's semester load but does not give unit credit toward graduation.

Upper Division

361. Language and Speech in Normal and Exceptional Children (3) F, S Cooper, Partridge, Yates
Examination of language development as learned and as psychodynamic behavior. Procedures for differential diagnosis and remediation.

362. Psychology of Communicative Disorders (3) F, S Cooper, Craven, Thompson, Yates
Prerequisite: C.D. 361. Psychological aspects of communicative disorders and their implications for the speech and hearing pathologist.

364. Orientation to Clinical Procedures (1) F, S Craven
To acquaint student with clinical procedures, equipment facilities, policies and regulations prior to undertaking clinical practicum. Required of all speech pathology/audiology majors in a semester of the junior year. Graded on a Credit/No Credit basis.

366. Speech Pathology I (4) F, S Cooper, Craven, Partridge, Thompson
Prerequisites: C.D. 361, 371. Historical and interpersonal features of human communicative disfunctions. Survey of major communicative disorders. Behavioral, pathological, diagnostic and therapeutic principles of functional speech disorders.

371. Phonetics (3) F, S Staff
Phonetic basis of speech sounds and the various factors which influence pronunciation. Consideration is given to linguistic variations, regional dialects and standards.

430. Hearing Science (3) F Beattle
Prerequisite: C.D. 473. 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. 473. 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, S Craven, Thompson
Prerequisite: C.D. 366. Etiology, evaluation and therapy for stuttering, cluttering and other disorders of rhythm.

469. Clinical Practice in Speech Disorders (1-6) F, S Staff
Prerequisites: C.D. 366, 371, 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.

471. Voice Science (3) F Larr, Partridge
Speech process as an organic and acoustic phenomenon. Anatomy, physiology, neurology and acoustics of speech and voice.

473. Principles of Audiometry I (3) F, S Beattle, Larr, Warren
Anatomy and physiology of the hearing mechanism; administration and interpretation of audiometric and testing results, organization of hearing conservation programs.

474. Audiometry II (3) S Beattle, Warren
Prerequisite: C.D. 473. 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 Cooper, Larr
Prerequisites: C.D. 366, 471. Etiology, diagnosis and therapy of voice, cleft palate and oro-facial abnormalities, including voice problems of the cerebral palsied, hard of hearing and deaf.

478. Language and Speech of the Culturally Different (3) F, S Cooper
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 (1-6) F, S Beattle, Larr, Warren
Prerequisites: C.D. 473, 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 Larr, Warren
Prerequisite: C.D. 473. 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. Language Pathologies (4) F, S Cooper, Larr, Yates
Prerequisites: C.D. 366, 471. Language and speech disorders resulting from deviant neurological development or control as manifested in children and adults.

490. Special Studies in Communicative Disorders (1-3) F, S Staff
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 Staff
Prerequisite: Consent of instructor. Independent study under supervision of a faculty member. May be repeated for a maximum of six units. Not acceptabl6 for graduate credit toward the master's degree.

Graduate Division

564. Parent Counseling in Speech Correction (3)

570. Organization and Administration of Speech and Hearing Services (2)

572. Diagnosis of Communicative Disorders (3)

574. Hearing Aids (3)

662. Seminar in Language Pathology (3)

663. Seminar in Speech Pathology (3)

669. Advanced Clinical Practice in Speech Pathology (1-6)

674. Seminar in Audiology (3)

679. Advanced Clinical Practice in Audiology (1-6)

696. Research Methods (3)

697. Directed Research (1-3)

698. Thesis or Project (1-4)

Comparative Literature

Department Chairman: Dr. John C. Jernigan.

Professors: Carr, Hubble, Markman.

Associate Professor: Jernigan.

Assistant Professor: Bush.

Academic Advising Coordinator: Dr. John C. Jernigan.

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

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 331, 398, and 489 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 primary 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 331, 398 and 489 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

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 (3) F, S Staff
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.)

184. Introduction to Comparative Studies (3) F, S Staff
Prerequisite: English 100. Designed for the comparative literature major. Open to other students by consent of instructor. A study of the methods of approaching the comparative study of literature, including particularly an introduction to the basic cultures, periods and genres with which comparative literature is involved.

230. Introduction to World Literature (3) F, S Staff
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 Staff
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 Staff
Representative selections, in translation, from literature of the Near East, India, China and Japan. Not open to students with credit in Comparative Literature 439.

Upper Division

324. World Theatre Today (3) S Staff
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 avant-garde 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 Staff
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 Staff
Representative selections, in translation, from European writers to and since 1600, in relation to the development of Western civilization.

340. Methods in Comparative Literature (3) S Staff
History and theory of comparative analysis, including objectives and methods of research and the interrelations of the various artistic media.

342. The Bible as Literature (3) S Staff
Reading of representative Biblical selections evaluated by literary criteria.

346. Readings in World Poetry (3) F Staff
Representative selections, in translation, from the poetry of the world, from the earliest examples to the present.

349. Literary Movements (3) F Staff
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 Staff
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 Staff
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 Staff
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.

421. Classical Drama (3) F Staff
Greek and Roman drama, in translation. (Same course as Theatre Arts 421. Formerly Comparative Literature 332.)

422. Renaissance Theatre and Drama (3) F Staff
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 Staff
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 semester. (Same course as Theatre Arts 428.)

430. Dante (3) F, 1976 and alternate years Staff
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 Staff
Representative selections, in translation, from writings of the medieval period, reflecting dominant ideas of the time.

432. Continental Renaissance Literature (3) F Staff
Major themes, authors and works of Renaissance Europe.

438. Twentieth Century European Literature (3) S Staff
European literature, in translation, from about 1900 to the present.

443. Continental Romanticism (3) F, S Staff
Interdisciplinary study of representative Continental literary works in translation in the period from 1785-1860, including their relationship to the aesthetic theory and other culture of the period.

446. Continental Short Story (3) F Staff
Comparative study of the short story from the Renaissance to the present in Italy, Spain, Germany, Russia and the Soviet Union. Emphasis is on analysis of stories, development of genre and comparison of national characteristics.

447. Nineteenth Century Continental Novel (3) F Staff
Representative European novels, in translation, of the 19th century, excluding British.

449. Critical Studies in Major Continental Writers (3) S Staff
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 Staff
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 Staff
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 Staff
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.

455. Theory and Practice of Translation (4) S Staff
Prerequisite: Command of one foreign language, equivalent to three years of college foreign language, or consent of instructor. Theory and practice of literary translation. Each student will plan and produce a translation of high quality, including an introduction explaining the special problems involved.

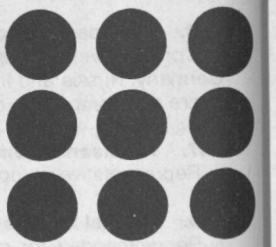
499. Directed Studies (1-4) F, S Staff
Prerequisite: Consent of instructor. Independent study of special topics under supervision of a faculty member.

Graduate Division

501. Advanced Interdisciplinary Study (3)

502. Modern Folklore Research (3)

Economics



Department Chairman: Dr. Simeon J. Crowther.

Emeritus: Peter F. Palmer.

Professors: Atherton, Cole, Dvorak, J. R. Powell, Rooney, Segelhorst, Simonson, Strain.

Associate Professors: R. C. Anderson, Beaumont, Crowther, Glezakos, Larmore, Stern.

Assistant Professors: Farrell, Ishimine, Magaddino, Skov, Tennenbaum.

Credential Adviser: Ms. I. Lee Skov.

Academic Advising Coordinator: Dr. Marion Beaumont.

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.

Major in Economics for the Bachelor of Arts Degree

Lower Division: Economics 200, 201, Accounting 200A or 201 and two upper division or lower division courses (totaling 6 or more units) selected from the departments of anthropology, geography, history, mathematics, political science, psychology, quantitative systems and/or sociology. These courses shall be in addition to courses fulfilling categories II and V of the General Education requirement. 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, 320, 360 or 361, 380, 412, and two additional upper division economics courses, exclusive of Economics 300, 495 and 499.

Minor in Economics

A minimum of 21 units which must include Economics 200, 201, 310, 311 or 320, and one of the following: Economics 360, 361, 368, 412. 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 in Economics

A program of study leading to the master of arts degree in economics is offered. For detailed information concerning requirements see the *Graduate Bulletin*.

Lower Division

200. Principles of Economics (3) F, S Staff
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 Staff
Business organization, price theory, allocation of resources, distribution of income, public economy. (Micro Economics.)

Upper Division

300. Fundamentals of Economics (3) F, S Staff
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.

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.)

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 Staff
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 Staff
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.

312. Current Economic Thought (3) F Staff
Covers ideas and philosophies of famous economists and leading present-day schools of economic thought. Includes study of main ideas of such important economic philosophers as Galbraith, Myrdal, Samuelson, Friedman, Sweezy, Mises, Rothbard and several others. Emphasis on modern institutionalist school, post-Keynesian school, Chicago monetarist school, neo-Marxist radical school and libertarian school.

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.

330. Government and Business (3) S Cole, Powell
Prerequisites: Economics 200 and 201, or 300. Basic American policy of maintaining competition to control economic behavior, with some consideration of alternative policies. Case studies of specific industries.

331. Economics of Transportation (3) F Segelhorst
Prerequisites: Economics 200 and 201, or 300. Economic, institutional and historical factors determining the transportation system of the United States, the various agencies of transport, their rates and rate structure. Problems and policies of railroad, highway, water, air and pipeline transportation. Current development of a national policy for transportation.

332. Public Utilities (3) S Cole, Rooney
Prerequisites: Economics 200, 201. Economic foundations of utility regulation; historical development and current status of rate regulation; environmental aspects of the regulation of utility operations; alternatives to present utility regulation practices. Examples will be drawn from electric, gas, telephone, water and other utility enterprises.

333. Managerial Economics (3) F, S Staff
Prerequisites: Economics 200, 201 and Mathematics 115 (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; cost and output decisions. Pricing strategies under various market constraints. Investment in fixed assets. Business forecasting.

334. Environmental Economics (3) F Rooney
Environmental impacts of economic growth including air and water pollution, urban congestion and natural resource depletion; population pressures on natural resources and the quality of life; economic implications of divergences between private and social costs; transaction costs and information costs; public policies for environmental control.

336. Regional Economics (3) S Segelhorst
Prerequisites: Economics 200 and 201, or 300. Analysis of intranational regions, determination of regional income levels, stability, economic growth, specialization and trade. Application of analytical tools to the problems of the Los Angeles region. Not open to students with credit in Economics 366.

340. Labor Economics (3) F, S 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.

345. 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.

350. Public Finance (3) F Beaumont, Magaddino, Segelhorst
Prerequisites: Economics 200, 201. The economic rule 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 to externalities, such as environmental degradation. Emphasis on the allocation and distribution effects of government expenditures and taxation.

351. State and Local Finance (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.

360. American Economic History (3) F, S Crowther, Powell
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, S Crowther
Prerequisites: Economics 200 and 201, or 300. Economic analysis of the principal features 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, or consent of instructor. Social 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.

363. Latin-American Economic Problems (3) S Farrell, Powell
Prerequisites: Economics 200 and 201, or 300 or consent of instructor. Development and current problems of the Latin-American economies. Emphasis on factors affecting growth rates and distribution of income. Procedures stress individual studies and reports.

364. Soviet Economy (3) S Staff
Soviet economic history; historical and ideological background; early policy experiments; the "Stalin model;" policies and performance in growth, income distribution, consumption. Recent economic problems, proposed reforms.

365. Economic Development (3) F Farrell, Glezakos
Prerequisites: Economics 200, 201. Economic and social factors underlying economic development. Analysis of problems associated with the economic growth of the less developed countries. Evaluation of development policies.

367. Chinese Economy (3) F Staff
Political economy of the People's Republic of China. Relationships between ideology, institutions, policy and performance in a dynamic context.

368. Comparative Economic Systems (3) F, S Staff
Handling of economic problems in differing national and ideological contexts. Combines an overall conceptual framework with the study of specific national approaches.

370. 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.

380. Economic Statistics (3) F, S Glezakos, Rooney
Prerequisite: Mathematics 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.

410. Problems of Microeconomic Analysis (3) S Tennenbaum
Prerequisite: Economics 310. Detailed analysis and examination of particular markets and contemporary issues in light of economic theory. Emphasis on the role of information and transaction costs, property rights and economic efficiency, alternative models of firm's cost functions, capital budgeting and implications of the theory of market structures for particular markets. Students will be required to make seminar presentations of their analyses.

412. 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.

420. Economic Fluctuations and Forecasting (3) F, S Staff
Prerequisites: Economics 311, 320, 380. Booms and recessions: their characteristics, causes and consequences. Policies designed to reduce economic fluctuations. Current business cycle developments. Alternative methods of forecasting changes in economic conditions.

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. Specific effects of Federal Reserve and Treasury policy actions which affect income, employment and prices. Procedures stress individual studies and reports.

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.

440. Labor and the Law (3) F Strain
Prerequisite: Economics 340. Legislation, administration and judicial control of employer/employee relations. Focus on legal aspects of labor union activities. Analysis of economic effects of public policies. Procedures stress individual studies and reports.

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.

470. International Trade and Finance (3) F Farrell, Ishimine, Stern
Prerequisite: Economics 370. 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 financial institutions.

481. Intermediate Economic Statistics (3) F Glezakos
Prerequisite: Economics 380. A rigorous treatment of statistics emphasizing aspects relevant to economics. Statistical inference, probability distributions, applications of simple and multiple regression analysis to economic problems, analysis of variance and structural analysis of time series.

483. Introduction to Mathematical Economics (3) F, S 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.

486. Introduction to Econometrics (3) S Glezakos
Prerequisites: Economics 380, 483, 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) On demand Staff
Prerequisite: Consent of instructor. Topics of current interest in economics selected for intensive 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
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 Economics Department at least 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 Staff
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

510. Advanced Microeconomic Theory (3)

511. Advanced Macroeconomic Theory (3)

545. Economics of Health Care Facilities (3)

620. Seminar in Monetary Theory (3)

630. Seminar in Industrial Organization and Economic Policy (3)

636. Seminar in Urban and Regional Economics (3)

640. Seminar in Labor Economics (3)

650. Seminar in Public Finance (3)

661. Seminar in Economic History (3)

665. Seminar in Economic Development (3)

670. Seminar in International Economics (3)

686. Seminar in Econometrics (3)

697. Directed Research (1-3)

698. Thesis (2-6)

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English

Department Chairman: Dr. Helen C. Gilde.

Emeriti: Ralph K. Allen, George R. Cerveny, Aillee Wilford Rose, Stanley C. Rose, George D. Stephens, Harry S. Wilder.

Professors: C. Allen, Aspiz, Avni, Axelrad, C. Baker, Betar, Bonazza, Brooks, Crane, Crawford, Darbee, Day, Gilde, Hermann, James, Knafel, Lawson, R. Lee, Locklin, Lothamer, Lubbe, Lyon, Masback, Mittleman, E. Nielsen, Orgill, Purcell, Rodabaugh, Sawyer, Schwab, Skarsten, J. Williams, L. Williams, S. Wilson, Wylder.

Associate Professors: Ames, Bell, A. Black, Borowiec, Brophy, Dinielli, Fine, Hipkiss, Lim, May, Nelson, Peck, Peterson, Polk, Pomeroy, Ross, Samuelson, Spiese, Stetler, Sullivan, Weinstock, O. Williams.

Assistant Professors: Brekke, Fried, Garrott, Hertz, Jaquith, McCullough, Plourde, Rosenfelt.

Academic Advising Coordinators: Dr. Robert Brophy, Dr. Eileen Lothamer, Dr. David Peck.

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 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.

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

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 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, 468A,B; three courses in American literature: 370A,B and one course from 474, 475, 476, 477A,B, 478; one author seminar: 469 or 479; electives to make up a total of 41 units. Recommended: 331 (classical background), 489 (literary criticism); courses in English linguistics; additional courses in the 450, 460, 470 series; 405; 406; 407; 499; Comparative Literature 330A,B. English 481 or 482 may be elected, but not both, in satisfying this requirement.

Language and Composition Option

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 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, 425, 426; one course in composition chosen from 300, 310, 400; 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

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 including the following:

Lower Division: English 184, 205 or 206, 250A,B.

Upper Division: Three classes in creative writing chosen from 405, 406, 407, 415 (these courses may be repeated for credit); Theatre Arts 380 or 480; Radio-TV 304; three courses in recent literature, literary genres and/or literary criticism (English 385, 386, 459, 467A,B, 474, 475, 476, 477A,B, 489); electives to make up a total of 41 units. English 481 or 482 may be elected, but not both, in satisfying this requirement.

Special Option

The opportunity to pursue individually designed 41-unit programs of study is provided for students who wish a major in English but who have special interests 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 the department chairperson) 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 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

Secure Ryan Act information in English Department Credentials Office, HOB-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: 482, Comparative Literature 232, Speech Communication 355E (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

English 420, 421; three units from the following: 423, 426, 428; six units from the following: 300, 423, 426; electives to complete.

Requirements for Creative Writing Teaching Option: 19 units

Nine-12 units from the following: 405, 406, 407, 415; nine-12 units from the following: 385, 386, 459, 467A, 467B, 474, 475, 476, 477A, 477B, 489. The total number of units required in English is 41, at least 29 of which must be upper division.

Minor in English

The degree minor in English requires a minimum of 20 units and must include:

(A) One course selected from English 101, 184, 205, 206, 300, 310, 400, 405, 406.
(B) One course selected from English 320, 325, 420, 421, 423, 426.
(C) Two courses selected from English 250A,B, 370A,B.
(D) English electives to total 20 units except that English 317 and 417 will not be accepted.

Students interested in the Multi-Subjects Credential should take English 481, while students interested in the Single-Subject Credential should take English 482.

Master of Arts Degree in English
Master of Arts Degree in Linguistics

Programs of study leading to the master of arts degree in English and the interdisciplinary master of arts degree in linguistics are offered. For detailed information concerning requirements see the *Graduate Bulletin.*

Certificate in Honors English

Description: The Honors English program offers qualified students an additional opportunity to pursue excellence through seminar courses; it encourages students to develop skills in independent study cutting across traditional course boundaries.

Eligibility: Following requirements or their equivalent: Satisfactory composition of a one-hour essay; grade point average of 3.00; completion of 30 units of college work, including English 101 or 184 and English 250A and B; personal interview by a member of the Departmental Honors Committee.

Certificate Requirements: Completion of a recognized degree program in English (presently 41 units), including a course in Shakespeare, a senior seminar and three or more Honors English courses (minimum of nine upper division units) with at least a B average; reading knowledge of a foreign language, or completion of two semesters of a foreign language at the college level with a grade of C or better; passing grade in a two-hour comprehensive examination.

Interested students should contact the English Department.

Lower Division

100. Composition (3) F, S Staff
Writing expository prose. Open to students who score 18 or above on the ACT, 425 or above on the SAT, or who have passed a college level remedial English course. Students not meeting these requirements need English Department approval.

101. Composition (3) F, S Staff
Prerequisite: English 100. Writing expository prose, with emphasis on the research paper. For non-English majors.

180. Appreciation of Literature (3) F, S Staff
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 Staff
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 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 (3) F Fried, Lee, Polk
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 Staff
Prerequisite: English 100. Representative selections from English writers to and since the mid-eighteenth century.

Upper Division

English 100 is a prerequisite for all upper division courses.

300. Advanced Composition (3) F, S Staff
Prerequisite: English 101 or 184 or 317 or a baccalaureate degree. 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 credential candidates failing to make a satisfactory score on the Advanced Composition Test. Not open to students with credit in English 300 except for the multiple-subject credential under the Ryan Act.

310. Applied Composition (3) F, S Sullivan, Wylder
Prerequisite: English 101 or 184 or 317 or a baccalaureate degree. Intensive practice in writing, correcting and evaluating compositions, with specific reference to contemporary classroom situations and problems. Required for all credential candidates in English.

317. Technical Writing (3) F, S Staff
Prerequisite: English 100. Expository writing on technical subjects dealt with in 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 Staff
Advanced study of the principles of English grammar.

325. Models of English Grammar (4) F, S McCullough, Ross
Introduction to structural and transformational models of American English, with reference to traditional grammar.

331. Classical Background of English Literature (3) F Lubbe
Greek and Roman literature, in translation, in relation to English literature; the interrelations of classical literature with philosophy and art.

363. Shakespeare I (4) F, S Staff
Principal plays of Shakespeare. Not open to students with credit in English 464 or 464A.

370A,B. Survey of American Literature (4,4) F, S Staff
Representative selections from American writers to and since about 1865.

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 Staff
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, Stephens
Continental, English, and American drama from Ibsen to the present.

400. Advanced Composition (3) F, S Ames, Aspiz, Schwab
Prerequisite: English 300 or (with a grade of B or better) 101, 184 or 317. Intensive practice in expository prose, with emphasis on increasing competence in organization, style and diction. Not open to students with credit in English 300B.

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.)

409. Writing Literary Criticism (3) S Staff
Prerequisite: English 101 or 184. Critical writing, with attention to published models of scholarly and evaluative essays.

415. Advanced Fiction Writing (1-3) F, S Fried, Hermann, Polk
Prerequisite: English 405 or 407. Advanced students in creative writing meet for criticism and evaluation of each other's work. May be repeated for credit to a maximum of six 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 Syntax (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. Development of Modern English (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.

451. English Literature to 1500 (3) F Axelrad, Bell, Knafel, Lubbe
English literature before 1500, including Old and Middle English in translation.

452. English Literature 1500-1603 (3) F Brooks, Crane, Gilde, Orgill
English literature of the Tudor period, especially non-dramatic.

453. English Literature 1603-1660 (3) S Ames, Axelrad, Gilde, James, Purcell
English literature of the Stuart and Commonwealth periods, especially non-dramatic.

454. English Literature 1660-1740 (3) F Purcell, Skarsten
English literature of the Restoration and Augustan periods, especially non-dramatic.

455. English Literature 1740-1798 (3) S Black, Crawford, Skarsten
English literature of the Johnsonian and pre-Romantic periods, especially non-dramatic.

456. English Literature 1798-1832 (3) S Avni, Crawford, Lim, Rodabaugh, Skarsten
English literature of the Romantic period, especially non-dramatic.

457. English Poetry 1832-1900 (3) F Darbee, Peterson, Rodabaugh
English poetry of the Victorian period.

458. English Prose 1832-1900 (3) S Baker, Darbee, Lothamer, Rodabaugh
English prose of the Victorian period, especially non-fiction.

459. Twentieth Century English Literature (3) F Locklin, Mittleman, Peck, Samuelson, Wilson
English literature from about 1900 to the present.

462. Chaucer (3) S Lubbe
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 Purcell
Works of John Milton.

467A,B. The English Novel (3,3) F, S Lothamer, Lyon, Nielsen
History and development of long prose fiction in the British Isles to and since 1832.

468A,B. English Drama (3,3) F, S Brooks, Crane, Orgill
History and development of English drama, to and since 1642, excluding Shakespeare.

469. Critical Studies in Major English Writers (4) F, S Staff
Prerequisites: 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. Not open to graduate students.

474. Twentieth Century American Literature (3) S Staff
American literature from about 1914 to the present.

475. The American Short Story (3) F Staff
History and development of the short story and its criticism in the United States.

476. American Poetry (3) F Staff
History and development of poetry and its criticism in the United States.

477A,B. The American Novel (3,3) F, S Staff
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 Staff
History and development of drama and its criticism in the United States.

479. Critical Studies in Major American Writers (4) F, S Staff
Prerequisites: 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. Not open to graduate students.

481. Children's Literature (3) F, S Baker, Lawson, Masback
Prerequisite: One college course in literature. Survey of literature suitable for children.

482. Literature for Adolescents (3) F, S Staff
Prerequisite: One college course in literature. Survey of literature suitable for adolescents.

497. Directed Studies in Composition (3) F, S Staff
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 Staff
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 Staff
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)

525. Analytical Phonology (4)

530. Theory of Rhetoric (3)

550. Old English Language and Literature (4)

551. Middle English Language and Literature (4)

589. History of Literary Criticism (3)

620. Seminar in Special Topics in Linguistics (4)

623. Seminar in Dialect Study (4)

652. Seminar in the English Renaissance (4)

653. Seminar in the Age of Milton (4)

654. Seminar in Restoration Literature (4)

655. Seminar in Eighteenth Century Literature (4)

656. Seminar in Romantic Literature (4)

657. Seminar in Victorian Literature (4)

659. Seminar in Twentieth Century English Literature (4)

661. Seminar in Beowulf (4)

672. Seminar in Nineteenth Century American Renaissance (4)

673. Seminar in American Realism (4)

674. Seminar in Twentieth Century American Literature (4)

681. Seminar in Major Authors (4)

683. Seminar: Special Topics in Literature (4)

696. Seminar in Techniques of Literary Study (4)

697. Directed Research (1-3)

698. Thesis or Project (2-6)

American Indian Studies

Interim Director: David Hood.

Academic Advising Coordinator: Dr. David Hood.

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 investigate the condition and problems of the American Indian today with a view to formulating possible solutions and publicizing the results of its investigations. The program aims not only to meet the needs of the reservation and urban American Indian but also to enlighten students generally 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 to diverse courses designed to present various aspects of the Indian community and way of life which will reveal differing opinions about this minority, its problems, and future. Specifically, this program is designed to serve the interests and goals of (1) 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 teaching, social work, anthropology, school administration and psychology, (3) the general student who wishes to explore a further educational dimension by focusing on an ethnic minority.

Certificate in American Indian Studies

Students pursuing any approved degree or credential program of the University may at the same time earn a Certificate in American Indian 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 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. A minimum of 24 units distributed as follows: American Indian Studies 132, 332; 9 units selected from American Indian Studies 130, 131, 133, 334; and 6 or more units selected from: American Indian Studies 330, 331, 333, 335, 360, 490, 499; Anthropology 321, 322.

Interested students should apply to the Director, American Indian Studies Program.

Minor in American Indian Studies

A minimum of 20 units which must include American Indian Studies 132, 332; American Indian Studies 130 or Anthropology 120; American Indian Studies 131 or 334; and three of the following: American Indian Studies 330, 331, 333, 335, 360, 499; Anthropology 321, 322.

Lower Division

130. Introduction to American Indian Studies (3) F Staff
Broad survey and introduction to American Indian history and culture.

131. The American Indian in Transition (3) S Staff
Prerequisite: American Indian Studies 130 or consent of instructor. Study of the American Indian of the 20th century. Comparison of social, economic and cultural factors in the life of the Indian on and off the reservation.

132. Arts and Crafts of the American Indian (3) S Staff
Prerequisite: Consent of instructor. Study of various tribal designs to promote an appreciation of the arts and crafts of the American Indian. Costume design and information and practice with materials, methods and procedures. (Lecture/activity.)

133. The Southeast Indians (3) F Staff
Prerequisite: American Indian Studies 130 or consent of instructor. Comparative study of the numerous tribes of the Southeastern United States, including their histories, tribal similarities and differences and over-all life styles from earliest times to the present.

Upper Division

330. Indians of the Pacific Coast (3) F Staff
Prerequisite: American Indian Studies 130 or 131 or Anthropology 421 or consent of instructor. A comparative study of the Indians of the Pacific Coast including Alaska, Canada, and the United States, with emphasis on their cultural differences and likenesses.

331. Indians of the Great Plains (3) S Staff
Prerequisite: American Indian Studies 130 or 131 or Anthropology 321 or consent of instructor. A comparative study of the numerous American Indians of the Great Plains area. Tribal similarities, differences; overall life-style of the Plains Indians.

332. The Bureau of Indian Affairs (3) F Staff
Prerequisite: American Indian Studies 130 or 131 or consent of instructor. The origins, history and functions of the Bureau of Indian Affairs with emphasis on its influence upon today's American Indians.

333. American Indian Literature (3) F Staff
Prerequisite: American Indian Studies 130 or consent of instructor. Reading and discussion of American Indian literature from ancient Nahuatl and Maya to modern writings.

334. The American Indian in the 19th Century (3) F, S Staff
Prerequisite: American Indian Studies 130 or 131 or Anthropology 321 or consent of instructor. The westward expansion of the United States from the Indian point of view. Expropriation of lands and destruction of the Indian way of life; impact of American Indian upon American history.

335. American Indian Religion and Philosophy (3) S Staff
Prerequisite: American Indian Studies 130 or 131 or Anthropology 305 or 321 or Religious Studies 301, or consent of instructor. A comparative study of the religious beliefs and philosophical thought of the American Indian. Some tribal differences and similarities; the American Indians' special contribution.

360. American Indian Cultural Patterns (3) SS and on demand Staff
Prerequisite: American Indian Studies 130 or consent of instructor. A course designed to investigate the cultural patterns of the various native American peoples and to offer the participants knowledge specifically prepared to aid in both elementary and secondary teaching fields.

490. Special Topics in American Indian Studies (1-3) On demand Staff
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*.

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

Asian American Studies

east west

Director: Mr. Lloyd T. Inui.

Professor: Johnson.

Assistant Professor: Odo.

Academic Advising Coordinator: Mr. Lloyd T. Inui.

Asian American Studies is a unique program with two distinct functions: to research 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 training 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 Hindi, the first, second and third year of Japanese and a course in Indic literature.

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 cooperating 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 315, 400A,B, 420A,B, 425, 440; additional courses selected from Asian American Studies 200, 310, 320, 330, 340, 380, 499.

Interested students should apply to the Director, Asian American Studies Program, Mr. Lloyd Inui.

Minor in Asian American Studies

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 American Studies 320, 330, 370, 380, 490, 499.

Group II: Asian American Studies 210A,B, 315, 400A,B, 420A,B, 425, 440.

Lower Division

102. Asian American Experience (3) F, S Staff
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 Staff
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.

210A,B. Conversational Japanese (3,3) F, S Staff
Prerequisite: Consent of instructor. Intensive instruction in developing conversational skill in Japanese. Emphasis on speaking and understanding spoken Japanese as a tool for working in the Japanese American community.

220. Asian American History (3) F, S Staff
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 Staff
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.

315. Asian American Theatre Workshop (3) S Staff
Exploration of various methods of presenting the minority experience of Asian American people in dramatic form. Using both classroom and workshop techniques, the students will gain knowledge of Asian theatre and participate in an actual Asian American theatre production at the semester's end.

320. Mass Media and the Asian American (3) S Staff
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 Staff
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 Staff
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 Staff
Prerequisite: Asian American Studies 102 or consent of instructor. Socio-economic, 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 Staff
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 Staff
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.

400A,B. Martial Arts (3,3) F, S Staff
Prerequisites: Asian American Studies 102 and consent of instructor. Analysis of the martial arts including the development of techniques and study of the philosophic concepts and values that underlie the idea of achieving and integration of the mind and body. (Lecture, activity.)

420A,B. Asian American Cinematography (3,3) F, S Staff
Prerequisite: Consent of instructor. Utilizing the motion picture camera the class will explore the visual perspective of Asian people as related to their cultural evolution. Students will study the cinemagraphics of Asian film makers and will make films as a means of self-expression.

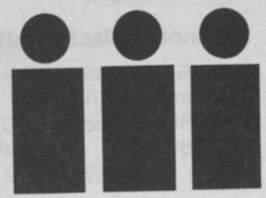
425. Asian American Literary Influences (3) F Staff
Prerequisite: Consent of instructor. Study and analysis of selected Asian and Asian American authors with special emphasis on literature as a means of creative expression. Students will participate in a creative writing workshop concentrating on poetry, prose fiction, playwriting or journalistic writing.

440. Community Workshop (3) S Staff
Prerequisite: Asian American Studies 345. Field work in community organizations for the purposes of analyzing their intent, function, limitations and effectiveness; creating working models for the improvement of organizations as well as creating new organizations to meet community needs.

490. Special Topics in Asian American Studies (1-3) F, S Staff
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 Staff
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.

Black Studies



Department Chairperson: Dr. Skyne Uku.
Associate Professors: Hartsfield, Obatala.
Assistant Professors: Buchanan, Rahh, Uku, White.
Academic Advising Coordinator: 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 serve (1) teachers; (2) those entering a variety of occupations, including social case work, school administration, urban planning, government, recreation, journalism, business, criminology, law, foreign service, 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

A minimum of 39 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.

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, 420A, B; *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

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, 420A, B; *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. Survey of Afro-American History (3) S Buchanan
Chronological sequence of events, their causes and their effects upon the lives of Afro-Americans. Survey of United States history through the eyes of the black man. (Lecture-discussion 3 hours.)

140. Introduction to African and Afro-American Literature (3) F, S Staff
Study of representative works, in English and translation, of black writers from Africa and non-African countries.

155. Afro-American Music (3) F Buchanan
Non-technical survey of Afro-American music.

160. Black Arts (3) F Staff
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 World: Ancient Beginnings to European Incursions (3) F, 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.

202. Black World: After Slavery (3) F, S Uku
History of social and political change in the black world in the last two centuries, including the decline of slavery; the rise of colonialism and partition, independence, nationalism and the struggle against colonialism, neo-colonialism and racism.

210. Afro-American Community (3) F, S White
Social structure and change in the community life of Afro-Americans. Institutional and stratification patterns, demographic changes, social movements and community organization programs.

Upper Division

304. World Colonialism (3) F, S 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
Study of the devices, styles, problems and dynamics of political activity in the black community.

331. Black Juvenile (3) F, S Staff
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
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 Obatala
Analysis of Pan-African cultural geography and a study of human behavior in Pan-African societies. Not open to students with credit in Black Studies 110E.

340. Development of Afro-American Literature (3) F Staff
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 Staff
Individual and group pursuit of special problems and projects in African and Caribbean literature.

346. Black Theatre Workshop (3) F, S Staff
Workshop to develop creative techniques for projecting the black image through the theatre; includes study of acting, directing, staging, lighting, and other arts of the theatre.

353. Black Religion (3) F, S Staff
Prerequisite: Black Studies 337 or consent of instructor. General nature of religion 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 Kaluga, Uku
Survey of African Art from antiquity to the present, with principal focus on sub-Saharan 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 White
Survey of Afro-American intellectual history with emphasis on social theories and polemic writing.

404. Twentieth Century Revolution in the Third World (3) F, S Uku
Emphasis is on the bourgeois, democratic revolution after world War I to the current revolutions which take the form of a proletarian-socialist world revolution.

410. The Black Family (3) F, S White
Prerequisite: Consent of instructor. Historical study of the psychological development of the black family.

420A,B. Psychological Needs of the Ghetto Child (3,3) F, S Rahh
Study of the psychological needs of children, followed by an exploration of the strengths and weaknesses of the black community as it influences the black child. Study of the ways education may benefit the black child.

432. Advanced Studies in Afro-American Music (3) F, S Buchanan
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) F, S Staff
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.

451. Black Legal Remedies (3) F, 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.

452. Ecology of Black Crime (3) F, S Staff
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, S 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.

490. Special Topics in Black Studies (1-3) On demand Staff
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 Staff
Prerequisite: Consent of instructor. Permits individual students to pursue topics of special research interest. May be repeated to a maximum of six units.

Mexican American Studies

Department Chairman: Mr. Alejandro C. Osuna.

Associate Professor: Sanchez.

Assistant Professors: Hidalgo, Isais, Lopez, Nava, Osuna, Ramirez.

Instructor: Cano.

Academic Advising Coordinator: Mr. Alejandro C. Osuna.

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

Lower Division: A minimum of 16 units distributed as follows: 13 units from Mexican American Studies 100, 103, 104, 203 and three units selected from Mexican American Studies 205, 210A,B or 230.

Upper Division: A minimum of 24 units distributed as follows: 12 units of core requirements selected from Mexican American Studies 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*—Mexican American Studies 305, 312, 420, 425, 460A,B; *Group II*—Mexican American Studies 300, 310, 350, 360, 375, 380, 400, 443, 450; *Group III*—Mexican American Studies 340, 442, 443, 444 and three elective units from any group or Mexican American Studies 499.

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 successful completion of the proficiency examination.)

Minor in Mexican American Studies

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 which must include (a) core requirements: Mexican American Studies 420 or 425; nine units taken from the following courses: Mexican American Studies 300, 310, 350, 443; (b) electives: 12 or more units selected in consultation with an adviser, preferably with at least one course in each of the following groups:

Group I: Mexican American Studies 205, 305, 312, 420, 425, 460A,B.

Group II: Mexican American Studies 100, 210A,B, 220, 230, 300, 310, 350, 360, 375, 380, 400, 443, 450, 499.

Group III: Mexican American Studies 340, 442, 443, 444.

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:
   (a) Core requirement: either Mexican American Studies 420 or 425, nine units taken from Mexican American Studies 300, 310, 350, 443.
   (b) Electives: 12 or more units selected in consultation with an adviser, preferably with at least one course in each of the following groups: *Group A:* Mexican American Studies 205, 305, 312, 420, 425, 460A-B; *Group B:* Mexican American Studies 100, 210A,B, 220, 230, 300, 310, 350, 360, 375, 380, 400, 443, 450, 499; *Group C:* Mexican American Studies 340, 442, 443, 444.

Lower Division

100. The Chicano in United States Society (3) F, S Staff
Focuses on the Hispano, Mexican and Indian heritage of the Chicanos of the Southwest and their contribution to the United States with emphasis on the political, educational, economic and sociological facets of their role in contemporary U.S. society.

103A. Bilingual Communication Skills—Spanish (4) Cano, Osuna, Ramirez
Prerequisite: Placement test. Designed for those students from a Spanish speaking background who have minimal ability in the Spanish language. Students completing this course may enroll in Mexican American Studies 103B.

103B. Bilingual Communication Skills—Spanish (4) Cano, Osuna, Ramirez
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 Cano, Osuna, Ramirez
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 Cano, Osuna
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 Cano, Osuna, Ramirez
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 Cano, 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.

220. Teatro Chicano (3) F, S Staff
Utilizes both traditional and innovative theatre methods such as satire, pantomime, parodies, the absurd and improvisation to communicate the historical and contemporary problems confronting the Chicano. Emphasis on street type theatre as a vehicle of communication.

230. Chicano Community Organization (3) F, S Lopez, Nava
Analysis of Chicano community groups; emphasis on development of community organizational techniques. (Lecture 2 hours, field trips.)

Upper Division

300. History of the Chicano in the Southwest (3) F, S Isais, 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) F, S Isais
Impact of American mass media from the nineteenth century to the present. Mass media in the barrio.

305A,B. Mexican Literature in Translation (3,3) S Osuna, Ramirez
Prerequisite: Completion of Mexican American Studies 205 or any other lower division literature course. Advanced two-semester course that covers the literature of Mexico from and including Pre-Columbian times to the present. 305A: Includes the indigenous Pre-Columbian, the colonial and post colonial literatures up to 1900. 305B: Continuation from 1900 and the literature of the Revolution to the present.

310. Chicano Thought (3) F, S Isais, 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, S Hidalgo, Nava, 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 Isais, Lopez
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 right 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 vocational programs in the penal system in terms of overall effectiveness relative to the Chicano. Selected field trips will be scheduled throughout the semester.

380. Chicano Roots in Precolumbian Mexico (3) F Isais, Sanchez
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 America.

400. Chicano Roots in Modern Mexico (3) F, S Isais, Sanchez
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 Linguistics 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.

420. Chicano Heritage in the Arts of Mexico and the Southwest (3) F, S Staff
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 103 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 Staff
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, S Hidalgo
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, S Nava
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
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
Prerequisites: Elementary Education 450 or Secondary Education 457, minimal 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.

450. Research Methods in the Chicano Community (3) F, S Staff
Prerequisite: Consent of instructor. Supervised research experience in problems pertaining to the Chicano community, including private and public agencies in education, welfare and law enforcement; includes a review of basic techniques of social research.

460A-B. Chicano Creative Writing Workshop (3) F, S Osuna, Ramirez
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.

499. Directed Studies (1-3) F, S Staff
Prerequisite: Consent of instructor. Preparation of research reports on selected topics relating to the Chicano. May be repeated for a maximum of six units.

French-Italian

Department Chairman: Dr. F. M. Swensen.

Professors: Swensen, Thomas.

Associate Professors: Quillen, Winter, Yperman.

Assistant Professor: Kessler.

Credential Adviser: Mr. Herbert Winter.

Academic Advising Coordinator: Dr. F. M. Swensen.

French

The 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 the 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.

Major in French for the Bachelor of Arts Degree

Lower Division: One year of intermediate French, French 214. Students who have completed sufficient high school French may take upper division courses as soon as lower division requirements have been met.

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. 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

A minimum of 20 units which must include: French 312, 313, 314.

Master of Arts Degree in French

A program of study leading to the master of arts degree in French is offered. For detailed information concerning requirements see the *Graduate Bulletin.*

Lower Division

101A-B. Fundamentals of French (4,4) F, S Staff
Practice in grammar, reading, pronunciation, writing and conversation.
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-B. Beginning Reading for Non-Majors (3,3) F, S Yperman
103A. 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.
103B. Prerequisite: French 103A or equivalent.

201A-B. Intermediate French (4,4) F, S Staff
Readings of representative modern writers with oral and written practice and reports.
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.

203A-B. Advanced Reading for Non-Majors (3,3) F, S Yperman
203A. Prerequisite: French 103B or equivalent. Continuation of 103A-B. Perfects skills acquired in 103A-B to meet stated objectives.
203B. Prerequisite: French 203A or equivalent.

214. Beginning Conversation (3) F, S Staff
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 Staff
Prerequisite: French 201B or equivalent. Extensive reading of French writings, review of grammatical principles, and a general consolidation of the four language skills: reading, comprehension, composition and conversation.

313. Advanced French II (3) F, S Staff
Prerequisite: French 312 or equivalent. Sequel to French 312, with continuing emphasis on extensive reading of French texts and periodicals, regular composition work based on these readings, and the development of increased mastery of the spoken language through student discussions of the readings.

314. Advanced Conversation (3) F, S Staff
Prerequisite: French 214 or consent of instructor. Continuation of French 214.

335. Survey of French Literature I (3) F Staff
Prerequisite: Upper division standing in French. From the Middle Ages through the Eighteenth Century.

336. Survey of French Literature II (3) S Staff
Prerequisite: Upper division standing in French. Nineteenth and Twentieth Centuries.

411. Advanced French Syntax and Composition (3) F Staff
Prerequisites: French 312 and 313 or equivalent. Special emphasis on the writing of short composition and commercial letters with advanced work in translation.

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.

415. Introduction to Romance Linguistics (3) F Staff
Prerequisites: French 312 and 313 or consent of instructor. Basic concepts of linguistic science; techniques of structural analysis with illustrations taken primarily from Romance languages; their application in teaching foreign languages.

440. French Civilization (3) F, S Quillen, Yperman
Prerequisite: French 314 (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.

456. Contemporary French Novel (3) SS Winter
Prerequisites: French 335, 336 or consent of instructor. Readings in contemporary French writers, such as Gide, Rolland, Proust, Romains and Sartre for understanding of current literary trends.

470. French Literature of the Middle Ages (3) F, 1976 and every third semester 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 (3) S, 1977 and every third semester Kessler, Yperman
Prerequisites: 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 (3) F, 1976 and every third semester Quillen
Prerequisites: French 335, 336 or consent of instructor. Study of representative drama, poetry and prose of the century.

474. The Age of Enlightenment (3) F, 1976 and every third semester Kessler
Prerequisites: French 335, 336 or consent of instructor. Study of representative writers and thinkers of the century. Drama, poetry and prose.

476. French Romanticism (3) SS Swensen
Prerequisites: French 335, 336 or consent of instructor. Most representative French writers in the Romantic movement from Chateaubriand to Victor Hugo, with readings in prose, drama and poetry.

477. French Literature of the Nineteenth Century (3) F, 1976 and every third semester Swensen
Prerequisites: French 335, 336 or consent of instructor. Study of representative writers of the century. Drama, poetry and prose.

478. French Realism and Naturalism of the Nineteenth Century (3) SS Swensen, Yperman
Prerequisites: French 335, 336 or consent of instructor. Most representative French writers in the movements of Realism and Naturalism. Readings from such writers as Balzac, Flaubert, Maupassant and Zola.

479. French Literature of the Twentieth Century (3) S, 1977 and every third semester Winter, Yperman
Prerequisites: French 335, 336 or consent of instructor. Study of representative writers of the century. Drama, poetry and prose.

499. Directed Studies (1-3) F, S Staff
Prerequisite: Consent of instructor. 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

600. Seminar in the History of the French Language (3)

604. Seminar in a Century of French Literature (3)

685. Seminar in French Literary Masters (3)

690. Seminar in Explications de Texte (3)

695. Seminar in Literary Themes (3)

697. Directed Research (1-3)

698. Thesis (2-6)

Italian

Lower Division

101A,B. Fundamentals of Italian (4,4) F, S Staff
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 (3,3) F, S Staff
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.

Upper Division

312. Advanced Italian I (3) F, S Staff
Prerequisite: Italian 201B. Extensive reading of Italian writings, review of grammatical principles and a general consolidation of the four language skills: reading, comprehension, composition and conversation.

313. Advanced Italian II (3) F, S Staff
Prerequisite: Italian 312 or equivalent. A sequel of Italian 312 with continuing emphasis on extensive reading of Italian texts, regular composition work based on these readings and the development of increased mastery of the spoken language through student discussion of the readings.

Geography

Department Chairman: Dr. John C. Kimura.

Professors: B. Anderson, Ericksen, Karabenick, Kimura, Steiner, J. Wilson.

Associate Professors: Outwater, Scantling, Splansky, Wheeler.

Assistant Professors: Debysingh, G. Peters, Tyner.

Credential Adviser: Dr. James N. Wilson.

Academic Advising Coordinator: Dr. John C. Kimura.

Geography integrates information from many social and natural sciences by focusing upon human activities within the context of their physical and cultural environment. Because of the diversity of subject matter which it considers, geography offers a broad, liberal education which is applicable to many careers. These include elementary, secondary and college teaching; cartography; regional, urban and environmental planning; business; government and the foreign service.

The Geography Department offers the bachelor of arts and master of arts degrees, as well as a minor. Certain geography courses are applicable to teaching credential programs; to the degree in earth science and to certificate programs in urban, environmental, Asian, Latin American and Russian and East European studies.

Students may obtain from the department materials describing the major, minor and graduate programs in geography, and geography programs in relation to teaching credential requirements.

Major in Geography for the Bachelor of Arts Degree

General Option

Lower Division: Geography 100, 140, 152, 160 or equivalents.

Upper Division: 24 units consisting of Geography 304 or 306, 380, and 18 units distributed as follows: (1) systematic courses: nine to 15 units chosen from 355, 440, 442, 444, 452, 460, 466, 467, 470, 494*, 497*, and (2) methods and techniques courses: 0 to six units chosen from 387, 388, 390, 482, 490, 494*, 496, 497*, and (3) regional courses: three to six units chosen from 304, 306, 308, 309, 313, 314, 316, 317, 318, 321, 322, 326, 494*, 497*.

Professional Option

Lower Division: Geography 100, 140, 152, 160 or equivalents.

Upper Division: 24 units consisting of Geography 380, 387 or 388, 440 or 442, or 444, 496 and 12 units distributed as follows: (1) systematic courses: nine units selected from 355, 440, 442, 444, 452, 460, 466, 467, 470, 494*, 497*, and (2) methods and techniques courses: three units selected from 390, 482, 490, 494*, 497*.

Minor in Geography

A minimum of 21 units which must include:

Lower Division: Geography 100, 140, 152 or equivalents.

Upper Division: Geography 306, 380, 440; one course selected from Geography 304, 444, 452, 466, 470.

Master of Arts Degree in Geography

A program of study leading to the master of arts degree in geography is offered. For detailed information concerning requirements see the *Graduate Bulletin.*

Lower Division

100. World Regional Geography (3) F, S Staff
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 Staff
Systematic study of man's physical environment including world patterns and interrelationships of landforms, climate, natural vegetation and soils, emphasizing ecological problems.

152. 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, Splansky
Nature of culture and its geographic aspects. Environmental perception, attitudes and cultural dynamics examined with reference to the formation of patterns of man's use of the land. Not open to students with credit in Geography 360.

204. The Southern California Urban Environment (3) F, S Splansky
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 of Riverside and San Bernardino counties. Not applicable toward a geography major.

Upper Division

304. California (3) F, S Splansky, Steiner, Wheeler, Wilson
Regional and topical analysis of California with emphasis upon environmental systems and economic and social problems.

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* At the time of enrollment in 494 or 497 the student must obtain written departmental notification whether the course will meet systematic or methods and techniques or regional requirements for the major.

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 patterns 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, settlement and political relationships that characterize them.

309. North Africa and the Middle East (3) S Karabenick
Human and physical settings of North Africa and the Middle East are examined. Special emphasis is placed upon recent economic and political development, stressing those factors which underlie the region's general instability.

313. Eastern Asia (3) F, 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, S Debysingh
Problems of population, underdeveloped subsistence economies, incipient industrialization and cultural impact on the environment in the southern part of Monsoon Asia from India and Pakistan to Vietnam, Indonesia and the Philippines. Current topics affecting the land and peoples of the areas.

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.

317. Eastern Europe (3) S Staff
Systematic and regional study of the physical, economic and cultural geography of the nations of Eastern Europe, excluding the Soviet Union.

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 Staff
Survey of Mexico, Central America and the Caribbean Islands as human habitats, emphasizing the environmental and cultural factors which shaped their present day characteristics.

322. South America (3) S Staff
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.

355. 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. (Lecture 3 hours.)

356. Man and the Coastal Environment (3) F, S Splansky, Steiner
Coastal zones as unique geographic environments. Man's past and present impact 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.)

380. Map Reading and Interpretation (3) F, S Debysingh, Tyner
Prerequisite: One lower division course in geography or consent of instructor. Information retrieval techniques applicable to maps, including the study of symbolization, scale and projections. (Lecture, problems 3 hours.)

387. 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. (Lecture-discussion 2 hours, supervised field work 2 hours.)

388. Field Methods in Urban Analysis (3) F Karabenick
Prerequisite: Geography 380 or consent of instructor. Introduction to urban field techniques, including formulation of field plans, recording direct observation, field mapping, sampling techniques, interviewing and compilation of data. (Lecture-discussion 2 hours, supervised field work 2 hours.)

390. Introduction to Geographic Analysis (3) S Peters
Prerequisites: Six units of geography. Application of quantitative methods to the analysis of spatial distributions, associations and interactions.

440. Land and Water Environments (3) F, S Kimura, Steiner, Wheeler
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) 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.

444. Climatology (3) F, S Kimura
Prerequisite: Geography 140 or Geology 463. The elements, controls, descriptive and explanatory analysis of the distributional characteristics, classification of climates and the relationship of climate to the other major elements of geography.

452. Advanced 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.

460. Population Geography (3) F, S Peters
Definition and measurement of population characteristics; determinants of population size, density and distribution; historical geography of world population, migration, spatio-temporal aspects of the demographic and mobility transitions, geo-demographic problems of the developed and underdeveloped worlds.

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 and the evolution of cities are studied.

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 patterns will be discussed in terms of theoretical and practically applied urban planning solutions. (Lecture, problems 3 hours.)

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470. Political Geography (3) F, S Wilson
Prerequisite: Geography 100 or consent of instructor. Comparative study of the earth's politically organized regions and related systems. Varied approaches are explored, such as power analysis, genetic analysis and functional analysis of political units. Stress is upon political geographic concepts used in analyzing the viability of states and nations.

482. Elements of Cartography (3) F, S Tyner
Prerequisites: Geography 380, consent of instructor. Techniques in construction of maps, charts and diagrams, including experience in the use of cartographic tools. (Lecture-discussion 2 hours, laboratory 3 hours.)

490. Quantitative Methods (3) F Peters
Prerequisite: Geography 390 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.

494. Special Topics (1-3) On demand Staff
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.

496. Literature and Methods in Geography (3) F Ericksen
Prerequisite: Consent of instructor. Undergraduate seminar in the methods, theory and techniques of geographic investigation with emphasis upon classical and contemporary literature.

497. Directed Studies (1-3) F, S Staff
Prerequisite: Consent of instructor. Individually directed studies of special problems in geography. May not be credited toward the major in geography without written department consent in advance of enrollment.

Graduate Division

600. Seminar in Regional Geography (3)

640. Seminar in Physical Geography (3)

650. Seminar in Cultural Geography (3)

652. Seminar in Economic Geography (3)

666. Seminar in Urban Geography (3)

697. Directed Research (1-3)

698. Thesis (1-6)

Geological Sciences

Department Chairman: Dr. Paul J. Fritts.

Professors: Chan, Conrey, Dennis, Ehrreich, Green, Lumsden, C. Walker.

Associate Professors: Fritts, Grannell, R. Winchell.

Academic Advising Coordinators:
Geological Sciences: Dr. Paul J. Fritts.
Earth Science: Dr. Roswitha Grannell.

Geology is the study of the solid earth. Within the broad field of geology 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 departmental adviser.

Major in Geology for the Bachelor of Science Degree

Lower Division: Geology 103, 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. (1) General geology: Physics 100A-B, (2) Marine geology: Mathematics 224; Physics 151, 152, (3) Mineralogy-petrology: Mathematics 224; Chemistry 251, 251L; Physics 151, 152, (4) Paleontology-stratigraphy: Physics 100A-B, (5) Structural geology: Mathematics 224; Physics 151, 152.

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 : 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: Geology 460 and 461 or Chemistry 371A-B; Geology 463, 464, 465, 466, (3) Mineralogy-petrology: Geology 450, 490d; Chemistry 371A-B, 451, (4) Paleontology-stratigraphy: Geology 443, 450; three courses selected from Geology 461, 464, 465; Biology 416, 437, (5) Structural geology: Geology 450, 460, 490j and four additional units approved by adviser.

Earth Science

Earth science is the interdisciplinary study of materials, energy and resources in four areas: (1) the solid earth and its interior, (2) the atmosphere, (3) the hydrosphere, (4) the earth's environment in space and time. The objectives are

to offer an interdisciplinary curriculum to fill the need for the training of secondary teachers in earth science, to offer a degree program which will provide an avenue in science with sufficient elective choice to encourage both a strong major and minor program in science and to make available a science degree valuable as a base for more intelligent appraisal of scientific environment, natural resources, land use, pollution and other areas of critical importance in today's world.

Major in Earth Science for the Bachelor of Science Degree

Lower Division: Geology 102 or 103, 104, 140; Astronomy 100; Biology 200; Chemistry 111A-B; Mathematics 117; Physics 100A-B.

Upper Division: Geology 306 (three units), 310, 320A-B, 331, 430, 463, 465; Geography 444 and one additional course in geology approved by adviser.

Minor in Geology

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

A program of study leading to the master of science degree in geology is offered. The Geological Sciences Department is one of three departments in The California State University and Colleges system in Southern California which offers courses leading to the master of science in geology. The three universities in the joint program are California State University, Los Angeles; California State University, Northridge and California State University, Long Beach. For detailed information concerning requirements see the *Graduate Bulletin*.

Lower Division

102. General Geology (3) F, S Staff
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.

103. Introductory Geology (2) F, S Staff
Prerequisite: Concurrent enrollment in Geology 104 or 105. Elementary study of the earth, particularly the structure, composition, origin, distribution and modification of earth materials. Not open to students with credit in Geology 100 or 102.

104. Geology Laboratory (1) F, S Staff
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 Staff
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 Staff
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 Ehrreich, 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) S Dennis
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 Economics 305.)

306. Field Geology Laboratory (1-3) F, S Staff
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 Staff
Prerequisite: Chemistry 111A or consent of instructor. 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.)

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 open 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.)

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
Prerequisites: Geology 104 and either Biology 200 or 216. Morphologic, systematic, and ecologic aspects of invertebrate fossils; uses of fossils in stratigraphic work. (Lecture 2 hours, laboratory 6 hours, field trips.)

342. Sedimentary Rocks (3) S Conrey
Prerequisites: Geology 104 or Civil Engineering 340, Geology 320A-B. Methods of analysis; description 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
Prerequisites: Mechanical Engineering 172, Civil Engineering 225. Earth processes and materials which influence the design, construction and operation of engineering works; construction materials. Not open for credit to geology majors. (Lecture 2 hours, field trips.)

372. Graphical Methods in Geology (2) F Fritts
Prerequisites: Geology 104, Mathematics 101 or high school trigonometry. Introduction to graphical solutions of problems in structural geology and stratigraphy. (Lecture 1 hour, laboratory 3 hours, field trips.)

380. Earth Science Techniques (2) On demand Staff
Prerequisites: Geology 104, 140. Models, methods and materials of earth science. (Lecture 1 hour, laboratory 3 hours, field trips.)

422. General Crystallography (3) On demand Winchell
Prerequisites: Physics 100B or equivalent, Chemistry 111B, Geology 322. Introduction to geometrical, structural, chemical and physical crystallography. (Lecture 2 hours, laboratory 3 hours.)

423. Igneous and Metamorphic Petrology (4) F Ehrreich
Prerequisites: Chemistry 111B and Geology 321. Characteristics, origins, modes of occurrence and nomenclature of igneous and metamorphic rocks. Laboratory is coordinated macroscopic and microscopic study of rocks. (Lecture 2 hours, laboratory 6 hours, field trips.)

430. Solid Earth Processes (3) S Dennis, Grannell
Geometry and origin of folded and faulted rocks; regional structural geology; physics and chemistry of the earth's interior; effect of mantle and core processes on the crust. Not open for credit to geology majors. (Lecture 2 hours, laboratory 3 hours.)

441. Principles of Stratigraphy (3) F Fritts, Walker
Prerequisites: Geology 321, 330, 341, 342. Occurrence, lithology, fossil content, succession and mutual relations of rocks and their classification. (Lecture 2 hours, laboratory 3 hours, field trips.)

443. Micropaleontology (3) S Fritts
Prerequisites: Geology 104, 341; or upper division standing in biology with consent 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 Staff
Prerequisites: Geology 423, 441, 448. Geologic mapping; interpretation of geologic maps and aerial photographs; preparation of geologic illustrations. (Laboratory 3 hours, field trips 8-5 Saturdays.)

450. Advanced Field Geology (6) SS Staff
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
Prerequisites: Physics 100B, Mathematics 120 or 122. Introduction to geophysics; principles and processes; methods of investigation. (Lecture 2 hours, laboratory 3 hours, field trips.)

461. Introduction to Geochemistry (3) F Walker
Prerequisites: Chemistry 111B, Mathematics 123. Abundance, migration and concentration of the elements in the earth; chemical processes in the evolution of the earth and its crust. (Lecture 2 hours, laboratory 3 hours, field trips.)

463. General Meteorology (3) S Chan
Prerequisite: Physics 100B 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, meteorological instruments and observations. (Lecture 3 hours, 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 chemical 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) On demand 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
Prerequisite: Geology 441. Regional stratigraphy, structure and geologic history of 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 (3) F, S Staff
Prerequisite: Consent of instructor. Topics of current interest in the geological sciences

selected for intensive development. Topics to be selected from such areas as (a) Geochronology, (b) Ground water geology, (d) X-ray crystallography, (f) Aerial photo interpretation, (g) Paleoecology, (h) Statistical methods in geology, (i) Planetary geology, (j) Tectonics, (k) Economic mineral deposits. May be repeated for a maximum of 6 units. (Field trips may be required.)

495. Current Developments in Geological Research (1) F, S Staff
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 Staff
Prerequisites: Senior standing in geology, earth science or related fields, completion of an upper division course in geology or earth 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

515. Advanced Micropaleontology (3)

520. Advanced Stratigraphic Analysis (3)

545. Rock Mechanics in Engineering Practice (3)

610. Advanced Paleontology (3)

630. Seminar in Structural Geology and Tectonics (3)

640. Advanced Igneous Petrology (3)

641. Advanced Metamorphic Petrology (3)

650. Advanced Crystal Chemistry (3)

655. Advanced Geochemistry (3)

662. Chemical Oceanography (3)

664. Advanced Marine Geology (3)

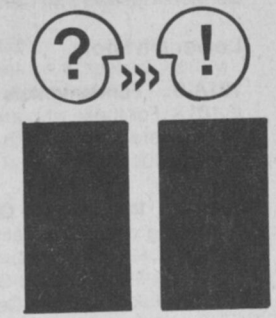
670. Special Topics in Geology (1-3)

681. Seminar in Engineering Geology (3)

697. Directed Research (1-3)

698. Thesis (1-6)

German, Russian and Classics



Department Chairman: Dr. Wilm Pelters.

Professors: McKay, Pelters.

Associate Professors: Bartenbach, Ctvrtlik, Kendall, Malone, Roden.

Assistant Professor: Spring.

Credential Adviser: Dr. Harvey Kendall.

Academic Advising Coordinator: Dr. Wilm Pelters.

German

The program in German 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 the 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 German-speaking peoples; and (5) those preparing for professional and graduate work. Except for German 303, 306 and 370, German is the sole language of instruction in all upper division courses.

Major in German for the Bachelor of Arts Degree

Lower Division: One year of intermediate German. Students who have completed sufficient 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, 205A-B, 301A-B, 305A-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, 305A-B, 401A-B.

Departmental Requirement: One year of a second foreign language is required of all majors.

Recommendations: Courses should be selected in consultation with the major 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

A minimum of 20 units which must include: German 301A, 301B, 305.

Master of Arts Degree in German

A program of study leading to the master of arts degree in German is offered. For detailed information concerning requirements see the *Graduate Bulletin*.

Lower Division

101A-B. Fundamentals of German (4,4) F, S Staff
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 Staff
Reading of representative modern German literature. Deeper penetration into German grammar.
201A. Prerequisites: German 101A-B or two years of high school German.
201B. Prerequisite: German 201A.

204. German for Reading Knowledge (3) F, S Staff
Prerequisite: One year of German or equivalent. Designed to develop reading skill in German.

205A-B. German Conversation (1,1) F, S Staff
Intensive practice of spoken German with stress on vocabulary building, pronunciation, intonation and oral comprehension. CR/NC only. (Activity 2 hours.)
205A. Prerequisite: One year of college German.
205B. Prerequisite: German 205A or consent of instructor.

Upper Division

301A-B. Advanced German (4,4) F, S Staff
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, oral reports and discussion.

303. Applied German Linguistics (3) F, S Staff
Prerequisite: Upper division standing in German or consent of instructor. Contrastive phonetics, morphology and syntax of German and English. Attention will be focused also on the historical development of the German language, especially with respect to the present day phonological differences between the two languages.

305A-B. German Conversation (1,1) S Staff
Prerequisite: Upper division standing in German. Intensive practice of spoken German with stress on vocabulary building, pronunciation, intonation and oral comprehension. CR/NC only.

306. Translating and Interpreting (3) F, S Staff
Simultaneous and successive translating and interpreting of speech, news items, expository prose and literary texts. May be repeated once for credit.

315. Survey of German Literature and Culture I (3) F Staff
Prerequisite: Upper division standing in German. German literature from its early developments to the middle of the 17th century as related to the other arts and philosophy as well as the social and political institutions of the time.

316. Survey of German Literature and Culture II (3) S Staff
Prerequisite: Upper division standing in German. German literature from the enlightenment to 1832 as related to the other arts and philosophy as well as the social and political institutions of the time.

317. Survey of German Literature and Culture III (3) F Staff
Prerequisite: Upper division standing in German. German literature from 1832 to the present time as related to the other arts and philosophy as well as the social and political institutions of the time.

370. German Literature in Translation (3) On demand Staff
Study of significant German writers, German literary movements or a specific literary genre in English translation. No subject credit will be allowed for German majors.

401A-B. Advanced German Syntax and Composition (3,3) F, S Staff
Prerequisites: German 301A-B. Practice in developing a style and vocabulary suitable for the writing of reports and essays on cultural and literary topics.

405. German Language Workshop (3) F, S Staff
Prerequisite: Upper division standing in German. Course is designed to give advanced students of German the opportunity to improve their language skills, to enlarge their knowledge and usage of current idiomatic German and to review advanced patterns of structure and syntax. May be repeated once for credit.

410. German Civilization (3) On demand Bartenbach, Roden
Prerequisite: Upper division standing in German. Historical development of important German institutions, customs and thought.

411. The German Speaking Countries of Today (3) S, 1977 and alternate years Staff
Prerequisite: Upper division standing in German. Profiles and issues of contemporary institutions in the two Germanies, Switzerland and Austria.

430. German Poetry I (3) On demand Pelters
Prerequisite: Upper division standing in German. German lyric poetry from the baroque through realism. Not open to students with credit in German 451.

432. German Poetry II (3) On demand Malone, Pelters
Prerequisite: Upper division standing in German. German lyric poetry from Hofmannsthal to the present.

441. German Novelle (3) On demand 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) On demand Pelters
Prerequisite: 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. Not open to students with credit in German 471.

457. German Romanticism (3) F Bartenbach, Pelters
Prerequisite: Upper division standing in German. Philosophical thought and representative works in prose, lyric poetry and drama of German romanticism.

458. Nineteenth Century Literature (3) S Kendall
Prerequisite: Upper division standing in German. Representative literary works of the "Biedermeier," "Junges Deutschland" and "Poetischer Realismus" against the background of the historical, philosophical and cultural movements of the times.

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.

460. Literature of the DDR (3) S, 1976 and alternate years Pelters
Prerequisite: Upper division standing in German. Development of literature in East Germany and its sociological and political involvement.

498. Topics in German (3) F, S Staff
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 Staff
Prerequisite: Consent of instructor and consent of graduate coordinator if taken for graduate credit. Independent study undertaken under the supervision of a faculty member.

Graduate Division

508. Topics in German Language Studies (3)

511. Selected Topics in German Culture and Civilization (3)

590. Study of German Literature (3)

652. Seminar in Medieval German Literature (3)

653. Seminar in a Century of German Literature (3)

692. Practicum (3)

697. Directed Research (1-3)

698. Thesis (2-4)

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 four campuses in the joint consortium program are California State University, Los Angeles, California State University, Northridge, California State College, San Bernardino 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

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 equivalent 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 semester 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

312. Advanced Russian I (3)
313. Advanced Russian II (3)
314. Russian Conversation (3)

Area B courses taught at CSULB

315. Survey of Russian Literature I (3)
316. Survey of Russian Literature II (3)
410. Russian Civilization (3)

Additional courses satisfying Area A and Area B requirements are available on other campuses of the consortium. See an adviser for the latest information on these 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.

201A-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.

Upper Division

312. Advanced Russian I (3) F Staff
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.

313. Advanced Russian II (3) S Staff
Required background or experience. Ability to read Russian stories, articles, and periodicals with facility; ability to draft non-technical reports of compositions in the language and a basic fluency in conversational Russian. Sequel to 312 with continuing emphasis on extensive reading of Russian texts and periodicals, regular composition work based on these readings and the development of increased mastery of the Russian language.

314. Russian Conversation (3) F Staff
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 Staff
Prerequisite: Upper division standing in Russian. Development of literary writings from Pushkin to Chekov. Taught in Russian.

316. Survey of Russian Literature II (3) S Staff
Prerequisite: Upper division standing in Russian. Development of literary writings from Chekov to present day. Taught in Russian.

410. Russian Civilization (3) F Staff
Prerequisite: Upper division standing in Russian. Development of important Russian institutions, taught in Russian.

412. Russian in Business and Commerce (3) On demand Staff
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) On demand 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. 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.

Greek

Minor in Greek

A minimum of 20 units which must include four 300-level courses.

Lower Division

221. Fundamentals of Greek (4) F Spring
Introduction to Greek grammar with emphasis on the rapid reading of graded Attic prose. 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 approach 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 Spring
Prerequisite: Greek 221 or equivalent. Reading of Plato's *Apology* and other dialogs. Introduction to the Homeric dialect. Regular assignments of English sentences for translation into Greek. Introduction to prose composition. Not open to students with credit in Greek 101B.

Upper Division

331. Greek Tragedy and Advanced Composition (3) F, 1975 and alternate years McKay
Prerequisite: Greek 222 or its equivalent. History of Greek tragedy and analysis of the extant plays of Aeschylus, Sophocles and Euripides. Translation and literary study of one or more specific plays. Advanced composition.

332. Greek Lyric Poets and Advanced Composition (3) S, 1976 and alternate years McKay
Prerequisite: Greek 331. Development and growth of the Greek lyric and Elegiac poetry from its, earliest proponents. Translation and literary studies of selected poems. Advanced composition.

341. Greek Historians and Advanced Composition (3) On demand McKay
Prerequisite: Greek 222 or equivalent. Translation and literary study of works of Herodotus or Thucydides. Advanced composition.

342. Homer and Advanced Composition (3) S, 1977 and alternate years McKay
Prerequisite: Greek 351. Translation and literary study of selected books of the *Iliad* or *Odyssey*. Advanced composition.

351. Plato and Advanced Composition (3) F, 1976 and alternate years McKay
Prerequisite: Greek 222. Translation and literary study of one or more dialogues of Plato. Advanced composition.

499. Directed Studies (1-3) F, S Staff
Prerequisites: 12 units of upper division Greek. Translation and literary study for one semester of the works of an important author not specifically covered in other upper division courses. Choice of author in consultation with the instructor. (May be repeated for credit with study of a different author.)

Latin

Minor in Latin

A minimum of 20 units which must include four 300-level courses (excluding Latin 377 and 378).

Lower Division

221. Fundamentals of Latin (4) F Spring
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 credit in Latin 101A-B or to students with more than two years of high school Latin.

222. Intermediate Latin (4) S Spring
Prerequisite: Latin 221 or its equivalent. Reading of selected poems from Catullus and from Horace's *Odes*. Reading of a generous portion of Cicero's *Verrine Orations*. Regular assignments of English sentences for translation into Latin. Introduction to prose composition. Not open to students with credit in Latin 201A-B or to students with more than three years of high school Latin.

Upper Division

331. Virgil and Advanced Composition (3) F, 1975 and alternate years McKay
Prerequisite: Latin 222 or equivalent. Translation and literary study of Virgil's poetry. Advanced composition.

332. Roman Comedy and Advanced Composition (3) S, 1976 and alternate years McKay
Prerequisite: Latin 331. Translation and literary study of one or more plays of Plautus or Terence. Advanced composition.

341. Roman Elegiac Poets and Advanced Composition (3) On demand McKay
Prerequisite: Latin 222 or equivalent. Translation and literary study of representative poems of Catullus, Tibullus, Propertius and Ovid. Advanced composition.

342. Roman Historians and Advanced Composition (3) On demand McKay
Prerequisite: Latin 222. Translation and literary study of works of Sallust, Livy or Tacitus. Advanced composition.

351. Roman Lyric Poets and Advanced Composition (3) F, 1976 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 Advanced Composition (3) S, 1977 and alternate years McKay
Prerequisite: Latin 351. Translation and literary study of a representative work of Cicero. Advanced composition.

377. Studies in Medieval Latin Prose (3) F Staff
Prerequisite: Latin 222 or consent of instructor. Intensive studies in a wide variety of secular and ecclesiastical prose from the fourth to the fourteenth century with occasional lectures by instructor.

378. Studies in Medieval Latin Poetry (3) S Staff
Prerequisite: Latin 377 or consent of instructor. Intensive studies in a wide variety of secular and ecclesiastical Latin poetry from the fourth to the fourteenth century with occasional lectures by instructor.

499. Directed Studies (1-3) F, S Staff
Prerequisites: 12 units of upper division Latin. Translation and literary study for one semester of the works of an important author not specifically covered in other upper division courses. Choice of author in consultation with the instructor. (May be repeated for credit with study of a different author.)

Sanskrit

Upper Division

331. Fundamentals of Sanskrit (3) F McKay
Reading and writing of Sanskrit using the devanagari alphabet. Introduction to Sanskrit grammar with emphasis on the rapid reading of classical Sanskrit. Translation and explanation of selections from the *Bhagavad Gita*.

332. Intermediate Sanskrit (3) S McKay
Prerequisite: Sanskrit 331. Translation and explanation of Sanskrit didactic fables and folk tales and the code of law as handed down by Manu. Classical Hindu society and culture. Indo-European comparative grammar.

341. Advanced Sanskrit and Pali (3) F McKay
Prerequisite: Sanskrit 332. Classical and pre-classical prose and verse including the *Upanishads*. Study of Pali, a simplified form of Sanskrit in which the works of the Buddhist canon are written.

342. Vedic Sanskrit and Pali (3) S McKay
Prerequisite: Sanskrit 341. Hymns from the *Rig Veda*. Further study of Pali literature.

Hebrew

Lower Division

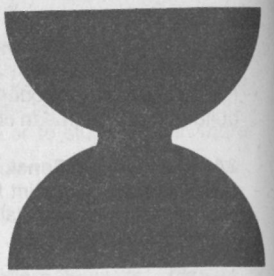
101A-B. Introductory Hebrew (4,4) F, S Staff
101A. Beginning course. Hebrew alphabet, essential facets of grammar, reading, writing, mastery of basic vocabulary.
101B. Prerequisite: Hebrew 101A or two years of high school Hebrew. Continuation of Hebrew 101A. Simple conversation, reading of selected verses from Genesis and essay texts in modern Hebrew.

201A-B. Intermediate Hebrew (4,4) F, S Staff
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 a faculty member.

History



Department Chairman: Dr. Eugene L. Asher.

Emeriti: Kenneth Appelgate, Halvor G. Melom.

Professors: Abou-El-Haj, Ahlquist, Asher, Frazer, Hardeman, Higgins, Kimball, Lindgren, Lipski, McFaul, Nichols, Peters, Ragland, Wilde, Williams.

Associate Professors: Abrahamse, Bernstein, Black, Boutelle, Buchanan, Burke, Cerillo, Furth, Gosselin, Hood, MacLachlan, Polakoff, Raun, Sater, Sievers, Springer, Stuart, Svec, Walzer.

Assistant Professors: Bane, Berk, Collins, Gunns, Weber.

Lecturers: Fouquet, Rosen, Weinman.

Credential Adviser: Dr. William Weber.

Coordinator, Social Science Certificate Program: Dr. Irving Ahlquist.

Minority Adviser: Dr. David Hood.

Academic Advising Coordinator: Dr. Albie Burke.

The study of history is intended to serve as a cultural background, as a preparation for graduate work in history and the other social sciences, or as a foundation for those planning to enter teaching, law, librarianship, government, foreign service, and related fields.

History majors who are contemplating graduate work in history are advised that many master's programs and most doctoral programs require competency in foreign language(s). Interested undergraduates should begin such language study as early as possible.

The Stuart L. Bernath Memorial Prize, named for a late member of the faculty, is awarded 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 History Department also offers a unique laboratory/internship experience and course work in the production of a professional journal, *The History Teacher*, which is edited and produced on this campus. Even for prospective teachers, this experience provides an introduction to current trends in curriculum innovation, new teaching strategies and analysis of materials and media designed for classroom use. It is one of the few such opportunities available at the undergraduate level anywhere in the United States.

General Education Requirement of United States History

Candidates may satisfy the requirement as follows: *Lower Division Students*—History 171A or B. *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

Lower Division: A minimum of 12 units distributed as follows: (1) a six-unit sequence comprising History 131A and B or 151A and B or 181A and B; and (2) a six-unit sequence comprising History 160A and B or 171A and B.

Upper Division: History 301, 3 units of History 495, 498 or 499 and a minimum of 21 additional units, which must include at least 6 units in each of three of the following areas: (1) Ancient and Medieval, (2) Modern European, (3) Russian, (4) British, (5) Latin American, (6) United States, (7) East Asian, (8) South Asian, (9) African and (10) Interdisciplinary and Comparative history.

Minor in History

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, 181A and B.

Upper 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 in History

Master of Arts Degree in Asian Studies

Programs of study leading to the master of arts degree in history and the interdisciplinary master of arts degree in Asian studies are offered. For detailed information concerning requirements see the *Graduate Bulletin*.

Lower Division

131A-B. Western Civilization (3,3) F, S Staff
Political, economic, social, cultural, religious and intellectual history of western civilization from its origins to the present. Stresses persons, ideas, movements and institutions that have had the greatest impact upon the modern world. Not open to students with credit in Honors 130A,B.

151A-B. History of England and Great Britain (3,3) F, S Staff
Survey and analysis of the cultural, economic and political growth of Great Britain and the Commonwealth from earliest times to the present. Emphasis is placed on the evolution of Anglo-American institutions and cultural heritage.

160A,B. History of Latin America (3,3) F, S Staff
Comprehensive study of the colonizing activities of the Spanish and Portuguese in America; the development of colonial institutions; the movements for independence; political, economic, social and intellectual developments of the Latin American republics. History 160A not open to students with credit in 161A and 160B not open to students with credit in 161B.

170. Major Themes in United States History (3) F, S Staff
Examination of major issues, problems and crises in American history. Course will focus on contemporary values and institutions, placing them in historical perspective. Designed for non-majors to fulfill the United States history general education requirement but can be substituted for one semester of History 171A or B for the major.

171A,B. History of the United States (3,3) F, S Staff
Survey of the political, social, economic and cultural development of the United States from discovery to the present. Attention given to the rise of the new nation, sectional and national problems, disunion and reconstruction, rise of industrial America, the United States as a world power, welfare democracy and postwar problems. Meets the graduation requirement in United States history. Not open to students with credit in History 161A,B.

181A,B. History of Asia (3,3) F, S Staff
Historical development of the Indian and Chinese civilizations and of their extensions in Indonesia, Indo-China, Japan, Korea and Central Asia; relations between East and West; contemporary problems in Asia.

231. History of the Early Mediterranean World (3) F, S Bane, Hood
Introductory survey of Mediterranean civilization and culture from the rise of the Bronze Age cultures to the fall of Rome. Required for the Certificate in Mediterranean Studies.

Upper Division

301. Writing History (3) F, S Staff
Required of all history majors in the first semester of upper division work. Practice in the use of historical evidence, reconstruction of events and presentation of findings. Emphasis on the preparation and analysis of written student exercises.

Ancient and Medieval

313. Ancient Greece (3) F Bane, Hood
History of the Greeks and the Greek world from the earliest times to the Roman Conquest.

314. Roman History (3) S Bane, 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.

Modern European

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 philosophies; 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 theologies; problems of Scriptural clarity; Counter-versus Catholic-Reformation; sociology of conversion; religious wars and monarchical crisis; expedient toleration; 17th century philosophic attacks on religion and God.

334. The Age of Absolutism (3) F Asher, Lindgren
Rise of the French Imperium in Europe and decline of the Spanish; triumph of science and mechanistic philosophy; growth of statism and its increasing separation from religious sectarianism; impact upon warfare, society, economic enterprise and culture.

335. Age of Enlightenment (3) F, S Asher, Lindgren
Intellectual, political and economic changes caused by evolution in thought and economy; 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 Asher, Lindgren
End of the Old Regime and the French Revolution. Decline of the feudal monarchy, failure of enlightened despotism, the rise of revolutionary thought, French Revolution, and Napoleonic imperialism.

337. Europe in the Nineteenth Century (3) F Weber
Apogee of European power, influence and confidence. Recovery from French Revolutionary and Napoleonic disturbances, reaction 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 Stuart, 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 League of Nations and the collapse of collective security, World War II; the United Nations; postwar problems.

431A. Early Balkan and Near Eastern History (3) F Abou-El-Haj
The rise of Islam; establishment and organization of the Ummayyad and Abbasid caliphates; the Turkish invasion and Crusades. Origin and development of the Ottoman and Safavid empires; Islamic society and culture in 16th Century, decay of the Islamic empires and expansion of Europe.

431B. Recent Balkan and Near Eastern History (3) S Abou-El-Haj
Rise of Nationalism in the Balkan and Near Eastern areas. Growth of Western Imperialism; Westernization of Turkey and Iran; independent development of Balkan and Arab states since World War I, establishment of Israel; Soviet impact on the Balkans and the Near East.

432A,B. Northern Europe (3,3) F, S 1975-76 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 constitutional governments; social-economic changes and cultural movements.

433. History of the Iberian Peninsula (3) F MacLachlan, Svec
Rise of Portugal, Castile and Aragon, the Catholic kings, Imperial Spain, Portugal and its empire, Portugal and Spain in transition, the republics, Salazar and Franco.

437. History of Germany 1870 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 Springer
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; experiment in Divine Right Monarchy; triumph 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 industrial 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 Kimball
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.

451A,B. British Empire and Commonwealth (3,3) F, S Staff
British expansion overseas from the earliest times to the present. 451A deals with Irish plantations, Elizabethan sea dogs, trading companies and settlement colonies, mercantilism, wars for trade and commerce. Fall of the First Empire. 451B deals with rise of crown colonies and the colonial office, humanitarianism and free trade, evolution of Canada, New Zealand, Australia, and South Africa toward dominion status, British rule in India and tropical lands, rise of colonial nationalism.

455A,B. Constitutional and Legal History of England (3,3) F, S Kimball
Development of the English constitution and its elements—monarchy, parliament, church and the law—in the medieval and modern periods.

Latin American

362. Colonial Latin America (3) F MacLachlan, Nichols, Svec
Preparation of Spain and Portugal for overseas expansion, discovery and conquest in America, development of colonial life and institutions.

363. Emerging Latin America (3) S Nichols
Eighteenth century imperial rivalries, reforms, revolts, intellectual currents; the Wars of Independence; problems of the new nations.

364. Modern Latin America (3) F, S Sater, Svec
Political, economic, social and intellectual developments and issues in 20th century Latin America.

462A. Mexico Before Independence (3) F MacLachlan
Spanish conquest of Indian Mexico; settlement and exploration; 18th century reform. Not open to students with credit in History 462.

462B. Mexico After Independence (3) S MacLachlan
Independence, early republic, the reform, the Porfiriato; the Revolution of 1910; contemporary Mexico. Not open to students with credit in History 462.

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 MacLachlan, 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.

466. Andean Nations of South America (3) F, S Staff
Indian peoples; Spanish conquests; colonial developments; independence; emergence of the Republics of Ecuador, Peru and Bolivia; struggle for social, political and economic stability in the 19th and 20th centuries.

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 social 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 colonial distaste for both; growth of an independent spirit; the American Revolution; problems of the new nation; the Constitution.

374. United States: Early National Period (3) F Bernstein, McFaul
Establishing the federal government; origins of the party system; foundations of American foreign policy; and expanding economy; changing social scene; spread of democracy; national self-discovery.

375. United States: Jacksonian Democracy and Sectional Crisis (3) S Bernstein, McFaul
Social and economic expansion; rebirth and development of political parties; politics of slavery; Manifest Destiny and the Mexican War; growth of sectional feeling; the disruption of American democracy.

376. United States: Civil War and Reconstruction (3) F, S Ahlquist, 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. United States: The Great Depression, War and Its Aftermath (3) F Gunns, Ragland
Depression and the beginnings of welfare democracy; United States in World War II; post-war problems and world affairs.

470. History of the American Party System (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), one-party interlude of 1820s, important role played by minor parties (Antimasons, Prohibitionists, Populists, Progressives); 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, Williams
Analysis 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, Polakoff
Survey of the economic, social, intellectual and political development of the South from colonial times, with emphasis on the period from 1820 to the present.

473A. Early California History (3) F Hardeman, Williams
Spanish and Mexican periods of California history. Political, economic and social development of California from its discovery and occupation by the Spanish to the middle of the 19th Century.

473B. Recent California History (3) S Hardeman, Williams
American period of California history; political organization, progressivism, recent political, social and cultural 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. Economic History of the United States (3) S Black
Study of forces, institutions and patterns in the economic life of the United States from the period of rapid economic development beginning in the nineteenth century through the Great Depression. Not open to students with credit in History 475A,B.

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 emphasis upon the modification of European institutions in the American environment. Includes social structure, nature of the family, ethnic tensions, Americanization of the immigrant, the changing character of urban and rural 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 to 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.

478A,B. Diplomatic History of the United States (3,3) F, S Peters
American foreign relations since the Revolution, giving special attention to the concepts of manifest destiny, isolationism and the Monroe Doctrine; the increasingly important role of the United States in international affairs.

479A,B. Constitutional History of the United States (3,3) F, S Burke
Constitutional history in the chronological framework of American history from colonial beginnings to post-World War II. Emphasis on the sources of constitutional change in America—social, economic, inteilectual, political—and on the ways constitutional government have influenced American society.

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 American Women (3) F Staff
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. Legal History of the United States (3) F Burke
Development of law in America from colonial times to the present: English common law heritage, puritan and frontier influences, formative stages of American legal development and modern trends.

Far Eastern

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 credit in History 482B.

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. Intellectual History of Recent Japan (3) F, alternate years Sievers
Prerequisite: History 181B or 383B or consent of instructor. Japanese thought on the eve of the Meiji Restoration; response of Japanese intellectuals to industrialization; role of Emperor-centered ideology in Japan since 1868; socialism and communism in Japan.

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 Lipski
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

401. History of Women in Cross-Cultural Perspective (3) S Staff
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.

402. History of the Working Classes in the Western World (3) S Stuart, Weber
Comparative examination of the development of the working classes in modern western societies. Emergence of the classes during the period of industrialization; comparative social standing; nature of working class culture; growth of working class economic and political organizations; working class ideologies.

494. History of Science: Selected Topics (3) F, S Gosselin
Interdisciplinary introduction to the history of science for scientists and non-scientists. Evolution of the scientist's view of the means and ends of his own activities. Two-way interactions of these views with more general contemporary ideas and attitudes. May be repeated with consent of instructor up to a maximum of six units. (Same course as Physics 494.)

General

399. Publication of The History Teacher (1-6) F, S Bane, Cerillo
Prerequisite: Consent of instructor. Participation in the publication of a scholarly historical journal, *The History Teacher*. This laboratory/internship experience will allow students to apply the various skills, methodologies and strategies of research, stylistic criticism and teaching to production and planning of a professional historical journal, from conceptual stage to publication and distribution of several issues. Recommended for those considering careers outside the normal limits of teaching. May be repeated to a maximum of six units.

490. Special Topics in History (1-3) F, S Staff
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*.

491A. Africa Before Partition (3) F Staff
North Africa and the Mediterranean civilizations; pre-colonial state systems; Bantu, Sudanic and non-centralized societies; expansion of Islam; changing patterns of trade relations; growth of European influences.

491B. Modern and Contemporary Africa (3) S Staff
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.

495. Colloquium (3) F, S Staff
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 Staff
Prerequisite: Consent of instructor. Independent study under the supervision of a faculty member. History 498 may be repeated up to six units, three of which may be applied to the History 495, 498 or 499 option, and three of which may be applied to the history major requirements for three units of additional upper division electives.

499. Historians and Historiography (3) F, S Staff
A critical study of the nature of history and the writings of historians.

Graduate Division

510. The Literature of History (3)

520. Select Problems in History (3)

611. Seminar in Ancient History (3)

612. Seminar in Medieval History (3)

631. Seminar in European History (3)

641. Seminar in Russian History (3)

651. Seminar in British History (3)

661. Seminar in Latin American History (3)

672. Seminar: The United States to 1900 (3)

673. Seminar in Twentieth Century United States (3)

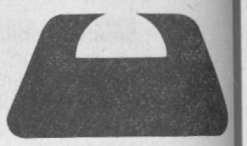
682. Seminar in East Asian History (3)

683. Seminar in South Asian History (3)

697. Directed Research (1-3)

698. Thesis or Project (1-4)

Journalism



Department Chairman: Mr. M. L. Stein.

Emeritus: Robert A. Steffes.

Professors: Bliss, Cunningham, Gayer, Lee, Stein, Wells.

Associate Professor: Davis.

Assistant Professor: Jackson.

Credential Adviser: Mr. James Bliss.

Academic Advising Coordinator: Mr. M. L. Stein.

The Journalism Department offers three major programs leading to the bachelor of arts degree: option one for a career in professional journalism, option two for the teaching of journalism, and option three for a career in public relations. The professional journalism option provides instruction in the skills necessary to develop a journalist who can work in such areas as newspaper reporting and editing, magazine writing and editing, radio and television reporting and related fields. The teaching option meets the requirements for the standard teaching credential with a secondary specialization and prepares the student to teach journalism and to advise student publications on the secondary level. The public relations option prepares the student for work in the fields of public relations, publicity and editing of company, trade and professional publications.

Major in Journalism for the Bachelor of Arts Degree

Professional Journalism Option

A minimum of 32 units and a maximum of 36 units in journalism selected in accordance with the student's area of interest in consultation with an adviser, which must include the following:

Lower Division: 12-15 units, which must include Journalism 110, 120. Additional units must be selected from Journalism 115, 230, 235, 237, 251, 280; Radio-TV 207, 208.

Upper Division: 20-24 units, which must include Journalism 418, 430 and one course selected from Journalism 322A or B, 362A or B, or 382A or B. Students choosing newspaper work should take Journalism 320 and 420; the following courses will be of special interest also: Journalism 115, 230, 235, 280 or 380, 352, 438, 460. Students choosing work with magazines should take Journalism 355, 455; the following courses will be of special interest also: Journalism 237, 251, 280, 350, 380. Students choosing broadcast journalism should take Journalism 320, 321, 325; the following courses are of special interest also: Radio-TV 207, 208, Speech Communication 271, Journalism 420.

In addition to the above courses each student will be counseled in an area of study outside journalism which will best suit his or her professional objectives. A minimum of 15 units in this specialization will be recommended.

Public Relations Option

A minimum of 32 units and a maximum of 36 units in journalism which must include the following:

Lower Division: Journalism 110, 120, 270.

Upper Division: Journalism 375, 376, 418, 430, 470, 471.

Students will be advised to choose their journalism electives from a recommended list developed by the public relations option adviser.

Teaching Option

Journalism 110, 120, 230, 322A or B, 410, 460; three courses selected from English 250A,B, 370A,B, English 310, English 320 or 325, Speech Communication 355; Comparative Literature 232 or English 482. Additional requirements: seven units selected from Journalism 115, 235, 270, 280, 312, 320, 422A or B (not more than one unit), 430, 499 (not more than two units).

Minor in Journalism

A minimum of 20 units including:

Lower Division: Journalism 110, 120 and 230.

Upper Division: Three units selected from Journalism 322A or B, 362A or B, 422A or B; and six units selected from Journalism 320, 325, 350, 352, 355, 375, 430 or 460.

Lower Division

110. Introduction to Mass Communications (3) F, S Bliss, Cunningham, Lee
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 Stein, Wells
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.

222A,B. Newspaper Production (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 (3) F, S Bliss, Davis, 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 Lee
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.

25I. The Feature Article (3) F, S Lee
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 Lee
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. Photojournalism (2) F, S Bliss, Jackson
Prerequisite: Industrial Arts 101 or consent of instructor. Introduction to 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 Staff
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 Davis
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 Staff
Prerequisites: Journalism 120 and Radio-TV 208 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. Not open to students with credit in Journalism 420.

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.)

325. Radio News Writing and Reporting (3) F, S Staff
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.

350. Contemporary Magazines (3) F Staff
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) F, S Staff
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 Staff
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 Staff
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) S Jackson
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.

380. Advanced Photojournalism (3) S Staff
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 Cunningham
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.

410. School Publications (3) F Jackson
A course of practical value to advisers and potential advisers of school newspapers and yearbooks. Organizing staffs; establishing news beats; gathering, writing and editing news; feature stories; planning and editing pictures; typography and layout; dealing with printers; financing school newspapers and yearbooks; advertising; business practices.

420. Reporting of Urban Problems (3) F Staff
Prerequisites: Journalism 120 and 320 or consent of instructor. An advanced course in investigative and interpretive reporting. Students will work in an editor-reporter 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 Wells
Prerequisite: Consent of instructor. Advanced work on campus information media. May include writing, editing, photography, layout or news broadcasting.

428. Newspaper Management (3) S Staff
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.)

455. Advanced Magazine Article Writing (3) F, S Lee, 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 Staff
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) F, S Staff
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, S Staff
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.

490. Special Topics in Mass Communications (1-3) F, S Staff
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.

499. Special Projects (1-3) F, S Staff
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.

Language Skills

Academic Advising Coordinators: Mrs. Elizabeth Gavin, Mr. Hillary Knight.

Language Skills 170A and 170B 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 through either the taking of both 170A and B and receiving a passing grade in each, or by successfully completing a special qualifying examination administered by the Language Skills Area.

170A. Language Skills (3) F, S Staff
The first semester course focuses on the intensive development of grammatical skills with some expository writing.

170B. Language Skills (3) F, S Staff
The second semester course focuses on organizational methods and techniques for writing compositional and expository prose, advanced grammar and some critical reading techniques for term papers.

Mathematics

Department Chairman: Dr. Thomas A. McCullough.

Emeritus: Stephen Kulik.

Professors: Austin, F. Cohen, Fatt, James, McCullough, McLeod, Manheim, Mardellis, Mosher, Seewerker, Sexauer, A. Smith, Verdina, Warner, Wenjen.

Associate Professors: Afflack, Albert, Ali, Bachar, Baugh, Beckwith, S. Black, Conroy, Cooke, Dorn, Eylar, Foster, Froyd, Gittleman, Harvey, Margulies, Martinez, Schwartz, Smoke, Spraglin, Turner.

Assistant Professors: Councilman, Lu, Maltz, R. Wilson.

Lecturers: Gendler, Joss, Mumaw.

Credential Adviser: Mrs. Jean Conroy.

Academic Advising Coordinator: Dr. Howard Beckwith.

The mathematics program is designed to meet a variety of needs including: (1) students preparing for graduate work in mathematics; (2) prospective teachers; (3) students planning to work as mathematicians in industry; (4) students with a special interest in probability and mathematical statistics; (5) non-mathematics majors.

Major in Mathematics for the Bachelor of Arts Degree

Lower Division: English 101; Mathematics 122, 123, 224, and any one of the following: 10 units of chemistry, 8 units of one foreign language, 6 units of philosophy or at least 6 units of physics. If physics is taken, it shall include either Physics 100A or 151 but not both. Physics 104 is not acceptable.

Upper Division: A minimum of 30 units of approved upper division mathematics courses selected in consultation with major adviser to include Mathematics 444 and 460A-B but not 370A or B.

To achieve flexibility, only nine 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.

Minor in Mathematics

Requirements for the minor in mathematics include Mathematics 122, 123 and 12 units of upper division mathematics.

Master of Arts Degree in Mathematics

A program of study leading to the master of arts degree in mathematics is offered. For detailed information concerning requirements see the *Graduate Bulletin*.

15—87613

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, 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.

Lower Division

100. Intermediate Algebra (3) F, S Staff
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 122.

101. Trigonometry (2) F, S Staff
Prerequisite: Mathematics 100 or two years of high school algebra. Trigonometric functions and applications. Complex numbers. Not open to students with credit in Mathematics 122.

102. Unified Introductory Mathematics (4) F, S Staff
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, 122.

110. Fundamentals of Mathematics I (3) F, S Staff
Prerequisites: One year of high school algebra, one year of high school geometry. Theory of the structure, arithmetic and algebra of the real number system. Designed for prospective elementary teachers. Not open for credit to mathematics majors.

111. Fundamentals of Mathematics II (3) F, S Afflack
Prerequisite: Mathematics 110. Elements of logic and the basic concepts of informal geometry; introduction to trigonometry. Not open for credit to mathematics majors.

112. College Algebra (3) F, S Staff
Prerequisite: Mathematics 102 or both Mathematics 100 and 101 or two years of high school algebra including trigonometry. Study of algebra including linear and quadratic equations and systems; matrices and determinants; theory of equations; polynomial, exponential and logarithmic functions and their graphs; permutations and probability. Designed for students majoring in a life or social science. Not open to students with credit in Mathematics 117 or 122.

114. Finite Mathematics (3) F, S Staff
Prerequisite: Mathematics 100 or 102 or two years of high school algebra. Elementary logic and set theory. Combinatorial techniques and introduction to probability. Vectors, matrices, equations of lines and systems of linear equations.

115. Survey of Calculus I (3) F, S Staff
Prerequisite: Mathematics 100 or 102 or two years of high school algebra; trigonometry recommended. Real numbers and functions; limits and continuity; differentiation and integration of functions of one variable with applications to physical, management and social sciences. Emphasis on problem-solving techniques rather than theory. Not open to students with credit in Mathematics 120 or 122.

116. Survey of Calculus II (3) F, S Staff
Prerequisite: Mathematics 115. 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. College Algebra and Elementary Functions (4) F, S Staff
Prerequisites: At least 3½ years of high school mathematics including at least 2 years of algebra and ½ year of trigonometry, or Mathematics 100 or 102. Critical study of the algebra of real and complex numbers for students who intend to study calculus. Exponential, logarithmic, trigonometric, and polynomial functions, binomial theorem, progressions and selected topics. Not open to students with credit in Mathematics 122. (Lecture 3 hours, problem session 2 hours.)

122. Analytic Geometry and Calculus I (4) F, S Staff
Prerequisite: A grade of 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 polynomial functions and applications. (Lecture 3 hours, problem session 2 hours.)

123. Analytic Geometry and Calculus II (4) F, S Staff
Prerequisite: A grade of 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) F, S Staff
Introduction to computing using a conventional on-line computing language. Flowcharting and elementary programming with several exercises to be run on a computer (no particular mathematics background assumed). Not open to students with credit in any previous course involving computer programming.

171. Computer Calculus (1) F, S Staff
Prerequisite: Concurrent registration in a calculus course. Introduction to computing, using a conversational on-line computing language, with applications involving calculus. Not open for credit to students with credit in Mathematics 170.

180. Elementary Statistics (3) F, S Black, Cohen, Foster, Maltz, Martinez, Smoke
Prerequisite: Mathematics 100 or 102 or two years of high school algebra. Nature of statistics and probability theory, description of sampled data. Random sampling, normal distribution assumption and its consequences; tests of hypotheses and estimation; correlation, regression, analysis of variance. Non-parametric methods. (Lecture 3 hours.)

224. Analytic Geometry and Calculus III (4) F, S Staff
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.)

270. Introduction to Computing (3) F, S Cohen, Conroy, Lu, Seewerker, Wilson
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.

273. COBOL Programming (3) F, S Staff
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. Not open to students with credit in Computer Information Science 273. (Lecture 3 hours.)

297. Directed Study (1-3) F, S McCullough
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 surveys of selected problems.

Upper Division

310. History of Mathematics (3) S Baugh, Black, Gittleman
Prerequisites: Mathematics 123 or 115 and 355. 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.

312. Survey of Modern Mathematics (3) F Afflack, Fatt, Mosher
Prerequisite: Mathematics 114 or 115. General nontechnical survey of selected topics in mathematics intended for the liberal arts student with minimal preparation in mathematics. Recommended for those who wish to teach high school mathematics. Not open for credit to mathematics majors.

317. Introduction to Abstract Mathematics (3) F, S Staff
Prerequisite: Mathematics 123. Introduction to topics in modern mathematics that are independent of calculus and which form a background for further study in abstract mathematics. Selections from elementary number theory, rings, fields and other algebraic systems. Not open for credit to anyone with a grade of C or better in Mathematics 444.

323. Computational Analysis (4) F Cohen
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.)

325. Computer Systems and Programming (4) F, S Margulies, Seewerker, Spraglin
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. Advanced Symbolic Programming (4) F, S Seewerker, Spraglin
Prerequisite: Mathematics 325 or consent of instructor. Input-output, interrup 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, S Conroy, Mardellis, Seewerker, Turner, Wilson
Prerequisite: Mathematics 115 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) F, S Staff
Prerequisite: Mathematics 115 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.

346. Linear Algebra (3) F, S Staff
Prerequisite: Mathematics 224. Vector spaces. Linear transformations. Matrices and matrix algebra. Characteristic vectors and characteristic values; Cayley-Hamilton theorem. Quadratic forms; diagonalization of matrices and reduction of quadratic forms.

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, S Staff
Prerequisite: Mathematics 224. Introduction to the basic concepts of point set topology such as topological spaces, continuous functions, compactness and metric spaces. Recommended for those who intend to study analysis, complex analysis or differential geometry.

355. College Geometry (3) F Verdina
Prerequisite: Mathematics 123. Transformations, motions, similarities, geometric objects, congruent figures, the axioms of geometry, and selected topics in advance Euclidean geometry.

360. Fundamental Concepts of Analysis (3) F, S Staff
Prerequisite: Mathematics 123. Modern approach to the concepts of calculus. Introductory set theory, elementary logic, the real number system, relations, functions, cardinality of sets, metric sets, limits, continuity, differentiation and integration. Not open for credit to anyone with a grade of "C" or better in Mathematics 460A or 460B.

364A. Ordinary Differential Equations I (3) F, S Staff
Prerequisite: Mathematics 224. General theory of linear differential equations, variation of parameters, the Wronskian, first, second and third order equations with variable coefficients. Not open to students with credit in Mathematics 363.

364B. Ordinary Differential Equations II (3) S Cohen, Fatt
Prerequisite: Mathematics 364A. Fundamental existence theorems, systems of equations, general theory of first order equations, special functions defined by differential equations, nonlinear equations.

370A. Applied Mathematics I (3) F, S Staff
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 Staff
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) F, S Staff
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.

420. Introduction to the Theory of Computation (3) F Seewerker
Prerequisite: Mathematics 317 or 330. Recommended: Mathematics 270. Introduction to the theory of finite and infinite machines. Recursive function theory. Noncomputability of real numbers and constructive mathematics. Not open to students with credit in Mathematics 320.

425. Information Structure and Files (3) S Seewerker
Prerequisite: Mathematics 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) F 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.

431. Set Theory (3) F, S Staff
Prerequisite: Mathematics 224. Intuitive set theory; sets and relations, proof and definition by induction, cardinal arithmetic, well-ordered sets and ordinal numbers, axiom of choice, well-ordering principle and Zorn's Lemma.

440A. Number Theory I (3) F Cooke, 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 Cooke, Eylar, Gittleman
Prerequisite: Mathematics 440A. Continuation of Mathematics 440A.

444. Introduction to Higher Algebra (3) F, S Staff
Prerequisite: Mathematics 224. Recommended: Mathematics 317. Groups, rings, fields. Not open to students with credit in Mathematics 344.

460A. Advanced Calculus I (3) F, S Staff
Prerequisite: Mathematics 224. Recommended: Mathematics 360. Rigorous analysis of calculus and its foundations, functions of one variable and of several variables.

460B. Advanced Calculus II (3) F, S Staff
Prerequisite: Mathematics 460A. Continuation of Mathematics 460A.

461. Complex Variables (3) F, S Staff
Prerequisite: Mathematics 460A. Theory and applications of complex variables. Analytic functions, integrals, power series and applications.

462. Theory of Integration (3) F Bachar, Gittleman, Harvey, Warner
Prerequisite: Mathematics 460A. Advanced topics in Riemann Integration. Lebesgue measure and integration on the real line.

470. Introduction to Partial Differential Equations (3) S Lu, McLeod, Margulies
Prerequisite: Mathematics 370A, or 364A and 375. Linear first and second order equations, characteristics, elliptic, hyperbolic, and parabolic equations. Introduction to the boundary and initial value problems of mathematical physics.

472. Fourier Series (3) F Lu, Warner
Prerequisite: Mathematics 364A or 370A. Theory of Fourier series and its application to boundary value problems.

473. Laplace Transform (3) S James, McCullough
Prerequisite: Mathematics 364A or 370A. Theory of the Laplace transform and its application to linear problems in electrical, mechanical and thermal systems.

476A-B. Numerical Analysis (3,3) F, S Cohen
Prerequisite: Mathematics 364A. Mathematics 270 and 346 are recommended. Methods of computation suitable for desk or electronic digital computers. Polynomial interpolation. Numerical differentiation and integration. Numerical solution of differential equations. Least Squares. Solution of non-linear and simultaneous linear equations. Eigenvalues and eigenvectors of matrices. Mathematics 476A not open to students with credit in 476.

485. Mathematical Programming (3) S Cohen, Gittleman
Prerequisites: Mathematics 346 and senior standing. Linear and nonlinear programming: simplex methods, duality theory, theory of graphs, Kuhn-Tucker theory, gradient methods and dynamic programming.

495. Topics in Modern Mathematics (3) F, S Staff
Prerequisite: Consent of instructor. Topics of current interest from mathematics literature in the following fields: (a) foundations, (b) algebra and number theory, (c) geometry and topology, (d) analysis, (f) probability and statistics, (g) applied mathematics. May be repeated once for credit.

497. Directed Studies (1-3) On demand Staff
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-B. Foundations of Mathematics (3,3)

540A-B. Higher Algebra (3,3)

550A-B. Topology (3,3)

561A-B. Real Analysis (3,3)

562A-B. Theory of Functions (3,3)

570. Advanced Applied Mathematics (3)

575. Calculus of Variations (3)

580A-B. Advanced Mathematical Statistics (3,3)

590. Theory of Approximation (3)

695. Seminar in Mathematics (3)

697. Directed Studies (1-3)

698. Thesis (2-4)

Microbiology

Department Chairman: Dr. Frank E. Swatek.

Professors: Kazan, Raj, R. Russell, Swatek.

Associate Professors: Anselmo, Brodetsky, Carlberg, Fung, J. Kim, Petty.

Assistant Professor: Logan.

Lecturers: Brosbe, Buggs.

Academic Advising Coordinator: Dr. Frank E. Swatek.

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.* This type of career offers opportunities in hospitals, city, county, state and national public health and private laboratories; (3) the pre-professional 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 department.

Major in Microbiology for the Bachelor of Science Degree

General Microbiology Option

Lower Division: Chemistry 111A-B, 251, 251L; Mathematics 102 or 115; Physics 100A-B; Microbiology 210; Biology 216.

Upper Division: Biology 342; English 317**; and a minimum of 36 units including the following: Microbiology 320, 330, 360A-B, 452, 471; Microbiology 450, 451, or Biology 370; Chemistry 327, 441A-B; and a minimum of 6 units in microbiology to be selected in consultation with the major adviser from upper division microbiology courses.

* Clinical Laboratory Technology, Public Health Microbiology.

** Waived for any student who scores above 52 percentile on the English Proficiency Test or it may be waived by the department for a transfer student with 6 or more units in English composition and who demonstrates high proficiency in grammar as shown by the English Proficiency Test.

Medical Microbiology Option (Laboratory Technology)

Lower Division: Chemistry 111A-B, 251, 251L; Mathematics 102 or 115; Physics 100A-B, Microbiology 210, Biology 216.

Upper Division: Biology 342; English 317**; and a minimum of 36 units including the following: Microbiology 320, 322, 323, 330, 360A-B, 452; Chemistry 327, 447, 441A; 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

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) 360A-B or (c) 452 and 453.

Master of Public Health Degree

Master of Science Degree in Microbiology

Programs of study leading to the master of public health degree and the master of science degree in microbiology are offered. For detailed information concerning requirements see the *Graduate Bulletin*.

Lower Division

100. Microbiology (3) F, S Staff
Life processes and roles of micro-organisms in ecological systems; emphasis on harmful and beneficial interrelationships with man and his environment. Not open for credit to majors in microbiology. (Lecture-demonstration 3 hours.)

101. Man and Disease (3) F, S Kazan, Logan, Russell
Cause and prevention of the common diseases of man. Not open for credit to majors in Microbiology. (Lecture 3 hours.)

210. General Microbiology (4) F, S Swatek
Prerequisites: Biology 200 or 216 and Chemistry 111B. Introduction to microorganisms, their morphology, metabolism and cultural characteristics. (Lecture 2 hours, laboratory 6 hours.)

211. Microbiological Techniques (1-2) F, S Swatek
Prerequisite: Microbiology 210. Experience in preparation of cultural media, sterilizing procedures, tissue techniques, and maintenance of reagents used in microbiological laboratory. (3-6 hours, time arranged.)

Upper Division

320. Medical Bacteriology (5) F, S Anselmo
Prerequisites: Microbiology 210 and Chemistry 327. Pathogenic bacteria of man and animals; emphasis on isolation and identification of micro-organisms by morphological and cultural characteristics; their reaction to various antibiotics. (Lecture 3 hours, laboratory 6 hours.)

321. Public Health and Pollution (3) F, S Kim, Russell
Survey of public health and ecological problems in the community, control of communicable diseases; air, water and soil contamination. Recommended for non-majors interested in ecology and pollution control. (Lecture 3 hours.)

322. Medical Parasitology (3) F, S Kazan
Prerequisites: Six units of biological science including Biology 216, Microbiology 210. Survey of parasitic protozoa and helminths of animals; emphasis on human parasites. Identification of fresh and preserved specimens. (Lecture 2 hours, laboratory 3 hours.)

323. Hematology (3) F, S Staff
Prerequisites: Six units of biological science, Microbiology 210. Physiology and pathology of blood; preparation of blood for counts, hemoglobin determination, and related procedures. (Lecture 2 hours, laboratory 3 hours.)

330. Immunology and Serology (4) F, S Fung
Prerequisites: Microbiology 320, Chemistry 327 or consent of instructor. Principles of immunity, immune response in vivo and in vitro, immunohematology, forensic serology, syphilis serology, and the principles and uses of serologic methods for the qualitative and quantitative evaluation of the immune response. (Lecture 2 hours, laboratory 6 hours.)

340. Microbial Taxonomy (3) F Staff
Prerequisites: Microbiology 210, Biology 216, Chemistry 327. Principles and theories of naming organisms. Advanced laboratory procedures in differentiation of micro-organisms. (Lecture 1 hour, laboratory 6 hours.)

345. Pathobiology (2) F, S Kazan
Prerequisites: Biology 208A-B; Chemistry 300; Microbiology 210. Introduction to the pathological processes in man, including host-parasite relationships, cellular changes, inflamation, immunological responses, neoplasm, genetically determined biological variations, degenerative diseases and the aging process. Not open to students with credit in Microbiology 361 or Nursing 361. Not open to microbiology majors. (Lecture, demonstration 2 hours.)

360A-B. Medical Mycology (2,2) F, S Swatek
Prerequisites: Microbiology 210, 320, Chemistry 111B. Introduction to pathogenic fungi commonly responsible for mycotic infections of man. (Lecture 1 hour, laboratory 3 hours.)

361. Control of Disease Patterns in the Community (3) S Kazan
Principles of epidemiology and their application to health; fundamentals of biomedical statistics; basic factors in classic epidemiological studies and the prevention and control of infectious and non-infectious diseases.

412. Laboratory Techniques (2) F, S Staff
Prerequisite: Consent of instructor. Experience for advanced students in organization and techniques of a microbiology laboratory. (Conference 1 hour, laboratory 3 hours.)

424. Advanced Hematology (3) F Staff
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 3 hours.)

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 reckettsial 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 Staff
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) S Staff
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.)

431. Principles of Immunobiology (3) S Fung
Prerequisites: Microbiology 330, Chemistry 441A-B, consent of instructor. Integrated biological and chemical consideration of immunology. Host-parasite-relationships and immune response of antigens and antibodies, their physical, chemical and biological properties and the mechanisms, dynamics and kinetics of the antigen-antibody reaction. (Lecture 1 hour, laboratory 6 hours.)

441. Marine Microbiology (3) F Kim
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, Biology 216, 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 Brodetsky
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 Brodetsky
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.)

461. Mycology (3) F, S Petty
Prerequisite: Microbiology 210 or Biology 211. Structural development and classification of the important genera and species of fungi. (Lecture 2 hours, laboratory 3 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 techniques used in the study of bacterial structure and physiology. (Laboratory 6 hours.)

473. Industrial Microbiology (3) 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 Staff
Prerequisites: Senior in microbiology, consent of instructor. Faculty and student presentation and analysis of current topics in microbiology.

496. Investigations in Microbiology (1-3) F, S Staff

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 library 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)

514. Microbiological Instrumental Methods and Analysis (3)

526. Biochemical Diagnostic Procedures in Microbiology (3)

546. Clinical Diagnosis by Laboratory Methods and Quality Control (4)

550A. Experimental Microbiology: Microbial Ecology (3)

550B. Experimental Microbiology: Immunochemistry (3)

550C. Experimental Microbiology: Microbial Metabolism (3)

550D. Experimental Microbiology: Eumycetes (3)

550E. Experimental Microbiology: Medical Parasites (3)

550F. Experimental Microbiology: Schizomycetes (3)

550G. Experimental Microbiology: Viruses (3)

691. Supervised Independent Study (1-4)

694A,B. Seminar in Principles and Theories of Microbiology (1,1)

695. Seminar in Immunogenetics (2)

696. Field Experience in Medical Laboratory Supervision (2-4)

697. Directed Research (1-3)

698. Thesis (1-6)

Philosophy

Department Chairman: Dr. Shane Andre.

Professors: Bonis, McGowan, Massey, Maue, Peccorini, Ringer, Strickler.

Associate Professors: Andre, W. Johnson, H. Kim, Quest.

Assistant Professors: Clark, Guerrieri, Spangler.

Academic Advising Coordinator: Dr. Shane Andre.

The philosophy curriculum is designed for two purposes: (1) To make available to students the opportunity of meeting the general education requirements. To this end, generic lower division and upper division courses are designed to contribute to the general education of the student. They are intended to give practice in reflective thinking and aid the student in formulating a personal philosophy of life. The student is introduced to the basic problems of philosophy, 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 areas of library science, social science, diplomacy, theoretical physical science, and specialized historical studies.

Major in Philosophy for the Bachelor of Arts Degree

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 442, 463, 482; and at least 6 units chosen from 413, 414, 421, 422, 423, 424; and at least 3 units chosen from 304, 312, 313, 316, 403, 407, 418, 419, 420, 426. 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

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 304, 312, 313, 316, 403, 407, 418, 419, 420, 426.

Master of Arts Degree in Philosophy

Master of Arts Degree in Asian Studies

Programs of study leading to the master of arts degree in philosophy and the interdisciplinary master of arts degree in Asian studies are offered. For detailed information concerning requirements see the *Graduate Bulletin*.

Lower Division

100. Introduction to Philosophy (3) F, S Staff
Scope, basic principles and a brief analysis of the major problems of philosophy.

160. Introductory Ethics (3) F, S Staff
Concepts of right and wrong, good and bad, and the application of moral principles to problems of everyday life.

170. Traditional Logic (3) F, S Staff
Elements of clear, straight, orderly thought, including deductive and inductive reasoning; and the accurate use of language.

203. History of Early Philosophy (3) F, S Staff
From Thales to the Renaissance including the systems of Socrates, Plato and Aristotle, and their influence on European philosophy through the medieval period. Not open to students with credit in Philosophy 301.

204. History of Modern Philosophy (3) F, S Staff
From the Renaissance of the 20th Century, including the development of modern scientific processes, and the philosophical systems of empiricism, rationalism, idealism, etc. Not open to students with credit in Philosophy 302.

270. Symbolic Logic I (3) F, S Staff
Introduction to the formal techniques of evaluating arguments.

Upper Division

304. Philosophies in America (3) S Ringer
Prerequisite: One lower division philosophy course. Background and development of philosophical ideas, including puritanism, pragmatism, logical empiricism, naturalism, humanism.

305. Philosophy in Literature (3) F Massey, Ringer
Discovery and exploration of philosophical ideas in selected literature.

306. Philosophies of China and Japan (3) S Kim
Prerequisites: Six units of philosophy or consent of instructor. Historical and critical study of the philosophical thought of China and Japan.

307. Philosophies of India (3) F Kim
Prerequisites: Six units of philosophy or consent of instructor. Historical and critical survey with emphasis on basic ideas and traditions.

312. Phenomenology (3) S Bonis, Guerrieri
Prerequisites: Six units of philosophy. Development and impact of phenomenology, as exemplified in the philosophy of Husserl and others.

313. Development of Existentialism (3) F Bonis, Guerrieri, Peccorini
Prerequisites: Six units of philosophy. From Kierkegaard to Sartre.

316. Pragmatism (3) S Quest, Ringer
Prerequisites: Six units of philosophy or consent of instructor. Development of pragmatism as exemplified in the philosophies of Peirce, James, Dewey and Mead.

330. Philosophy of Religion (3) F, S Bonis, Guerrieri, Kim, Peccorini, Quest, Strickler
Prerequisite: Three units of philosophy. Nature and function of religion and of fundamental religious concepts and ideals.

351. Philosophy of the State (3) F Ringer
Democracy, individualism, socialism, cooperativism, communism and authoritarianism in terms of their underlying philosophical principles and beliefs.

352. Philosophy of Law (3) S Kim, Ringer
Prerequisites: Six units of philosophy or consent of instructor. Study of the historical development of the philosophy of law and examination of the problems in the field ranging from general theories to analysis of fundamental legal concepts and normative issues.

353. Philosophy of History (3) F Ringer
Prerequisites: Six units of philosophy or consent of instructor. Theories of history, and examination of presuppositions, basic concepts and categories.

360. Ethics and Ecology (3) F, S Massey
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 looked at from the points of view of the ethical positions studied. Not open to students with credit in Environmental Studies 360.

361. Aesthetics (3) F Massey, Quest
Prerequisite: One lower division philosophy course. Art as a cultural phenomenon, emphasizing the relation of the fine arts to each other, to the practical arts, to science, and to the good life. Exploration of the philosophic bases of criticism and creativity.

381. Philosophy of Science (3) F Clark, Maue
Prerequisites: Nine units of natural science. Problems, methods and fundamental concepts of the sciences, including the relationships of the sciences to each other, to mathematics and to philosophy.

403. Medieval Philosophy (3) F Peccorini, Spangler
Prerequisites: Philosophy 203 and three additional units of philosophy or consent of instructor. From St. Augustine to Ockham with emphasis on the problems of knowledge, nature of God and theories of society.

407. Trends in Contemporary Philosophy (3) F Spangler
Prerequisites: Six units of philosophy or consent of instructor. Patterns of philosophical thought in our age.

413. Continental Rationalism (3) F Bonis, Massey
Prerequisites: Six units of philosophy. Descartes, Spinoza and Leibnitz, and some significant contributions of their successors.

414. British Empiricism (3) S Clark, McGowan
Prerequisites: Six units of philosophy. Locke, Berkeley, Hume, and some significant contributions of their successors.

418. Philosophies of Process (3) S Staff
Prerequisites: Six units of philosophy. Philosophical thought of Bergson, James, Whitehead and others in contrast to traditional substance philosophies.

419. Contemporary Analytic Philosophy (3) F Andre, Johnson
Prerequisites: Philosophy 100, 170 and at least one upper division philosophy course. Major ideas and philosophers in linguistic and logical analysis with emphasis on theory of knowledge.

420. Pre-Socratic Philosophy (3) F Guerrieri, Spangler, Strickler
Prerequisites: Six units of philosophy including Philosophy 203. Main philosophical thinkers from Hesiod to the Socratic schools.

421. Plato (3) F Guerrieri, Spangler, Strickler
Prerequisites: Six units of philosophy. Thought of Plato based primarily on readings from his dialogues.

422. Aristotle (3) S Guerrieri, Spangler, Strickler
Prerequisites: Six units of philosophy. Thought of Aristotle based primarily on readings from his works.

423. Kant (3) F Bonis, Johnson, Peccorini
Prerequisites: Six units of philosophy (three in logic or history of philosophy) or consent of instructor. Study of Kant's Critique of Pure Reason.

424. Hegel (3) S Bonis, Guerrieri
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.

425. Individual Philosophers (3) F Staff
Prerequisite: Consent of instructor. An influential philosopher not generally examined in depth in other established courses. May be repeated for a maximum of 6 units.

426. Post-Aristotelian Philosophy (3) S Spangler
Prerequisites: Six units of philosophy, including Philosophy 203. Period after Plato and Aristotle to the close of the Academy in 529 A.D., concentrating on the teaching of the Epicureans, Stoics, Sceptics and Neoplatonists.

442. Metaphysics (3) F, S Bonis, Guerrieri, Peccorini, Strickler
Prerequisites: Six 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.

463. Ethics (3) F, S Andre, Quest, Strickler
Prerequisite: Philosophy 100 or 160. Selected ethical systems using primary source materials.

464. Theories of Value (3) S Bonis, Kim, Massey, Maue, Quest
Prerequisites: Six units of philosophy including Philosophy 100 or 160. Clarification and exploration of common features shared by moral, aesthetic, social, religious, and intellectual norms.

470. Symbolic Logic II (3) F, S Clark, Quest
Prerequisite: Philosophy 270 or Mathematics 330 or consent of instructor. Philosophical consideration of deductive systems.

481. Philosophy of Perception (3) F Johnson, McGowan
Prerequisites: Six units of philosophy or consent of instructor. Relation of perception to knowledge.

482. Epistemology (3) F, S Andre, Clark, Johnson
Prerequisite: Philosophy 100 or 170. Examination of the phenomena of knowing, and of concepts involved in knowledge.

483. Philosophy of Mind (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.

484. Philosophy of Language (3) S Guerrieri, Johnson, McGowan, Spangler
Prerequisites: Six units of philosophy or consent of instructor. Philosophical thought about language and meaning.

485. Philosophy of Action (3) F Clark, Johnson, Spangler
Examination of the literature and problems concerning the idea of an action; emphasis on the relation between an action and bodily movements, and the relation between acts and intentions and desires. Course stresses individual research and seminar reports.

490. Special Problems (3) S Staff
Prerequisites: Six units of upper division philosophy courses. Exploration of special and significant philosophical problems. May be repeated for a maximum of six units.

499. Directed Studies (1-2) F, S Staff
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)

572. Problems in Theory of Value (3)

620. Seminar in History of Philosophy (3)

630. Seminar in Philosophy of Religion (3)

640. Seminar in Metaphysics (3)

680. Seminar in Epistemology (3)

681. Seminar in the Philosophy of Science (3)

690. Seminar in Selected Topics of Current Interest (3)

697. Directed Research (1-2)

698. Thesis (2-4)

Physics

Department Chairman: Dr. R. Dean Ayers.

Emeritus: Olaf P. Anfinson.

Professors: Appleton, Buchner, Chow, Fredrickson, George, Hutcherson, Hu, Lerner, Luke, C. Roberts, Salem, Scalettar, C. Schultz, Scott, Shen, Yano.

Associate Professors: Anwar, Ayers, Chen, Eliason, Munsee, Schechter, Trubatch, Woollett.

Assistant Professor: Alexandrov.

Lecturers: Ferguson, Gieniec, Zappala.

Academic Advising Coordinator: Dr. R. Dean Ayers.

Major in Physics for the Bachelor of Science Degree

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 must 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 Mathematics 122, 123, 224 and 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 460A-B; 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 remaining units are to be chosen from Physics 311, 330, 360, 380, 410, 420, 434, 435, 444, 451, 452, 453, 454, 457, 460, 470, 481, 482, 483, 484, 485, 486, 490, 496.

Major in Physics for the Bachelor of Arts Degree

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 to prepare teachers for 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, 360, 460, 461, 462, 463.

Minor in Physics

A minimum of 20 units which must include:

Lower Division: Physics 151, 152, 153.

Upper Division: A minimum of eight units which may not include Physics 300 or Physics 305.

Master of Arts Degree in Physics
Master of Science Degree in Physics

Programs of study leading to the master of arts degree in physics and master of science degree in physics with an option in metals physics are offered. For detailed information concerning requirements see the *Graduate Bulletin.*

Lower Division

100A-B. General Physics (4,4) F, S Staff
Prerequisite: Mathematics 101 which may be taken concurrently. Physics 100A is a 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. (Lecture 3 hours, laboratory 3 hours.)

101A,B. Physics for the Curious (3,3) F, S Lerner
Prerequisite: Physics 101A: none. 101B: 101A or high school physics or equivalent or consent of instructor. Introductory course for students with a serious interest in understanding the workings of the physical universe. Methodology and philosophical foundations of physics will be stressed. Topics will include the theory of motion, gases, heat, gravitation, electromagnetism and the relativistic and quantum revolutions. If one unit of Physics 103 is taken concurrently with 101A or 101B, the requirements for a laboratory science course will be satisfied. (Lecture 3 hours.)

103. Introduction to Experimentation (1) F, S Munsee
Prerequisite: Physics 100A, 101A, 104 or 110 (may be taken concurrently with these courses). Objective is to give an idea of how an experimentalist operates and a first-hand knowledge and an in-depth feeling for the physics involved in a few situations. The first project is to build a Heathkit oscilloscope. Subsequent projects will be chosen by the student according to his interests. May be taken for up to six units of credit.

104. Survey of General Physics (4) F Hutcherson
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.)

120. General Physics: Mechanics of Fluids and Heat (3) F, S Staff
Prerequisites: Physics 110, Mathematics 123 which may be taken concurrently. Will not be offered after fall semester, 1975. (Lecture-problems 2 hours, laboratory-problems 3 hours.)

151. Mechanics, Heat and Sound (4) F, S Staff
Prerequisite: Mathematics 122 (may be taken concurrently). Kinematics, Newton's Laws, rotational motion, laws of thermodynamics, wave motion. Not open to students with credit in Physics 110. (Lecture 3 hours, laboratory-recitation 3 hours.)

152. Electricity and Magnetism (4) F, S Staff
Prerequisites: Physics 151, Mathematics 123 (may be taken concurrently). 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 Staff
Prerequisites: Physics 152, Mathematics 224 (may be taken concurrently). 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.)

230. General Physics: Light and Modern Physics (3) F, S Alexandrov, Chow
Prerequisites: Physics 110, Mathematics 224 which may be taken concurrently. Will not be offered after fall semester 1976. (Lecture-problems 2 hours, laboratory-problems 3 hours.)

240. General Physics: Electricity and Magnetism (3) F, S Ayers, Fredrickson
Prerequisites: Physics 110, Mathematics 224 which may be taken concurrently. Will not be offered after spring semester 1976. (Lecture-problems 2 hours, laboratory-problems 3 hours.)

261. Elementary Mathematical Physics I (1) S Appleton, Chen
Prerequisites: Physics 153, Mathematics 224. Physical interpretation of the solution of the second order linear differential equation applied to various physics problems. Emphasis on interpretation of the solution rather than on mathematical analysis. (Lecture-discussion 3 hours—first third of semester.)

262. Elementary Mathematical Physics II (1) S Appleton, Chen
Prerequisites: Physics 153, Mathematics 224. Use of vector analysis in the formulation and solution of physics problems. Emphasis on the interpretation of the results rather than on mathematical analysis. (Lecture-discussion 3 hours—second third of semester.)

263. Elementary Mathematical Physics III (1) S Appleton, Chen
Prerequisites: Physics 153, Mathematics 224. Use of Fourier series, Fourier transforms and Laplace transformations in the solution of physics problems. Emphasis on interpretation of results rather than on mathematical analysis. (Lecture-discussion 3 hours—final third of semester.)

300. Survey of Modern Physics (3) S George, Roberts
Prerequisites: Physics 100B and Mathematics 101. Descriptive course in atomic and nuclear physics and the quantum nature of radiation. Not open for credit to majors in physics. (Lecture 3 hours.)

305. Physics of a Polluted Planet (3) F, S Woollett
Case studies of selected environmental problems. Each case study will include the social and economic context, the relevant physical concepts and mechanisms and quantitative comparisons of available options. Recommended for non-science majors and prospective teachers. (Lecture 3 hours.)

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, 1976 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) F Eliason, Roberts
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 Appleton, Ayers
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 340A is not open to students with credit 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 Luke, Scott
Prerequisite: Mathematics 370A (may be taken concurrently). Techniques of solving physics problems requiring numerical or graphical analysis. Computer methods. Problems selected from optics, electrostatics, mechanics, relativity. Not open to students with credit in Mathematics 323. (Lecture-discussion 3 hours.)

380. Fundamentals of Electronics (3) S Eliason, Hutcherson
Prerequisite: Physics 152. Electronic phenomena in vacuum and solids applied to electron device structures; circuit models of electron tubes and transistors. Fundamental electronic circuits. (Lecture 2 hours, laboratory 3 hours.)

406. Laboratory Techniques (1-2) F, S Eliason
Prerequisite: Previous enrollment in a lower division physics course comparable to the one to which the student will be assigned. There will be regular formal lectures for this course. May be repeated to a maximum of four units of credit.

410. Relativity (3) F, 1976 and alternate years Scalettar, Shen
Prerequisites: Physics 340A, Mathematics 370B. The Lorentz transformation, 4-vectors, relativistic kinematics, electromagnetic fields and introduction to general relativity and cosmology. Application to classical and modern physics. (Lecture-discussion 3 hours.)

420. Statistical Physics (3) S, 1977 and alternate years Lerner, Munsee
Prerequisite: Physics 450. Fundamental hypotheses of statistical mechanics. Applications include classical and quantum gases, electric and magnetic systems, fluctuations and condensation.

434. Astrophysics (3) F, 1975 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.)

435. Theoretical Astrophysics (3) S, 1976 and alternate years Alexandrov, Shen
Prerequisite: Senior standing in physics and Physics 434 or consent of instructor.

444. Plasma Physics (3) S, 1976 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 Mechanics (3) F Hu, Scalettar
Prerequisites: Physics 310, Mathematics 370B or 460B. Basics of quantum mechanics with emphasis on one-dimensional examples. Schroedinger's equation, Hermitian operators, superposition principle, indeterminacy, simple potential barriers and wells, angular momentum, hydrogen atom. Not open to students with credit in Physics 450A. (Lecture-discussion 3 hours.)

451. Applications of Quantum Mechanics (3) S, 1976 and alternate years Salem, Scott
Prerequisite: Physics 450. Topics indicating the application of quantum mechanics. Several topics will be discussed such as spin, perturbation theory, molecular quantum mechanics, scattering, Kronig-Penney model, idential particles. Occasionally fewer topics may be selected for more thorough analysis. Not open to students with credit in Physics 450B. (Lecture-discussion 3 hours.)

452. Atomic and Nuclear Physics (3) S, 1977 and alternate years Chen, Munsee
Prerequisite: Physics 450. Selected topics from atomic shell structure and spin-orbit interaction, the Thomas-Fermi and Hartree models, radiation and selection rules, X-rays, static properties of the nucleus, nuclear isotopes, radioactivity, nuclear reactions, interaction of radiation with matter. The semi-empirical mass formula. Nuclear models. (Lecture-discussion 3 hours.)

453. Nuclear Reactor Theory (3) S, 1977 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, 1977 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.)

460. Intermediate Mathematical Physics (3) S Roberts
Prerequisites: Physics 310, 340. Partial differential equations of physics. Calculus of variations. (Lecture 3 hours.)

470. Introduction to Solid State Physics (3) F Fredrickson, Schechter
Prerequisite: Physics 450. Study of the properties of solids from a quantumtheoretical viewpoint. Topics include lattice vibrations, elastic constants, and thermal, electric and magnetic properties. (Lecture 3 hours.)

481. Quantum Physics Laboratory (2) F Ayers
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 3 hours.)

483. Experimental Physics-Spectroscopy (2) F, 1975 and alternate years Fredrickson, George
Prerequisite: Physics 330 or consent of instructor. Selected advanced experiments in atomic spectroscopy in the vacuum ultraviolet, visible and infrared regions covering the range from nanometers to four micrometers. (Lecture 1 hour, laboratory 3 hours.)

484. Experimental Physics-Plasma (2) F, 1976 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.)

485. Experimental Physics-Solid State (2) S, 1976 and alternate years Ayers, Hutcherson
Prerequisite: Physics 470 (may be taken concurrently). Introduction to experimental techniques for investigating the crystal structures and electric, magnetic and thermal properties of metals and semiconductors. (Lecture 1 hour, laboratory 3 hours.)

486. Experimental Physics-Radiation (2) S, 1977 and alternate years Chow
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 Staff
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, acoustics and theoretical physics. Both undergraduate and graduate students may take the course for a maximum 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 contemporary ideas 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 Staff
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.

Graduate Division

500. Research Methods (1)

510. Graduate Mechanics (4)

540A,B. Graduate Electricity and Magnetism and Electrodynamics (4,3)

542. Atomic Theory of Ionized Gases (4)

544. Advanced Plasma Physics (3)

550A,B. Quantum Mechanics (4,3)

551A,B. Quantum Electronics and Laser Physics (3,3)

554A,B. Nuclear Physics (3,3)

560A,B. Methods of Mathematical Physics (4,3)

570. Solid State Physics (3)

574. Semiconductor Physics (3)

694. Seminar in Special Topics (1)

695. Colloquium (1)

697. Directed Research (1-3)

698. Thesis (1-6)

Astronomy

Lower Division

100. Astronomy (3) F, S Luke, Schultz
Introductory course in astronomy. The earth moon system and the planets, the stars and their constitution. Survey of the methods of astronomical observation.

101. Astronomy II (3) F, S Buchner, Schultz
Prerequisite: Astronomy 100. Continuation of Astronomy 100 with particular emphasis on the scientific principles used to understand and describe the universe. Light, telescopes, gravity and radioactivity. (Lecture 2 hours, laboratory 3 hours.)

200A,B. Introduction to Astronomy and Astrophysics (3,3) F, S Luke, Schultz
Prerequisite: Mathematics 101 (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. (Lecture-discussion 3 hours.)

Upper Division

304. Observational Astronomy (1) On demand Staff
Prerequisite: Astronomy 200A (may be taken concurrently). Techniques and instruments of visual observation and photography of celestial objects. (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. (Lecture-discussion 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 Fredrickson
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
Non-mathematical 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.)

360. Computer Methods for Science Students (1-2) F, S Schultz
Prerequisites: Mathematics 100 or equivalent and a mini-course in a computer terminal language. Limited to students majoring in one of the physical or biological sciences. A course involving the use of computer terminal to solve problems occurring in the student's major. Emphasis on individual programs developed by the student. Statistics, curve fitting, sorting, record keeping and evolution.

Graduate Division

512A-B. Modern Physical Science (3,3)

696. Research Methods (3)

698. Thesis or Project (1-4)

Political Science

Department Chairman: Dr. Robert L. Delorme.

Professors: Chawla, I. Cohen, L. Hardy, Hayes, Lien, Trombetas, Urquhart.

Associate Professors: Delorme, Erb, Kacewicz, Leiter, Marsot, Ridder, P. Schmidt, Sherain, Soe, Steiner, Stevens, Weaver.

Assistant Professors: Goerl, Mandelman, Newman, Rocha, R. Schmidt, Scott.

Credential Adviser: Dr. Irving Ahlquist (History Department).

Academic Advising Coordinator: 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 421 (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 425. Students who have taken American federal, state or local government at another institution should check with the political science faculty before enrolling.

Major in Political Science for the Bachelor of Arts Degree

Lower Division: Political Science 100, 201 and either 210 or 215.

Upper Division: A minimum of 27 units distributed as follows:

(a) three units from four of the following six areas: international relations: 300, 305, 307, 311, 312, 313, 321; comparative politics: 330, 333, 335, 337, 341, 345, 347, 350, 351, 352, 355, 360, 365; political theory: 370, 375, 380, 385, 390, 393; public law: 400, 405, 408, 411, 414, 415; politics and policy formation: 423, 425, 426, 427, 430, 432, 440, 441, 445, 450, 453; public policy and administration: 460, 462, 465, 471, 475, 481, 485, 487, 491, 492.

(b) Nine units from a fifth area including 490A, 490B, 490C, 490D, 490F, or 490G.

(c) Six units of electives which may include 497 and 499.

Major in Political Science for the Bachelor of Arts Degree with an Option in Public Administration

Lower Division: Political Science 100 , 201 and either 210 or 215.

Upper Divison: A minimum of 36 units distributed as follows:

(a) Three units from each of four of the following areas: international relations: 300, 305, 307, 311, 312, 313, 321; comparative politics: 330, 333, 335, 337, 341, 345, 347, 350, 351, 352, 355, 360, 365; political theory: 370, 375, 380, 385, 390, 393; public law: 400, 405, 408, 411, 414, 415; politics and policy formation: 423, 425, 426, 427, 430, 432, 440, 441, 445, 450, 453.

(b) Twelve units from the area of public policy and administration: 460, 462, 465, 471, 475, 481, 485, 487, 491, 492. (460 and the Proseminar are required.)

(c) Six units of electives in political science which may include 497 and 499.

(d) Three units of economics and three units of statistics from an approved list of courses available in the department.

Minor in Political Science

A minimum of 21 units which must include:

Lower Division: Political Science 100 or 421, 201.

Upper Division: Five courses selected from Political Science 300, 330, 375, 400, 425, 430, 460.

Master of Arts Degree in Political Science

Master of Arts Degree in Asian Studies

Programs of study leading to the master of arts degree in political science and the interdisciplinary master of arts degree in Asian studies are offered. For detailed information concerning requirements see the *Graduate Bulletin.*

Lower Division

100. American Political Institutions (3) F, S Staff
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 Staff
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 Staff
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 Staff
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.

297. Sophomore Colloquium (3) F, S Pfiffer
Prerequisites: Consent of instructor, sophomore standing, nine units of lower division political science. Analysis of significant, contemporary political problems.

Upper Division

International Relations

300. Introduction to International Politics (3) F, S Chawla, Cohen, Ridder, Steiner
Interaction of "great powers"; the influence of balance of power, imperialism, prestige, and the preservation of the *status quo* in the international sphere.

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 and neutrality.

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 the context of the world situation.

311. American Foreign Policy (3) S Cohen, Steiner
Prerequisite: Political Science 300. Systematic study of the foreign policy of the United States. Contemporary problems will receive special emphasis.

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 300.

313. Soviet Foreign Policy (3) F Erb, Kacewicz
Soviet foreign policy since 1917—its origins, evolution, dynamics and objectives in selected areas of the world.

321. National Security Policies (3) F, S Erb, Steiner
Analysis of strategic posture with emphasis on military, political and economic interrelationships as they influence national security and international politics.

Comparative Politics

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.

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.

335. Government and Politics of the USSR (3) F, S Erb, 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.

337. Governments of Eastern Europe (3) S Kacewicz
Recent political, economic, constitutional, governmental and interbloc developments in Eastern Europe. Emphasis on the separate roads to Communism and Communist internationalism.

341. Society and National Politics of China (3) F Chawla, Marsot
Developments in government, parties, process of elections and political ideology of China.

345. Society and National Politics of India (3) F Chawla, Marsot
Developments in government, parties, process of elections and political ideology in India.

347. Government and Politics of Southeast Asia (3) S Marsot
Emergence and development of the contemporary political systems of Southeast Asia.

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.

351. Contemporary Latin American Politics (3) F Delorme
Role and characteristics of major socio-political groups; major problems of development and underdevelopment.

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.

355. Governments and Politics in the Near and Middle East (3) F, S Newman, Trombetas
Comparative study of political systems in the Near and Middle East with special emphasis on their political forms, governmental and social structure.

360. Governments and Politics of Sub-Sahara Africa (3) F, S Newman
Government and politics of leading and representative Sub-Sahara African states with emphasis on development of temporary leadership, political institutions and ideologies.

363. Society and National Politics of Japan (3) On demand Marsot
Modern developments in government, parties, process of elections and political ideology of Japan.

365. The Politics of Development (3) F, S Chawla, Marsot, Newman, Weaver
Problems of political development in the emergent nations of Asia, Africa and Latin America.

Political Theory

304. Recent Political Theory (3) F, S Mandelman
Dominant concepts, theories and theorists of the late 19th and 20th centuries: Marx, Nietzche, Freud, Dewey, Camus.

370. Classical Political Theory (3) F Scott, Urquhart
Critical examination of Western political philosophy from Plato to the 16th century. Emphasis on major political philosophers.

375. American Political Theory (3) S Mandelman
Critical examination of theorists, concepts and forces which have shaped American political consciousness from the Puritans to the present.

380. Modern Political Theory (3) F, S Mandelman, Urquhart
Critical examination of western political theory from the 16th century to the 19th. Emphasis upon major political theorists.

385. Contemporary Political Ideologies (3) F Soe
Development and change in the major political ideologies of the 20th Century, including communism, corporatism, fascism, liberalism and socialism.

390. Asian Political Theory (3) S Chawla, Marsot
Traditional and modern political thought with major emphasis on the developments of modern ideologies.

393. Great Political Thinkers (3) S Mandelman
Prerequisites: Six units of political theory recommended. Individual political thinkers, such as Plato, Aristotle, Machiavelli or Nietzsche will be chosen each semester for intensive study. Not open to students with credit in Political Science 493.

Public Law

400. Constitutional Development: Rights (3) F, S Hayes, Lien, Sherain
Prerequisite: Political Science 100 or 421 or equivalent. Analysis of the rights and guarantees contained in the Bill of Rights and other constitutional and statutory provisions with leading cases.

405. Constitutional Development: Power (3) F, S Hayes, Lien, Sherain
Prerequisite: Political Science 100 or 421 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.

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 which the courts have the potential to correct them.

411. Modern Legal Systems (3) F Hayes
Nature of law, public and private, with emphasis upon cases and materials illustrating the development of Anglo-American legal institutions and processes. Background for the professional study of law.

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 Roman law and its principles from the historical, legal and philosophical points of view. Not open to students with credit in Political Science 395.

Politics and Policy Formation

423. The American Presidency (3) S Leiter
Roles and powers of the American presidency.

425. State Government (3) F, S Leiter, R. Schmidt
Political structure and its operation, state-federal relations, state-local relations; particular emphasis on California.

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.

427. American Local Government: Organization and Problems (3) S Leiter, P. Schmidt
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.

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.

432. Public Opinion (3) F, S Stevens
Formation and development of public opinion; methods of measuring public opinion in the political system.

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.

441. Political Behavior (3) F Stevens
Introduction to research in political behavior, emphasizing empirical methods, especially as related to voting, political participation and techniques of political action. (The class will jointly formulate and carry out a research project.)

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.

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.

453. Politics of Health (3) S Weaver
The interest groups and political forces which shape public policy in the health area. Analyzes the elites (e.g., the American Medical Association), the industrial and social interests, and public bureaucracies as reflected in the passage and administration of health legislation.

Public Policy and Administration

460. Introduction to Public Administration (3) F Goerl, Rocha, R. Schmidt, Thompson
Principles and practices of federal, state and local administration.

462. Public Organization and Management (3) F Goerl
Theories of organization and management with emphasis on their relation to administrative problems in civilian and military spheres of American government.

465. Administrative Justice and Law Making (3) S Staff
Process by which administrative agencies decide quasi-judicial cases involving private rights, and make rules and regulations of a quasi-legislative nature affecting private rights with reference to leading judicial decisions.

471. Public Personnel Administration (3) S Rocha
Survey of public personnel administration, including the growth and development of the civil service, the personnel agency, recruitment procedures, position classifications, training programs, employee organizations and retirement systems.

475. Public Financial Administration (3) F Goerl
Role of the modern budgetary process in the determination of policy, administrative integration, control of government operations, intergovernmental relations and relation to private economy.

481. Planning and the Public Interest (3) F P. Schmidt
Public planning as a decisional and allocative activity. Local, State and Federal programs and policies, with special reference to planning in urban regions, role of the planner in society, social consequences of planning.

485. Comparative Public Administration (3) F Weaver
Theories, models, structure and function of public administration in selected countries.

487. Administration of Health Care (3) F Weaver
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.

491. Public Administration Trainee Program I (3) F Staff
Prerequisite: Consent of instructor. Internships in one of the various federal, state or local governmental units in the immediate area.

492. Public Administration Trainee Program II (3) S Staff
Prerequisite: Consent of instructor. Internships in one of the various federal, state or local governmental units in the immediate area.

General

421. American Government (3) F, S Staff
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.

490A. Proseminar in International Relations (3) F, S Staff
Prerequisites: Six units of international relations courses, consent of instructor. Intensive study of selected conceptual and theoretical problems in international relations.

490B. Proseminar in Comparative Politics (3) F, S Staff
Prerequisites: Six units of comparative politics courses, consent of instructor. Intensive study of selected conceptual and theoretical problems in comparative politics.

490C. Proseminar in Political Theory (3) F, S Staff
Prerequisites: Six units in political theory courses, consent of instructor. Intensive study of selected conceptual and theoretical problems in political theory.

490D. Proseminar in Public Law (3) F, S Staff
Prerequisites: Six units in public law courses, consent of instructor. Intensive study of selected conceptual and theoretical problems in public law.

490F. Proseminar in Politics and Policy Formation (3) F, S Staff
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.

490G. Proseminar in Public Policy and Administration (3) F, S Staff
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.

497. Special Topics (3) F, S Staff
Prerequisite: Consent of instructor. Analysis of selected contemporary issues and problems. May be repeated for a maximum of six units with different topics.

499. Readings and Conference in Political Science (1-3) F, S Staff
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

553. Politics of Health (3)

587. Administration of Health Care (3)

600. Seminar in International Politics (3)

610. Seminar in Comparative Government (3)

620. Seminar in Political Theory (3)

630. Seminar in Public Law (3)

640. Seminar in American Government (3)

645. Seminar in Metropolitan Politics (3)

650. Seminar in Politics (3)

655. Seminar in Legislation (3)

660. Seminar in Public Administration (3)

665. Seminar in Bureaucracy (3)

697. Directed Research (1-3)

698. Thesis (1-4)

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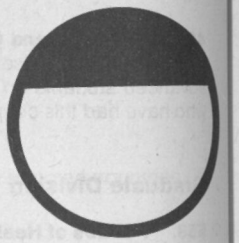
Psychology



Department Chairman: Dr. John R. Jung.

Professors: Bradley, Carlson, Creamer, DeHardt, Hanson, Heintz, Hommel, Jarrett, Jung, McClelland, Mason, Newman, Nygaard, Raine, Resch, Thayer, Towner.

Associate Professors: Binder, Danson, Fiebert, Fiebiger, Green, Haralson, Hupka, Kapche, Linden, Lindner, Lowenthal, Petersen, Rhodes, Smith.

Assistant Professors: Caloca, Colman, Connor, Jorgenson, Nummedal, Padilla, Singer.

Credential Adviser: Dr. Paul Petersen.

Lecturers: Benassi, Davis, Kjos.

Academic Advising Coordinator: Dr. Len Hommel.

The psychology curriculum is designed to provide undergraduate students with: (1) a broad background in the principles of modern psychology, (2) a knowledge of applications of psychology in special fields and (3) skills and techniques of psychological measurement and investigation.

The curriculum is flexible in order to be relevant to various kinds of educational needs. Students are permitted a large number of elective courses and are encouraged to choose those electives appropriate to their particular interests and goals.

Some goals might be: *Liberal Arts:* a general program for students who wish a well rounded background in psychology; *Graduate Study:* a program for students who plan towards an advanced degree in psychology; *Quantitative Methods:* a specialized program for students whose interests focus on mathematical models, statistical applications, testing and measurement; *Industrial:* a specialized program for students who desire application to industrial psychology; *Clinical:* an upper division core program for selected students.

A curriculum brochure listing suggested programs may be obtained at the department office. Additional counseling is also available.

Enrollment in a course for which the prerequisite(s) has not been completed requires permission from the instructor.

Major in Psychology for the Bachelor of Arts Degree

Lower Division: Psychology 100, 221A-B; Mathematics 100 (see prerequisites to Psychology 221A).

Upper Division: A minimum of 24 units in psychology including either of the following: Psychology 321 or 322, or a combination of Psychology 310 and one of the following pairs of courses: Psychology 333 and 334, 337 and 338, 341 and 342, 345 and 346, 351 and 352, 356 and 357, 361 and 362, 434 and 435.

For students not working for a teaching credential with prior departmental approval a maximum of six units from related academic disciplines may be substituted for six of the upper division units.

Master of Arts Degree in Psychology

Master of Science Degree in Psychology

Programs of study leading to the master of arts degree in psychology and the master of science degree in psychology with options in community-clinical and industrial are offered. For detailed information concerning requirements see the *Graduate Bulletin*.

Lower Division

100. General Psychology (3) F, S Staff
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 Staff
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. Not open to students with credit in Psychology 256.

221A. Introduction to the Study of Behavior I (4) F, S Staff
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 an equivalent course. Study of basic behavioral processes using the major techniques of observation and investigation: laboratory, naturalistic and statistical. Independent investigative projects developed, performed and reported, with group participation in planning and discussion of projects. Not open to students with credit in Psychology 210 or 220. (Lecture 2 hours, laboratory and field 4 hours.)

221B. Introduction to the Study of Behavior II (4) F, S Staff
Prerequisite: Psychology 221A. Continuation of Psychology 221A. (Lecture 2 hours, laboratory and field 4 hours.)

Upper Division

310. Intermediate Statistics (3) F, S Staff
Prerequisite: Psychology 221A or introductory statistics course. Basic theoretical concepts of statistics and the use of these concepts in the selection and development of model testing, hypothesis testing and parameter estimation procedures. Both single measure (univariate) and correlational (bivariate) concepts will be covered.

315. Principles of Psychological Testing (3) F, S Jarrett, Rhodes, Towner
Prerequisite: Psychology 221A 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.

321. Laboratory Methods of Psychology (6) F, S Binder, Padilla
Prerequisites: Psychology 221A-B or one statistics and one laboratory psychology course. Study of behavior by controlled environment techniques. Content will include topics from biological, historical and ecological determinants of behavior. Not open to students with credit in Psychology 311. (Lecture 5 hours, laboratory 3 hours.)

322. Naturalistic Methods of Psychology (6) F, S Staff
Prerequisite: Psychology 221A-B or one statistics and one laboratory psychology course. Study of behavior by naturalistic techniques. Content will include topics from biological, historical and ecological determinants of behavior. Not open to students with credit in Psychology 312. (Lecture 5 hours, laboratory 3 hours.)

331. Sensation and Perception (3) F, S Colman, DeHardt, Haralson
Prerequisite: Psychology 221A or one laboratory course in psychology. Basic phenomena of the senses, their physiological correlates and integration in complex perceptual judgments. (Lecture 3 hours.)

333. Psychology of Learning (3) F, S Bradley, Danson, Padilla, Singer
Prerequisite: Psychology 221A or one laboratory course in psychology. Human and animal learning with special emphasis on experimental evidence and techniques. For optional laboratory see Psychology 334. (Lecture 3 hours.)

334. Laboratory in Learning (1) On demand Bradley, Danson, Padilla, Singer, Smith
Prerequisite or corequisite: Psychology 333. Observations and experiments on selected topics in learning covered in Psychology 333. (Laboratory 3 hours.)

337. Motivation and Emotion (3) F, S Hommel, Hupka, Jung, Thayer
Prerequisite: Psychology 221A or one laboratory course in psychology. Situational and physiological determiners of behavior, theories of motivation and emotion, discussion of techniques and problems in the study of motivation. For optional laboratory see Psychology 338. (Lecture 3 hours.)

338. Laboratory in Motivation and Emotion (1) On demand Hommel, Hupka, Jung
Prerequisite or corequisite: Psychology 337. Observations and experiments on selected topics in motivation and emotion covered in Psychology 337. (Laboratory 3 hours.)

341. Neuropsychology (3) S Green, Haralson
Prerequisite: Psychology 221A or one laboratory psychology course. Neurological correlates of behavior with special emphasis upon central nervous system structure and function. Experimental evidence on which neuropsychological theories of behavior are based. For optional laboratory see Psychology 342. (Lecture-discussion 3 hours.)

342. Laboratory in Neuropsychology (1) S Green, Haralson
Prerequisite or corequisite: Psychology 341. Introduction to laboratory techniques in neuropsychology. Fundamentals in neuroanatomy and surgical stimulation and some recording techniques. (Laboratory 3 hours.)

343. Comparative Psychology (3) F Haralson
Prerequisite: Psychology 221A or one laboratory course in psychology. Phylogenetic differences in animal behavior leading to the development of psychological principles. (Lecture 3 hours.)

345. Psychophysiology (3) F Green
Prerequisite: Psychology 221A or one psychology laboratory course. Physiological changes occurring in humans during particular behavioral states. Theoretical problems and methodological approaches. For optional laboratory course see Psychology 346. (Lecture-discussion 3 hours.)

346. Laboratory in Human Psychophysiology (1) F Green
Prerequisite or corequisite: Psychology 345. Introduction to research and methodology in study of human psychophysiology. Polygraph recording and analysis. (Laboratory 3 hours.)

350. Psychology and Contemporary Social Issues (3) F, S Carlson
Prerequisite: Psychology 100. Application of social psychological principles toward understanding major contemporary issues.

351. Social Psychology (3) F, S Carlson, Heintz, Jorgenson, Lindner, Thayer
Prerequisite: Psychology 100. Ways in which personal adjustment, mental processes, and skilled performances vary as functions of differences in social experience. Includes attitudes, communication, leadership, opinion, propaganda, suggestion and related topics. Not open to students with credit in Sociology 335.

352. Laboratory in Social Psychology (1) On demand Thayer
Prerequisite: Psychology 221A or consent of instructor. Pre or co-requisite: Psychology 351. Methods and problems in research in social psychology, both in laboratory and naturalistic settings. (Laboratory 3 hours.)

353. Humanistic Psychology (3) F, S Singer
Prerequisite: Psychology 221A or one laboratory course in psychology. 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.

354. Psychology of Women (3) F, S DeHardt
Prerequisite: Psychology 100. Psychology of sexism; the biological and social determinants of the psychology of women.

355. Therapist and Experimenter Effects (3) F DeHardt
Prerequisites: Psychology 221A,B and 350 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, male-female and straight-gay therapist-client combinations. Consideration of the validity of research and therapy generally on social minority persons.

356. Personality Structure and Development (3) F, S Jung, Kapche, Lindner, Raine
Prerequisite: Psychology 221A or 370. Modern views of personality structure and functioning.

357. Laboratory in Personality (1) On demand Lindner
Prerequisite: Psychology 221A or consent of instructor. Pre- or co-requisite: Psychology 356. Methods and problems in research in personality. (Laboratory 3 hours.)

361. Developmental Psychology (3) F, S Jung, Nummedal, Petersen
Prerequisite: Psychology 100. Psychological problems of human development considered with reference to data from studies of children and lower animals.

362. Laboratory in Developmental Psychology (1) On demand Nummedal, Petersen
Prerequisite: Psychology 221A or consent of instructor. Pre- or co-requisite: Psychology 361 or equivalent. Methodological approaches and issues in the study of human development. (Laboratory 3 hours.)

370. Abnormal Psychology (3) F, S Staff
Prerequisite: Psychology 100. Abnormal behavior as it throws light on normal personality adjustment. Consideration of the role of biological, psychological and social factors in personality disorders, together with the consideration of basic principles of mental hygiene.

374. Psychology of Disability (3) F, S Staff
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 factors during hospitalization promoting and impeding adjustment. Same course as Physical Therapy 374. (Lecture 3 hours.)

381. Industrial and Organizational Psychology (3) F, S Bradley, Jarrett, McClelland
Prerequisite: Psychology 100. Problems and procedures in industrial psychology. Consideration of job analysis, personnel selection and appraisal, organizational and social context of human work, physical environment and consumer behavior.

401. History and Systems of Psychology (3) F, S 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-discussion 3 hours.)

402. Contemporary Systematic Psychology (3) F, S Fiebiger, Nygaard
Prerequisites: Six upper division units in psychology. Examination of 20th century systematic formulations and general theoretical approaches. (Lecture-discussion 3 hours.)

403. Mathematical Models of Behavior (3) S Hanson
Prerequisite: Psychology 321 or 322 or 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.)

408. Applying Psychology to Teaching Psychology (3) F, S Danson, Nygaard, Smith
Prerequisites: Nine units of upper division psychology, Psychology 221A, 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.)

409. Projects in Teaching Psychology (3) F, S Danson, Nygaard, Smith
Prerequisites: Psychology 408, consent of instructor. Further experience in assisting students in basic psychology courses. Discussion of research on learning and teaching psychology and the development of teaching materials. Completion of project involving research, development of materials or project with students.

411. Statistical Design and Analysis of Experiments (3) F, S DeHardt, Resch
Prerequisite: Psychology 310 or 321 or 412 or consent of instructor. Simple and complex designs. Statistical inference in economical experimentation and in scientific inference and prediction. (Lecture-discussion 3 hours.)

412. Multivariate Statistical Analysis (3) F, S Hanson, Newman, Towner
Prerequisite: Psychology 310 or 322 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-discussion 3 hours.)

415. Vocational Testing (3) F McClelland
Prerequisite: Psychology 315 or Educational Psychology 320. 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.

418. Computer Applications in Psychology (3) S Jarrett
Prerequisites: Psychology 321 or 322 or 310 and one upper division psychology laboratory course. Foundations of computer technology and its application to psychology. Emphasis on real-time control by digital computers in psychological research and applications. (Lecture 2 hours, laboratory 2 hours.)

427. Engineering Psychology (3) F Creamer
Prerequisite: Psychology 321 or two upper division laboratory courses in psychology including either Psychology 331 or 341 or consent of instructor. Applications of psychological principles to man-machine systems. Includes both an introduction to research techniques in engineering psychology and a survey of existing knowledge in this area. (Lecture 2 hours, laboratory 3 hours.)

434. Cognition (3) F, S Hanson, Jung, Resch, Smith
Prerequisite: Psychology 321 or 322, or 310 and 331 or 333. Problem solving, decision making, concepts, symbols, meaning, language and patterned behavior, controlled and free association, imagination, dreams. Human behavior emphasized. For optional laboratory see Psychology 435.

435. Laboratory in Cognition (1) F Hanson, Jung, Smith
Prerequisite or corequisite: Psychology 434. Observations and experiments on selected topics covered in Psychology 434. (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.

451. Advanced Social Psychology (3) F Carlson, Lindner, Thayer
Prerequisite: Psychology 351. Recommended: Psychology 221A. Intensive coverage of selected contemporary issues and important topics from social psychology. Issues and topics to be covered will be determined each semester. (Lecture 3 hours.)

453. Principles of Group Dynamics (3) S Heintz, Lindner
Prerequisite: Psychology 351 or Sociology 335. Behavior in groups with attention to such factors as leadership, followership, interaction and influence including organization, management, morale, and efficiency. Problems, techniques and methods of investigation.

455. Psychology of Persuasion (3) F, S Carlson
Prerequisite: Psychoqv351 or consent of instructor. Psychological bases of attitude change and social influence. Consideration of the source and communication factors influencing thinking, attitudes and personality, persuasibility and resistance to persuasion.

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.

459. Social Psychology of Homosexuality (3) F, 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.)

472. Laboratory in Clinical Methods (1) F Kapche, Linden, 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 Staff
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.

474. Introduction to Clinical and Community Techniques (4) S Staff
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.)

475. Interviewing and Case Study Methods (3) F, S Fiebert, Linden
Prerequisites: Psychology 472, consent of instructor. Study and development of the clinical techniques of observation, case history and the interview.

476A,B. Applications in Community-Clinical Psychology (3,3) F, S Staff
Prerequisites: Psychology 475, application for 476A 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. Psychology in Industry: Research and Applications (3) F, S Staff
Prerequisites: Psychology 210 and 220, or 221A-B. Selection and training, supervisory practices, performance rating and measurement of employee attitudes, work environment, analysis of organizations, engineering psychology and consumer behavior. Emphasis on techniques for psychological research in the industrial setting.

486. Personnel Psychology (3) F Jarrett
Prerequisite: Psychology 381 or 481. Survey of existing knowledge and description of research techniques in personnel psychology.

490. Special Topics in Psychology (3) F, S Staff
Prerequisite: Consent of instructor. Topics of current interest in psychology selected for intensive development. May be repeated with different topics to a maximum of 15 units, but no more than six units may be used to satisfy the requirements for the major. (Lecture 3 hours.)

499. Independent Study (1-3) F, S Staff
Prerequisite: Consent of department. Student will conduct independent laboratory 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)

520. Instrumentation in Psychology (3)

541. Techniques of Physiological Psychology (3)

554. Attitude and Opinion (3)

573. Clinical Psychology (3)

574. Individual Intelligence Testing (4)

577. Research in Clinical and Community Psychology (3)

586. Psychology of Industrial Relations (3)

590. Advanced Topics in Psychology (3)

610. Seminar in Psychometric Methods (3)

627. Seminar in Human Factors (3)

631. Seminar in Sensation and Perception (3)

632. Seminar in Learning (3)

634. Seminar in Human Learning and Cognitive Processes (3)

637. Seminar in Motivation (3)

641. Seminar in Physiological Psychology (3)

651. Seminar in Social Psychology (3)

656. Seminar in Personality (3)

664. Seminar in Cognitive Development (3)

671. Seminar in Behavior Disorders of Children (3)

672A-B. Seminar in Community Psychology (4,4)

673A,B. Practicum in Community Psychology (1-8)

678. Clinical Practicum (3)

681. Seminar in Applications of Psychology to Industry (3)

688. Practicum in Industrial Psychology (3)

696. Research Methods in Psychology (3)

697. Directed Research (1-3)

698. Thesis (1-4)

Radio-Television

Department Chairman: Dr. B. Joe Langston.

Professors: D. F. Baker, H. Martin, Morehead.

Associate Professor: Langston.

Assistant Professor: S. McMillan.

Academic Advising Coordinator: Dr. B. Joe Langston.

The curriculum and extra-curriculum in radio and television are designed to prepare students for careers in commercial and non-commercial educational broadcasting, as well as for allied careers in film, broadcast journalism and other aspects of the graphic and performing arts in mass communications. A strong emphasis on general education in the liberal arts and sciences provides the major with experiences that develop enlightened expertise in a profession in the mass media.

Students planning to major in radio-television must contact the department because the number of majors is limited.

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 Department are to evaluate the curriculum of the department and to suggest changes in policies, course content and curricular structure to make the students' education more relevant to the profession as a whole. Membership of the Advisory Council is as follows:

Chris Beard, Producer, Blye-Beard Productions

Ron Butler, Audio-Visual Specialist, Nissan Motors Corp.

William Emerson, Director, Broadcast Standards, NBC Television Center

Maury Green, News and Public Affairs Broadcaster

Don Hall, Producer, KNXT-TV

Ida Honoroff, Producer, Radio Station KPFK

Rose Kemp, President, American Women in Radio and Television

Ron Mardigian, Literary Agent, William Morris Agency

Doyle Nave, Business Representative, International Photographers Local 659, I.A.T.S.E. and M.P.M.O.

Stanley Robertson, Vice-President, Film Programs, NBC Television Center

Jay Sandrich, Television Director

Ron Stein, Director of Programming, Theta Cable Television

Clayton L. Stouffer, President, Viewer Sponsored Television Foundation (Channel 68)

Jane Thompson, Senior Media Buyer, Foote, Cone and Belding Advertising Agency

Barret Wetherby, Assistant Executive Secretary, Directors Guild of America

Major in Radio-Television for the Bachelor of Arts Degree

Lower Division: Radio-TV 207, 208, 210.

Upper Division: A minimum of 29 units which must include Radio-TV 300, 406 and 416. Additionally, a minimum of nine units and a maximum of 15 units of the following production courses are required: Radio-TV 301, 302, 306, 307, 308, 309 (may be repeated for credit once with consent of instructor but only three units of Radio-TV 309 may be credited toward fulfilling upper division requirements) and 410.

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

100. The Popular Arts in America—Film and Broadcasting (3) F, S Morehead
Audience approach to appreciation and understanding of motion pictures and broadcasting for the non radio-TV film major. Films, video and audio-tapes, lectures, discussions with staff and visiting specialists will be used.

207. Radio Production (2) F, S Staff
Basic principles and techniques of studio operation, performing, writing and producing for radio. Not open to students with credit in Radio-TV 209. (Lecture, laboratory.)

208. Television Production (2) F, S Staff
Prerequisite: Radio-TV 207 or consent of instructor. Basic principles of planning, writing and producing television programs. Not open to students with credit in Radio-TV 209. (Lecture, laboratory.)

210. Film Production (3) F Staff
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.) Final projects will be given a public performance.

Upper Division

300. History of Broadcasting (3) F, S Staff
Development of broadcasting in America.

301. Television Production (3) On demand Langston
Prerequisite: Radio-TV 208 or 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.

302. Television Activity (1) F, S Baker
Prerequisite: Radio-TV 208 or consent of instructor. Individual and group participation in closed circuit, instructional TV program produced as a function of the Instructional Television Office. Specific assignments determined in consultation with instructor. Hours other than regular class time to be arranged. Not more than one unit may be taken in any one semester. Maximum credit, 2 units.

304. Writing for Broadcasting and Motion Pictures (3) S Langston
Nondramatic and dramatic writing for broadcasting and motion pictures. Student scripts and copy will be produced when possible.

306. Television Directing (3) F Langston, Martin
Prerequisite: Radio-TV 208 or consent of instructor. TV director's responsibilities for casting, scenery, performance, camera choices, shot sequences and microphone technique in creating the TV production. Student video-taped productions will be shown publicly.

307. Radio Activity (1) F, S McMillan
Prerequisite: Radio-TV 207 or consent of instructor. Participation in radio production; hours other than regular class time will be arranged. Maximum credit, two units.

308. Documentary Program Production (3) S Staff
Prerequisite: Radio-TV 208 or 210 and consent of instructor. History, theory and practice of documentary programming. Students will plan, research, write and produce either a videotape or 16 mm film documentary to professional standards. Material costs are expected to be approximately $150 per student.

309. Radio Production (3) F, S McMillan
Prerequisite: Radio-TV 207 or consent of instructor. Planning and producing original programs for the University radio station, KSUL-FM. Experience in radio station operations. (May be repeated for credit to a maximum of six units with consent of instructor. Only three units may be credited toward fulfilling upper division major requirements.)

310. Television and Radio Public Affairs (3) F Staff
History, theory and practice of public affairs broadcasting. Study of interview, forum and special events programs.

311. Advertising and the Electronic Media (3) S McMillan
Theory, role, regulation and procedures of advertising in the electronic media. Study of legal, ethical, commercial and creative principles which the student demonstrates knowledge of by designing advertising strategy, campaigns and scripts.

400. Educational Television (3) F, S Staff
Development of educational television in America. Intensive study of research literature in the field. Current practices in usage of television in the classroom. Demonstrations.

401. Regulation and Management (4) F McMillan
Regulation, organization and administration of radio and television stations and allied electronic business. Study of management of objectives and procedures from organizational and administrative viewpoints with special emphasis on responsibilities as prescribed by legislative and judicial bodies. Includes such regulatory areas as news, programming, sales, engineering and monopoly.

406. Mass Media and Society (3) F, S Morehead
History and impact of the press, broadcasting and motion pictures on American society. Dimensions, social responsibilities and unresolved problems of mass media.

410. Techniques of Motion Picture Production (3) S Staff
Prerequisite: Radio-TV 210 or consent of instructor. Planning and producing original film, resulting in a public performance. Materials costs are expected to be approximately $150 per student. (Students will furnish their own raw film stock and pay for its processing.)

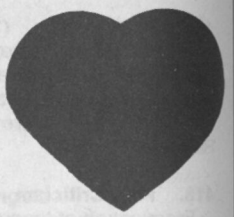
416. Film History (3) S Drum
Historical development of the motion picture, with special emphasis on early invention, the development of technique, the "Golden Age" of the silent film and the present evolution of the sound film. Students are required to spend three hours each week reviewing film. (Lecture 3 hours, reviewing film 3 hours.) Not open to students with credit in Radio-TV 417.

418. Film Criticism (3) F Drum
Examination of theoretical bases of aesthetics and applications to motion pictures. Study of various critical approaches and assessment of current trends and practices. Students are required to spend three hours each week reviewing film. (Lecture 3 hours, reviewing film 3 hours.)

490. Special Topics in Radio-Television (1-3) F, S Staff
Prerequisite: Consent of instructor. Topics of current interest in radio-television selected for intensive development. May be repeated for a maximum of six units. Topics will be announced in the *Schedule of Classes*.

499. Special Projects in Television, Radio and Film (3) F, S Staff
Prerequisite: Consent of instructor. Research into an area of special interest to the student, culminating in a research paper or production. Productions will be limited by equipment and facilities available during any term.

Religious Studies



Acting Director: Dr. Alexander Lipski.

Academic Advising Coordinator: 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 traditions of religion that have appeared in and characterize human culture. The program approaches objectively all religious phenomena, seeking to provide students with an introduction to the major world religions, and then in courses on methodology, literature and history of religions to allow them to study at more advanced levels the areas of greatest interest to them. Courses are offered also dealing with religion in the modern world and in man's culture.

Students interested in the Certificate Program in Religious Studies should apply to the Director, Religious Studies Program, HOB-619.

Requirements for the Certificate in Religious Studies:

A minimum of 30 units in religious studies or courses offered in other departments approved by the Religious Studies Committee.

Lower Division: A minimum of nine units including Religious Studies 111, 152, 100 or 291.

Upper Division: A minimum of 21 units including Religious Studies 301 and one course from each of the following: (a) Biblical Studies: Religious Studies 311, 312, 322; (b) Western Religious Thought: Religious Studies 314, 315, 331, 471, 472, 485; (c) Eastern Religious Thought: Religious Studies 341, 343, 344, 351, 481. A minimum of nine units from the preceding courses and the following electives: Religious Studies 393, 396, 482, 490, 494, 495, 499; American Indian Studies 335; Anthropology 305; Asian American Studies 380; Black Studies 353; Comparative Literature 342; History 333; Philosophy 313, 330, 403; Sociology 429.

Lower Division

100. Introduction to Religion (3) F, S Staff
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.

111. Introduction to Western Religious Thought (3) F, S Staff
A survey of representative figures, themes and schools in Western religious thought, including Judaism, Christianity and Islam. Not open to students with credit in Philosophy 331.

152. Introduction to Asian Religions (3) F, S Staff
A survey of representative figures, themes, schools, and issues in Hinduism, Jainism, Buddhism, Sikhism, Zoroastrianism, Taoism, Confucianism, and Shinto. Not open to students with credit in Philosophy 331.

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 Staff
Study of the methodology of religious studies including the history of religions, comparative and phenomenological study of the religious, textual criticism, exegesis, research methods and field 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. Contemporary Jewish Thought (3) F Eisenman
A view of Judaic thought from the Enlightenment to the present day with emphasis on intellectual trends and contemporary problems: national, spiritual and otherwise.

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.

331. Koran and Islamic Civilization (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. Comparative Buddhism (3) S Staff
Major forms of Asian Buddhism, including Theravada and Mahayana Indian Buddhism, Chinese, Japanese and Tibetan Buddhism, and Buddhism in the non-Asian modern world. Discussion of doctrine, practice, literature and art.

343. Religions of China (3) F Staff
A survey of the major religions of China, particularly Confucianism and Taoism; discussion of original texts and doctrine, practice, art and literature.

344. Religions of Japan (3) S Staff
A survey of the major religions of Japan, including folk religion, Shinto, Buddhism, Confucianism and religious Taoism; discussion of original texts and doctrine, practice, art and literature.

351. Hinduism (3) F Lipski
Survey of ancient, classical and medieval Hinduism, including Vedism and the development of classical devotional and tantric forms.

393. The Scientific Study of Religion (3) F Staff
Examination of the nature of religions using the methodologies and evidence presented primarily by the social sciences.

396. Religion and Humanities (3) S Staff
Examination of the religious dimensions of man's existence as these are expressed in the humanities, including literature, music and the fine arts.

471. Ancient and Medieval Christianity (3) F Staff
Christianity's struggle to self-understanding, from New Testament times through the crucible of the middle ages to the golden age of the Renaissance.

472. Christianity Since the Reformation (3) S Battaglia
Restructuring and renewal of Christianity, from the Reformation through the dawn of modern consciousness to the challenge of 20th century secular life.

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 Staff
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.

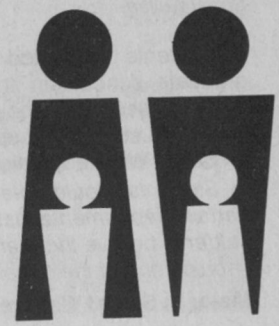
490. Special Topics in Religious Studies (1-3) F, S Staff
Prerequisite: Consent of instructor. Topics of current interest in religious studies selected for intensive development. May be repeated for a maximum of six units. Topics will be announced in the *Schedule of Classes.*

494. Religious Classics (3) F, S Staff
Prerequisite: Three units of religious studies or consent of instructor. Examination of selected religious classics including an analysis of religious themes in significant works of world literature. Specific works will vary.

495. The Religious Personality (3) F, S Staff
Prerequisite: 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.

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

Social Welfare



Department Chairperson: Erma Lee Hutton.

Professor: Ponsar.

Associate Professors: Hutton, Lee, Totman.

Assistant Professors: Glezakos, Granger, Lopez.

Academic Advising Coordinator: Mrs. Erma L. Hutton.

The Department of Social Welfare offers courses leading to the bachelor of arts degree with a major in social welfare to students seeking a professional career in social work. The program is generic in nature and approach so that the student is prepared to enter any area of the social service or allied fields as a professional social worker. This includes such fields as public and private social services, child and family services, mental health, medical and correctional services. The student will also be eligible to enter graduate schools of social work for additional preparation in the above fields, as well as in administration, advanced clinical areas, consultation, research, supervision and teaching.

The program is designed for the student who, through screening and performance in the first course(s) taken in the department, demonstrates ability and promise for development as a professional social worker.

Because of the nature of the curriculum it is strongly recommended that most or all general education units and lower division requirements, outside of the department, be completed prior to entering departmental courses. This will give the student greater assurance of readiness for the content of social work courses. Insofar as possible, the three upper division requirements, outside the department, should be taken early in the student's upper division experience.

Students contemplating declaring, or already accepted in the major, should come to the department for counseling and advising concerning the sequence in which courses should be taken and arrangement of their schedules.

Social welfare majors should consider taking courses particularly in the ethnic studies departments and in the Center for Urban Studies, Center for Women's Studies, Home Economics and Political Science departments as electives or for fulfillment of general education requirements. The department can make recommendations concerning those courses which would be most useful to students interested in acquiring broader information which is closely allied to professional social work practice.

All courses in the department are designed for social welfare majors. However, many of these courses are suitable for fulfilling general education or elective requirements for students outside the major.

Students interested in graduate work should note that 79 accredited graduate schools in the United States offer the two-year program for the master's degree in 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 approved undergraduate social work program.

Students should note that many courses are closed to those who have taken certain departmental listings in previous Undergraduate 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 Welfare for the Bachelor of Arts Degree

Lower Division: Anthropology 120, Biology 206, Psychology 100, Sociology 100, an elementary statistics course, Social Welfare 220, 221.

Upper Division: Economics 300 (or 200 and 201), Psychology 370, Sociology 320, Social Welfare 330, 331, 340, 341, 342, 350, 351, 440, 441, 465, 495A,B.

Lower Division

220. Introduction to Social Welfare (3) F, S Ponsar
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 social work services. Social welfare majors must take this course concurrently with Social Welfare 221. Not open to studentsswith credit in Social Welfare 260.

221. Introduction to Social Welfare Practicum (1) F, S Staff
Open to social welfare majors only. Minimum of three hours of experience in a social service or allied setting, approved by the department, to acquaint 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.

Upper Division

330. Human Behavior and Social Environment I (3) F, S Totman
Prerequisite: Psychology 100. Examination of general explanations and theories of human behavior and the effects of social environment. Implications for social work practice.

331. Human Behavior and Social Environment II (3) F, S Totman
Prerequisite: Sociology 100. Examination of the role and status of the alienated, different and deviant persons in our society. Implications for social work practice.

340. Social Work Practice I (3) F, S Granger
Prerequisites: Social Welfare 220, 221, 330. Concurrent enrollment in Social Welfare 341. Open to social welfare majors only. Social work as a helping process. Basic principles of and generic frameworks for social work practice. Interviewing techniques, the role of the social worker in helping ameliorate and resolve social, emotional and environmental problems and the relationship of these to all methods and approaches of social work. Not open to students with credit in Social Welfare 362.

341. Social Work Practicum (1) F, S Staff
Prerequisite: Concurrent enrollment in Social Welfare 340 or 342. Open to social welfare majors only. Minimum of three hours' experience 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 Welfare 340 and once for credit with Social Welfare 342.

342. Social Work Practice II (3) F, S Granger
Prerequisites: Social Welfare 331, 340, 341. Concurrent enrollment in Social Welfare 341 or 495A. Open to social welfare 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. Not open to students with credit in Social Welfare 365.

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.

351. Social Policy II (3) F, S Hutton
Prerequisites: Social Welfare 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 issues in social welfare policy. Not open to students with credit in Social Welfare 467.

365. Interviewing in Social Welfare (3) F, S Staff
Prerequisite: Social Welfare 340. Interviewing process in the study, psycho-social diagnosis and treatment approach in working with the individual who experiences difficulty in achieving a satisfactory social adjustment. Will be offered for the last time in fall of 1975.

370. Social Services for Families and Children (3) F, S Granger
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.

371. Social Services in Corrections (3) F, S Totman
Contemporary 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. Not open to students with credit in Social Welfare 368.

440. Social Work Practice III (3) F, S Lee, Glezakos
Prerequisites: Social Welfare 331, 340, 341. Concurrent enrollment in Social Welfare 495A or B. Open to social welfare 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 Staff
Prerequisites: Social Welfare 331, 340, 341. Concurrent enrollment in Social Welfare 495B (may be taken concurrently with 495A with departmental consent). Open to social welfare 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 Welfare 340, 341, 342, one course in elementary statistics. Open to social welfare 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 Social Welfare 455 or 455E.

470. Social Services in Health Settings I (3) F, S Ponsar
Survey of the development of scientific medicine, the modern hospital, statutory health regulations and medical social work. Consideration of acute and chronic disabilities which are socially handicapping and the role of the social worker in the delivery of service to the patient, family and community. Not open to students with credit in Social Welfare 472.

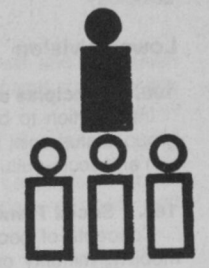
471. Social Services in Health Settings II (3) F, S Staff
Survey of psychiatric concepts, mental health laws, regulations governing the practice of psychiatric social work and descriptions of settings providing mental health services. Consideration of acute and chronic mental and emotional dysfunctions which are handicapping and the role of the social worker in the delivery of services to the patient, family and community.

495A. Field Experience in Social Work (7) F, S Staff
Prerequisites: Social Welfare 331, 340, 341, 350. Concurrent enrollment in Social Welfare 342 and/or 440. Open to social welfare seniors who have been accepted by the department for field work. Supervised practice experience in social welfare agencies and allied settings. Requires weekly three hours of campus seminar and 16 hours minimum in agency placement. Not open to students with credit in Social Welfare 460A,B.

495B. Field Experience in Social Work (7) F, S Staff
Prerequisites: Social Welfare 351, 495A. Concurrent enrollment in Social Welfare 440 and/or 441. Must be taken immediately after 495A. Open to social welfare seniors who have been accepted by the department for field work. Supervised practice experience in social welfare agencies and allied settings. Requires weekly three 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 Staff
Prerequisite: Consent of instructor. Independent study of special topics under supervision of a faculty member.

Sociology



Department Chairman: Dr. Harold G. Hubbard.

Professors: Fradkin, Hartman, Haskell, Hubbard, Korber, Massaro, Penalosa, Sheets, Ullman, Walker.

Associate Professors: Aarons, Anderson, Cereseto, Dank, Fuss, Harman, Leis, Richmond.

Assistant Professors: Halliwell, Lunceford, Parker, Slawski, Turk.

Credential Adviser: Dr. Peggy Anderson.

Academic Advising Coordinator: Dr. Harold G. Hubbard.

The courses in sociology are designed for those who wish a knowledge of the scope and methods of sociology, either for general cultural background or as an integral part of preprofessional training.

Major in Sociology for the Bachelor of Arts Degree

Lower Division: All majors are required to have credit for Sociology 100, 142 and 255. Anthropology 120 is recommended.

Upper Division: Satisfactory completion of at least 51 semester units of college work is required before students will be accepted in upper division sociology courses. All majors are required to have a minimum of 24 units including credit for Sociology 327, 335, 356, 455, 456, and also complete nine units of electives from upper division courses (with exception of Sociology 473 which will not meet major requirements).

Minor in Sociology

A minimum of 20 units which must include:

Lower Division: Sociology 100, 142.

Upper Division: Sociology 335 and a minimum of 11 units selected from courses other than Sociology 355 and 473.

Master of Arts Degree in Sociology

A program of study leading to the master of arts degree in sociology is offered. For detailed information concerning requirements see the *Graduate Bulletin.*

Lower Division

100. Principles of Sociology (3) F, S Staff
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.

142. Social Trends and Problems (3) F, S Staff
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 recommended for teachers who want a general survey of social problems.

255. Elementary Statistics (3) F, S Anderson, Fradkin, Halliwell, Harman, Hubbard, Walker
Prerequisite: Knowledge of mathematical procedures usually covered in elementary high school algebra. Statistical techniques in social research. Relations of appropriate techniques to research problems. Assumptions 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 most recent information on dating, courtship, engagement, mate selection, areas of adjustment in marriage, parenthood, financial and homemaking problems.

Upper Division

320. The Family (3) F, S Hartman, Leis, Ullman
Prerequisite: Sociology 100. 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 Fuss
Prerequisite: Sociology 100. Socio-cultural position of women; a brief history of women's role and status; societal attitudes toward women's place in society.

327. Social Organizzatn (XE(BF, S Richmond, Slawski, Turk
Prerequisite: Sociology 100. Introduction to classical and recent analysis of social organization; organizational structure of society at all levels of scale from the village to metropolis; roles of formal and informal organizations and relations between them and social processes within organizations.

335. Social Psychology (3) F, S Cereseto, Korber, Slawski, Turk
Prerequisite: Sociology 100. Extent to which personality is determined by social influences and processes by which people fit themselves into human groups. Not available to students with credit in Psychology 351.

336. Sociology of Small Groups (3) F, S Hartman, Lunceford, 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, Haskell
Prerequisite: Sociology 100. Extent and distribution; causative factors; influence of home, school and community, programs of prevention, control and treatment.

347. Social Disorganization (3) F Staff
Prerequisite: Sociology 100. Analysis of those forces, processes and relationships which tend to create disorganization in society and of their operation in selected life situations. Examination of relationships between personal and social disorganization. Description and analysis of the forces and process whereby reorganization is effected.

350. Population and Migration (3) F Harman
Prerequisites: Sociology 100 and one other course in sociology. Growth and distribution of population; theories of population growth; population analysis; historical survey of the world migration; American immigration and emigration.

355. Advanced Statistics (3) F Harman, Hubbard, Walker
Prerequisite: Sociology 255 or equivalent. Advanced statistical concepts in social research. Measurement theory; correlation methods; prediction models; reliability and validity; non-parametric tests; analysis of variance.

356. Development of Sociological Theory (3) F, S Fuss, Korber, 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 Conte, Spencer, Marx, Durkheim and Weber.

401. The Psychodramatic Method (3) F, S Haskell
Prerequisite: Psychology 100 or Sociology 100. Theoretical basis for the use of action methods in increasing the understanding of interpersonal and intergroup relationships. The psychodramatic method and techniques and their applications in interpersonal and intergroup relationships will be examined.

410. Human Ecology (3) S Harman
Prerequisite: Sociology 100. Relations of man to his social and physical environment. Spatial patterns of communities, distribution of population and institutions, processes of change in these phenomena.

419. Rural-Urban Trends (3) F, S Leis
Prerequisite: Sociology 100. Transition from rural to urban society in America; impact of the urban way on individuals and groups; persistence of rural values; social differences between communities in various stages of the process of urbanization.

420. Social Stratification (3) F, S Richmond
Prerequisite: Sociology 100. Role, status, and structure of differential rankings in societies, criteria for ranking, functions and dysfunctions, correlates of class position, and social change.

421. Sociology of Education (3) S Staff
Prerequisite: Sociology 100. Analysis of education as a social institution; application of major theoretical frameworks to an understanding of education in post-modern society; special attention given to education as it relates to socialization, stratification and social change.

422. Social Institutions (3) F, S Fuss, Parker, Turk
Prerequisites: Sociology 100 and one other course in sociology. Process of institutionalization, the general nature of institutions.

425. Industrial Sociology (3) On demand Hubbard
Prerequisite: Three units of sociology. Modern industrial society; industrial organization; group structure and behavior in factory, office, and store; worker and the machine; social classes and the industrial order; industrial conflict.

426. Sociology of Sexual Behavior (3) F, S Dank, Fradkin, Hartman
Prerequisite: Sociology 100. The social context of human sexuality; effects of socialization, social class, occupation and religion on sexual attitudes and behavior.

428. Sociology of Religion (3) F, S Slawski
Prerequisite: Sociology 100. Religion in a sociological perspective; its relation to social cohesion and social change, to other institutions and groups in society; sources and varieties of religious institutions with an emphasis on American religious groups.

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 Anderson, Massaro
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, Haskell
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. Penology (3) F, S Fradkin
Prerequisite: Sociology 441. Control and treatment of offenders, peno-correctional programs, particularly in the United States. Administrative problems and methods in penology. American penology viewed in the framework of criminology.

445. Ethnic Group Relations (3) F, S Haskell, Korber, Lunceford, Penalosa
Prerequisites: Sociology 100 and one other course in sociology. Patterns of ethnic group differentiation; world relationships between ethnic groups; accommodation and assimilation of minority groups in America.

449. Political Sociology (3) F Halliwell, Parker, Richmond
Prerequisite: Sociology 100. Analysis of the relation between social structure and political processes.

455. Methods of Sociological Research (3) F, S Staff
Prerequisites: Sociology 100, 255 and one upper division course in sociology. Introduction to the use of scientific methods in sociology, its 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 Fradkin, Fuss, Korber, 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, 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 Psychology 459.)

473. Family Life Education (3) S Hartman
Concepts of family development and interaction in the modern American family with emphasis on leadership opportunities for professional persons. Not open to students with credit in Home Economics 419.

480. Sociology of Knowledge (3) F Cereseto
Prerequisite: Senior or graduate standing. Investigation of the social determinants, distribution and consequences of various types of human knowledge; examines the social roots of both "everyday" knowledge and "theoretical" knowledge.

485. Sociology of Language (3) F, S Penalosa
Language determinants, concomitants and consequences of social behavior considered within a sociological framework. Topics will include language reflections of sociocultural organization, multilingualism, language loyalty and social aspects of language planning. Not open to students with credit in Sociology 400E.

490. Special Topics in Sociology (1-3) F, S Staff
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 Anderson
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-10 hours per week field experience.)

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

Graduate Division

620. Seminar in Family (3)

622. Seminar in Social Institutions (3)

625. Seminar in Social Classes (3)

629. Seminar in Social Change (3)

635. Seminar in Social Interaction (3)

636. Seminar in Symbolic Behavior (3)

647. Seminar in Deviant Behavior (3)

650. Seminar in Population (3)

651. Seminar in Development of Social Thought (3)

656. Seminar in Sociological Theory (3)

696. Research Methods (3)

697. Directed Research (1-3)

698. Thesis (2-6)

Spanish-Portuguese

Department Chairperson: Dr. Beverly J. DeLong-Tonelli.

Professors: Cárdenas, Donahue, Marín, Noguer.

Associate Professors: Contreras, DeLong-Tonelli, Inostroza, Trinidad.

Assistant Professors: Archuleta, Cannon, Schmitt.

Credential Advisers: Dr. Alfonso Archuleta, Dr. Harold L. Cannon, Mr. Joseph Contreras.

Academic Advising Coordinator: Dr. Beverly J. DeLong-Tonelli.

The Department of Spanish and Portuguese offers courses in language, literature and culture leading to the following degree and certificate programs: bachelor of arts degree in Spanish, master of arts degree in Spanish, single-subject teaching credential in Spanish and concentration in Spanish for the B.A. in liberal studies.

The department also offers courses which may be used to partially fulfill requirements for the bilingual cross-cultural specialist credential, master of arts degree in linguistics and Latin American studies certificate. The program is also designed to meet the needs of those who plan to enter business, community or government employment where knowledge of Spanish and/or Portuguese is essential. In addition, the program provides a liberal education for those who wish to expand their awareness of the communication process and of Hispanic literatures and culture.

Major in Spanish for the Bachelor of Arts Degree

Lower Division: One year of intermediate Spanish. Students who have completed sufficient high school Spanish may take upper division courses as soon as lower division requirements have been met.

Upper Division: A minimum of 30 units of upper division courses, which must include Spanish 312, 313, 335, 336, 337, 338, 425. Courses 440 and 445 are required for teacher certification and may be taken while completing work toward the baccalaureate degree. The department also strongly recommends 410.

Departmental Requirements: One year of a second foreign language is required of all majors.

Minor in Spanish

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 in Spanish

A program of study leading to the master of arts degree in Spanish is offered. For detailed information concerning requirements see the *Graduate Bulletin.*

Spanish

Lower Division

101A-B. Fundamentals of Spanish (4,4) F,S Staff
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 Staff
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

312. Advanced Spanish I (3) F, S Staff
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 Staff
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 (3) F, S Staff
Prerequisite: Upper division standing in Spanish. Functional course in conversation. Intended to meet specific, everyday situations and to provide help to those who intend to speak Spanish in travel, work or classroom instruction.

327. Cultural Aspects of Spanish and English (2) S Cárdenas, DeLong-Tonelli, Trinidad
Prerequisite: Spanish 201A or equivalent. Taught in English. Comparison of colloquial speech (idioms, refrains, proverbs, common comparisons) and formulaic expression (correspondence; telephone, classroom and interview behavior) in the two languages.

335. Introduction to Spanish Literature I (3) F, S Cárdenas, DeLong-Tonelli, Marín, Trinidad
Prerequisite: Upper division standing in Spanish. Origins and development of Spain's literature from the "Poem of Mio Cid" to 1700.

336. Introduction to Spanish Literature II (3) F, S Cannon, Cárdenas, DeLong-Tonelli, Marín, Noguer, Trinidad
Prerequisite: Upper division standing in Spanish. From 1700 to the present time.

337. Introduction to Spanish American Literature I (3) F, S Archuleta, Donahue, Inostroza
Prerequisite: Upper division standing in Spanish. Survey of the outstanding chronicles of the Conquest and the influence of Spanish culture in the formation of the New World. Covers the period of the colonization of Latin America and its struggle for independence.

338. Introduction to Spanish American Literature II (3) F, S Archuleta, Donahue, Inostroza, Noguer
Prerequisite: Upper division standing in Spanish. From the ending of the wars of independence to the present time.

410. Introduction to Literary Analysis (3) S Cárdenas, DeLong-Tonelli
Prerequisite: One 300 level course in Spanish or consent of instructor. Discovery of literature as a work of art. Different levels of interpretation; complexity of structure related to content; literary appreciation.

411. Advanced Spanish Composition (3) F Staff
Prerequisites: Spanish 312, 313. Intensive practice in composition using present-day Spanish.

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 equivalent. Study of the scientifically and empirically known points of conflict and differences between the two languages.

440. Spanish Civilization (3) S Marín, 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
Prerequisite: Upper division standing in Spanish or consent of instructor. Analysis of main currents in Latin American civilization.

450. Spanish American Novel I (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
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, Noguer, Trinidad
Prerequisite: Spanish 336 or consent of instructor. Ranking nineteeth century Spanish novelists.

457. Spanish American Short Story and Essay (3) S Donahue, Inostroza
Prerequisite: Spanish 338 or consent of instructor. Will be offered either in short story or essay. May be repeated once for credit provided genre is different from original enrollment period.

458. The Modern Spanish Essay (3) F Noguer, Trinidad
Prerequisite: Spanish 336 or consent of instructor. Reading and discussion of the essays of writers such as Azorín, Unamuno, Ortega y Gasset and Angel Ganivet.

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 Marín, Noguer
Prerequisite: Spanish 335 or consent of instructor. Spanish drama from Juan del Encina to Calderón de la Barca.

476. Spanish Romanticism (3) S DeLong-Tonelli, Noguer
Prerequisite: Spanish 336 or consent of instructor. Most representative Spanish writers of the Romantic period.

499. Independent Study (1-3) F, S Staff
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)

515. Romance Linguistics (3)

520. Modernismo in Spanish American Literature (3)

521. Contemporary Spanish American Poetry (3)

535. Spanish Medieval Literature (3)

538. Spanish Poetry of the Golden Age (3)

539. Spanish Renaissance Prose (3)

540. Spanish American Drama (3)

555. Mexican Novel (3)

585. Contemporary Spanish Poetry (3)

639. Seminar in Hispanic Studies (3)

696. Bibliographical Methods of Research (3)

697. Directed Research (1-3)

698. Thesis (2-4)

Portuguese

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.

201A-B. Intermediate Portuguese (4,4) F, S Archuleta, Schmitt
Continued development of audio-lingual skills.
201A. Prerequisite: Portuguese 101A-B or three years of high school Portuguese or equivalent.
201B. Prerequisite: Portuguese 201A or four years of high school Portuguese or equivalent.

312. Advanced Portuguese I (3) F, S Archuleta, Schmitt
Prerequisite: Portuguese 201B or equivalent. Extensive reading of Portuguese writings, review of grammatical principles and a general consolidation of the four language skills: reading, comprehension, composition and conversation.

313. Advanced Portuguese II (3) F, S Archuleta, Schmitt
Prerequisite: Portuguese 312 or equivalent. Sequel to Portuguese 312 with emphasis on extensive reading of Portuguese 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.

Speech Communication

Department Chairman: Dr. Owen O. Jenson.

Professors: Buck, Cain, Castleberry, Drum, Hauth, Hays, Howe, Jenson, Powell, Shanks, Skriletz, Wagner, Wills.

Associate Professors: Applbaum, Healy, Loganbill, Porter, Rogers.

Assistant Professors: Anatol, Briggs, Yousef.

Credential Adviser: Dr. Nancy Briggs.

Academic Advising Coordinator: Dr. Owen O. Jenson.

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 education courses as a part of the curriculum designed to give all students broad experiences in the liberal arts. Third, it provides a number of courses which service the needs of majors outside the Speech Communication Department. Fourth, it provides a single subject major for teaching credential candidates under the Ryan Bill.

To fulfill its first function, the department offers specialized curriculum to students who are planning to utilize a comprehensive background of speech theory and practice in business, professional fields, or education.

To fulfill its second function, courses are offered to satisfy both the category IV Basic Communication requirement in general education and the need for additional general education electives for cultural enrichment.

To fulfill its third function courses are offered which meet the needs of students whose major courses of study are enriched by specialized instruction in speech communication.

To fulfill its fourth function an option is presented for students wishing a single subject major for a teaching credential under the Ryan Bill. This option provides both a B.A. major in speech communication and an English (speech communication concentration) pattern for the single subject teaching credential.

Speech Proficiency Testing

Students who fulfill the Category IV Basic Communication of the general education requirements by enrolling in Speech Communication 130, 131, 132, 133, 271 or 300 level courses at CSULB will be tested for speech proficiency as part of the course. All others seeking a teaching credential must arrange for a test for speech proficiency through the Testing Office. Testing information is published in the *Schedule of Classes*.

Major in Speech Communication for the Bachelor of Arts Degree

General Speech Option

Lower Division: Speech Communication 130 and 246 or 271.

Upper Division: (a) Speech Communication 440, 448, (b) six units chosen from Speech Communication 331, 332, 333, 335, 337, 338, 344, (c) three units chosen from Speech Communication 361, 431, 432, 434, 451, (d) six units chosen from Communicative Disorders 371, Speech Communication 446, 447, 449, (e) six units chosen from Speech Communication 433, 439, 441, 442, 443, 444, 445, Communicative Disorders 478, (Students admitted to the elementary teacher training program may petition to substitute six units from Speech Communication 352, 358, 359, Theatre Arts 352.) (f) three units of upper division work in speech communication chosen in consultation with an adviser.

Rhetorical Studies Option

Lower Division: (a) three units chosen from Speech Communication 130, 131, 133, (b) three units chosen from Speech Communication 246, 271.

Upper Division: (a) Speech Communication 439, 440, (b) six units chosen from Speech Communication 330, 331, 333, 335, 336, 337, 338, 344, (c) 12 units chosen from Speech Communication 433, 441, 442, 443, 444, 445, (d) six units chosen from Speech Communication 448, 449, English 489, Philosophy 361, Political Science 411, History 477A,B, 489, 499.

Communication Theory Option

Lower Division: Speech Communication 130 or 132 and 246.

Upper Division: (a) Speech Communication 434, 440, 446, 447, 448, 449, (b) six units from Speech Communication 332, 335, 344, (c) three units from Speech Communication 432, 439, 445, 451, Radio-TV 406, (d) three-nine units from courses in the Psychology, Sociology or Management Departments (chosen in consultation with adviser).

Teaching Option

Lower Division: Speech Communication 246. Radio-TV 100 strongly recommended.

Upper Division: (a) Speech Communication 355, 450, (b) nine units from Speech Communication 331, 332, 333, 335, (c) three units from Speech Communication 439, 440, 445, (d) three units from Speech Communication 446, 448, 449, (e) English 310, (f) four units from English 320 or 325, (g) three units from English 482 or Comparative Literature 232, (h) 12 units from English 250A,B or English 370A,B.

Minor in Speech Communication

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 in Speech Communication

A program of study leading to the master of arts degree in speech communication is offered. For detailed information concerning requirements see the *Graduate Bulletin*.

Lower Division

130. Essentials of Public Speaking (3) F, S Staff
Composition and delivery of speeches to inform and persuade. Logical organization is stressed.

131. Essentials of Argumentation (3) F, S Staff
Theory and practice of argumentation. Includes evidence, proof, refutation in argumentative speaking and evaluative techniques.

132. Elements of Group Discussion (3) F, S Staff
Basic principles and techniques of discussion. Survey of the importance of discussion in contemporary society, including a study of and practice in informal group discussion, panel discussion, symposium and forum.

133. Elements of Oral Interpretation (3) F, S Staff
Theory and practice in the oral interpretation of prose and poetry.

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. Introduction to Oral 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 Healy, Loganbill
Physiological and anatomical bases of normal voice production with intensive training in articulation, pronunciation, projection and related oral skills.

Upper Division

330. Advanced Public Speaking (3) F, S Shanks
Prerequisite: Speech 130. Advanced forms of speech composition. Stress is placed on matters of selection of subject matter, arrangement of materials and factors of style. Intensive application of rhetorical principles.

331. Argumentation and Debate (3) F, S Howe, Rogers
Prerequisites: Speech 130, 131, 132 or 133. 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. Advanced Group Discussion (3) F, S Anatol, Applbaum, Rogers, Wills
Prerequisites: Speech 130, 131, 132 or 133. Relationship of discussion to the democratic process. Critical thinking and the role of leadership in the group process.

333. Advanced Oral Interpretation (3) F, S Buck, Loganbill, Shanks
Prerequisites: Speech 130, 131, 132 or 133. 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 professional forms and contexts; techniques of preparation, presentation and evaluation.

335. Persuasive Speaking (3) F, S Staff
Audience behavior; theories of motivation, attention, interest; an understanding and analysis of types of audiences with methods of audience adaptation.

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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. Parliamentary Procedure (3) F, S Castleberry, Shanks, Wagner
Application of the fundamentals of parliamentary procedure to the organization and functioning of groups. Not open to students with credit in Speech 237.

338. Ensemble Interpretive Reading (3) S 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 Hays, Jenson, Rogers, Yousef
Theory and techniques of oral communication in the process of interviewing. Practical application in employment, information gathering and persuasive interviews.

352. Story Telling (3) F, S Staff
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
Use of creative dramatics, improvisations, puppetry, choral speech, radio, television and group discussion for the purpose of developing 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. (Lecture-discussion 2 hours, laboratory 2 hours.)

431. Administering the Forensic Program (3) S Howe
Principles of constructing and administering a forensic program, including recruiting, squad direction, budgeting, tournament policies, tournament operation and current literature on forensic direction.

432. Discussion Leadership (3) F, S Anatol, Applbaum
Prerequisite: Speech 132 or consent of instructor. Theories and types of leadership on conference and small group discussion. (Lecture 3 hours, laboratory 1 hour.)

433. Oral Tradition in Interpretation (3) F Loganbill
Theoretical and historical development of oral interpretation from the ancient periods to the mid-twentieth century.

434. Communication in the Organizational Setting (3) F, S Anatol, Hays, Jenson, Yousef
Communication problems in the organizational settings. Selected topics in organizational difficulties with communication problems.

439. Rhetorical Criticism (3) F Hauth
Principles of critical analysis of the total public address situation. Evaluation of public speakers through application of these principles.

440. Survey of Rhetorical Theory (3) F, S Buck, Cain, Castleberry
Major rhetorical contributions from the Classical to the Modern Period.

441. Ancient Public Address (3) F Buck, Wills
Critical study of the speakers, speeches and speaking arenas from the preclassical and classical periods.

442. British Public Address (3) S Castleberry, Howe
Study of significant speakers with emphasis on ideas and contributions.

443. History and Criticism of American Public Address to 1900 (3) F Hauth, Wagner
Evaluation of public speaking as it pertains to issues involved in the development of American institutions to 1900.

444. History and Criticism of American Public Address Since 1900 (3) S Hauth, Wagner
Evaluation of public speaking as it pertains to issues involved in the development of American institutions since 1900.

445. Speakers and Contemporary Issues (3) F Powell, Wagner
Evaluation of speech making on the current scene. Primary emphasis on persuasive methods found in such movements as civil rights, youth dissent, confrontation politics, counter-protest and political campaigns.

446. Communication Theory (3) F, S Applbaum, Hays, Jenson, Porter, Yousef
Conceptual frameworks in communication theory; application of learning, motivation, perception and related theories to the study of speech. Not open to students with credit in Speech 446B.

447. Measurement in Communication Theory (3) F, S Applbaum, Jenson
Application of the scientific method to the study of speech; explanation of the role statistics, experimental and descriptive methodologies play in speech research. Not open to students with credit in Speech 446A.

448. Language and Symbolic Processes (3) F, S Anatol, Briggs, Hays, Jenson, Porter, Yousef
Prerequisites: Completion of general education speech requirement, Psychology 100. 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
Prerequisites: Completion of general education speech requirement, Psychology 100. 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.

451. Intercultural Communication (3) S Porter, Yousef
Prerequisite: Speech 246. 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.

454. Workshop in Speech Communication for the Public School (3) SS Applbaum, Hays, Jenson
This workshop is designed to provide public school teachers and those planning to become teachers with an understanding of the theories and concepts of oral communication applicable to the classroom. Purpose of the workshop is (1) to describe the communicational needs and problems of children from kindergarten through twelfth grade, (2) to establish communication goals for the elementary or secondary school, (3) to investigate the role of teacher in the communicative process, (4) to suggest remedies to communication problems in the classroom environment. Course can be used as a basis for the classroom methodology. Specific topics will be announced in the *Summer Session Schedule of Classes*.

499. Special Studies in Speech (1-3) F, S Staff
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

540. Modern Rhetorical Theory (3)

546. Issues in Communication Studies (3)

632. Seminar in Group Discussion (3)

633. Seminar in Oral Interpretation (3)

640. Seminar in Public Address (3)

646. Seminar in Communication Studies (3)

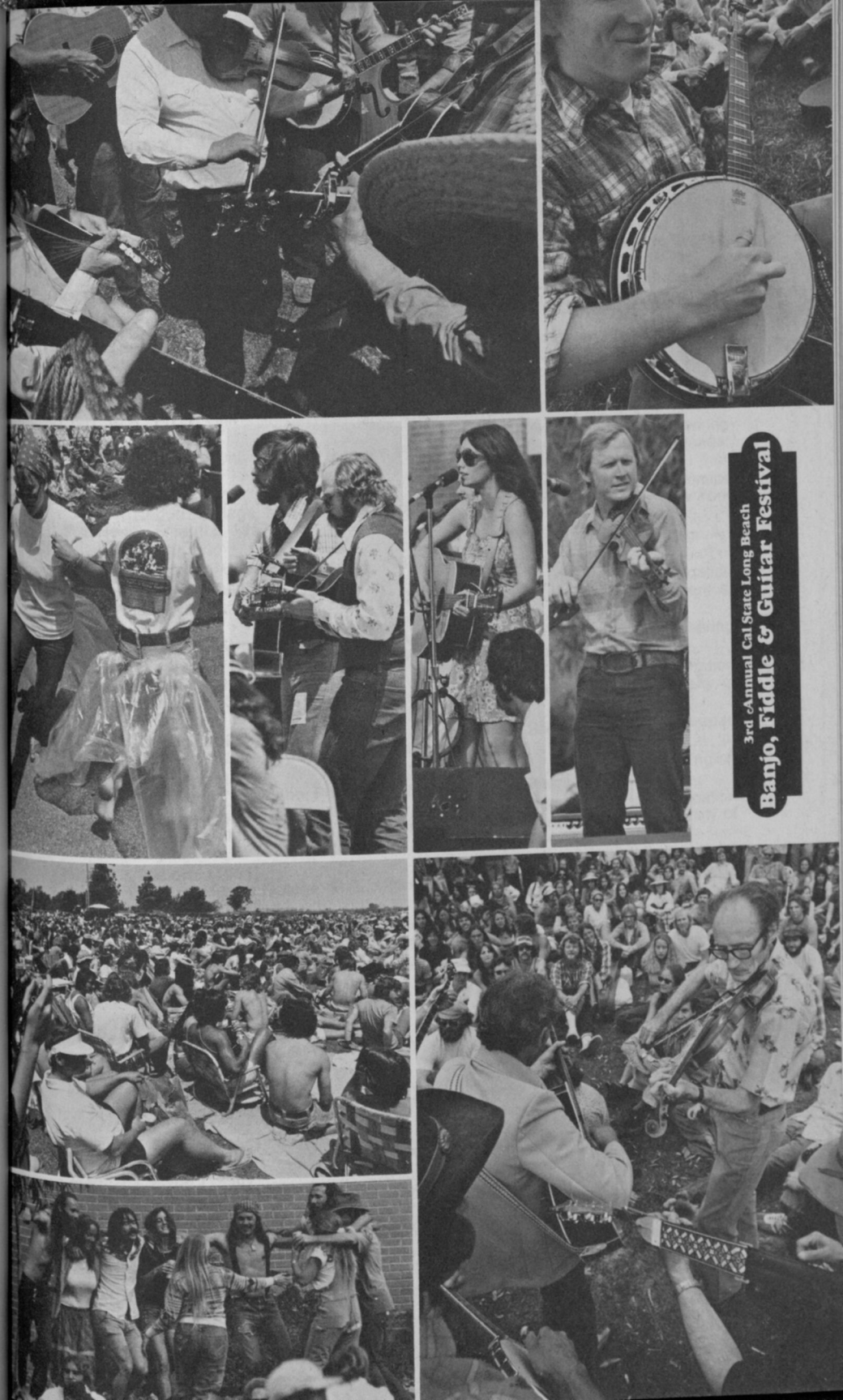
647. Seminar in Experimental Methodologies (3)

650. Seminar in Speech Education (3)

696. Research Methods (3)

697. Directed Research (1-3)

698. Thesis or Project (2-4)



Faculty

As of January 1, 1975

(Number in parentheses indicates year of appointment)

Emeriti

Ralph K. Allen (1956) ..... Professor, English
A.B., William Jewell College; M.A., Ph.D., University of Washington. Emeritus, 1970.

Roy C. Anderson (1950) ..... Professor, Secondary Education
A.B., Augustana College; M.A., University of Michigan; Ed.D., Stanford University. Emeritus, 1974.

Olaf P. Anfinson (1956) ..... Professor, Physical Science
B.Ed., Winona State Teachers College; M.A., Ed.D., Colorado State College of Education. Emeritus, 1974.

Kenneth W. Appelgate (1965) ..... Professor, History
B.S., M.A., Ph.D., University of Washington. Emeritus, 1972.

Cecil Armour (1968) ..... Professor, Civil Engineering
B.A.Sc., M.A.Sc., University of Toronto; P.E. in C.E., Province of Ontario, Canada, California. Emeritus, 1972.

Zelpha Bates (1953) ..... Professor, Home Economics
A.B., Washburn College; M.A., Teachers College, Columbia University; Ed.D., New York University. Emeritus, 1967.

Bela L. Biro (1959) ..... Professor, Art
Ph.D., University of Budapest. Emeritus, 1968.

J. Wesley Bratton (1950) ..... Professor, Education
A.B., Seattle Pacific College; M.S., Ed.D., University of Southern California. Emeritus, 1969.

Ernest G. Brind (1965) ..... Associate Professor, Mechanical Engineering
B.E., M.S., Ed.D., University of Southern California. Emeritus, 1971.

David L. Bryant (1949) ..... Executive Dean, Administration
B.S., University of Southern California; M.A., Stanford University; Ed.D., University of Southern California. Emeritus, 1969.

Maude C. Carlson (1952) ..... Head Social Science Reference Librarian
A.M., M.A. in L.S., University of Michigan. Emeritus, 1967.

George R. Cerveny (1952) ..... Professor, English
B.S., M.A., University of Idaho; Ph.D., New York University. Emeritus, 1967.

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
B.S., Randolph-Macon College; M.A., University of North Carolina; Ph.D., University of Oregon. Emeritus, 1972.

Marjorie B. Dole (1959) ..... Counselor
A.B., M.A., California State University, Long Beach; Ed.D., University of Southern California. Emeritus, 1973.

Robert P. Durbin (1950) ..... Professor, Biology
A.B., San Diego State University; M.S., Ed.D., University of Southern California. Emeritus, 1972.

Dorothy L. Ericson (1953) ..... Professor, Women's Physical Education
B.S., University of Wisconsin; M.A., Ed.D., Teachers College, Columbia University. Emeritus, 1974.

Ethel E. Ewing (1952) ..... Professor, Anthropology
A.B., Muskingum College; M.A., Radcliffe College; Ph.D., Cornell University. Emeritus, 1971.

William E. Fisher (1955) ..... Professor, Secondary Education
A.B., Baker University; Ph.D., University of Kansas. Emeritus, 1973.

Francis J. Flynn (1950) ..... Executive Dean—Development
A.B., M.S., Ed.D., University of Southern California. Emeritus, 1971.

Robert B. Goldman (1961) ..... Associate Professor, Electrical Engineering
B.S., U.S. Naval Academy; B.S., University of California. Emeritus, 1971.

Frank F. Gorow (1953) ..... Professor, Secondary Education
B.S., University of Washington; Ed.D., University of California, Los Angeles. Emeritus, 1974.

Ross Hardy (1949) ..... Professor, Zoology
B.S., M.S., University of Utah; Ph.D., University of Michigan. Emeritus, 1973.

Marion R. Johnston (1955) ..... Professor, Elementary Education
A.B., Northwestern University; M.A., Stanford University; Ed.D., University of California, Los Angeles. Emeritus, 1973.

Oliver P. Johnstone (1951) ..... Professor, Elementary Education
B.S., Miami University, Ohio; M.A., Stanford University; Ed.D., University of Southern California. Emeritus, 1972.

Earl C. Kidd (1952) ..... Professor, Men's Physical Education
B.S., Oregon College of Education; M.S., University of Oregon. Emeritus, 1973.

Kephas A. Kinsman (1949) ..... Professor, Secondary Education
A.B., University of California, Los Angeles; M.A., Ed.D., University of Southern California. Emeritus, 1972.

I. Aileen Poole Koehler (1959) ..... Professor, Educational Psychology
A.B., University of Michigan; M.A., Ohio University; Ph.D., University of California. Emeritus, 1974.

Stephen Kulik (1959) ..... Professor, Mathematics
Doktor Mathematichnikh Nauk, Institute of Mathematics; University of Kiev. Emeritus, 1972.

Rodney C. Lewis, P.E. (1958) ..... Professor, Electrical Engineering; Associate Dean, School of Engineering
B.S., University of Southern California; M.S., Iowa State University. Emeritus, 1973.

Walter J. Lyche (1957) ..... Associate Professor, Mathematics
A.B., St. Olaf College; M.A., University of Minnesota. Emeritus, 1974.

William D. McIlvaine, P.E. (1964) ..... Professor, Civil Engineering
B.S., M.S.E., University of Minnesota. Emeritus, 1974.

Daniel C. McNaughton (1958) ..... Professor, Secondary Education
B.S., Colorado A & M College; M.A., University of Chicago; Ed.D., Stanford University. Emeritus, 1974.

R. Monteen Manning (1959) ..... Head Education-Curriculum Librarian
A.B., Lander College; A.B. in L.S., Emory University. Emeritus, 1973.

Kenneth E. Maxwell (1963) ..... Professor, Biology
B.S., University of California; Ph.D., Cornell University. Emeritus, 1973.

Halvor G. Melom (1950) ..... Professor, History
A.B., California State University, Fresno; M.A., University of California; Ph.D., University of Missouri. Emeritus, 1974.

Harold T. Miller, P.E. (1958) ..... Associate Professor, Engineering
B.S., U.S. Military Academy; M.S., Pennsylvania State University; M.A., University of Chicago. Emeritus, 1971.

Jack E. Montgomery (1951) ..... Professor, Men's Physical Education
B.Ed., M.S., Ed.D., University of California, Los Angeles. Emeritus, 1973.

Wallace H. Moore (1950) ..... Professor, Education
A.B., Davidson College; M.A., Harvard University; M.Ed., Ph.D., Stanford University. Emeritus, 1969.

Herluf P. Nielsen, P.E. (1958) ..... Professor, Mechanical Engineering
B.S., University of Nebraska; M.M.E., Rensselaer Polytechnic Institute; Ph.D., University of Minnesota. Emeritus, 1971.

Peter F. Palmer (1953) ..... Professor, Economics
A.B., University of British Columbia; M.A., Ph.D., Stanford University. Emeritus, 1972.

P. Victor Peterson (1949) ..... President
A.B., Iowa State Teachers College; M.A., Ph.D., Stanford University. Emeritus, 1959.

Leo T. Phearman (1950) ..... Professor, Elementary Education
A.B., Cornell College, Iowa; M.A., Ph.D., State University of Iowa. Emeritus, 1972.

Aileen W. Propes (1953) ..... Head Catalog Librarian
A.B., B.L.S., University of California; M.A., California State University, Long Beach. Emeritus, 1969.

C. Patricia Reid (1951) ..... Professor, Women's Physical Education
B.Ed., M.S., Ed.D., University of California, Los Angeles. Emeritus, 1974.

Harry G. Romig (1966) ..... Professor, Operations Research and Statistics
A.B., Pacific University, Forest Grove, Oregon; M.A., University of California; Ph.D., Columbia University. Emeritus, 1972.

Aillee Wilford Rose (1951) ..... Professor, English
A.B., Hendrix College; M.A., George Peabody College for Teachers. Emeritus, 1974.

Stanley C. Rose (1956) ..... Associate Professor, English
A.B., Queens University; M.A., University of Miami.

Henry R. Sehmann (1951) ..... Professor, Educational Administration
B.Ed., Illinois State Normal University; M.A., Ph.D., University of Chicago. Emeritus, 1973.

Doris S. Specht (1958) ..... Head, Humanities Librarian
A.B., University of Minnesota; M.S. in L.S., University of Southern California. Emeritus, 1973.

Russel N. Squire (1956) ..... Professor, Music
A.B., Oberlin College; M.A., Western Reserve University; Ph.D., New York University. Emeritus, 1971.

Robert A. Steffes (1959) ..... Professor, Journalism
B.S., South Dakota State College; M.S., Syracuse University. Emeritus, 1972.

George D. Stephens (1951) ..... Professor, English
A.B., Trinity University; M.A., University of Texas; Ph.D., University of Southern California. Emeritus, 1974.

Glenn H. Stewart (1958) ..... Professor, Management and Operations Management
B.S., State University of Iowa; Ph.D., University of Southern California. Emeritus, 1972.

Gerald Strang (1965) ..... Professor, Music
A.B., Stanford University; Ph.D., University of Southern California. Emeritus, 1974.

Lois J. Swanson (1951) ..... Associate Dean-Student Affairs
A.B., Morningside College; M.A., Ph.D., State University of Iowa. Emeritus, 1969.

Henri Temianka (1964) ..... Professor, Music
Diploma, Curtis Institute of Music, Philadelphia. Emeritus, 1974.

Olive L. Thompson (1951) ..... Professor, Elementary Education
A.B., Iowa State University; M.A., State University of Iowa; Ed.D., University of Southern California. Emeritus, 1972.

Willard H. Van Dyke (1953) ..... Professor, Educational Administration
B.S., Oregon State College; M.A., Ed.D., University of California. Emeritus, 1964.

Robert E. Vivian (1958) ..... Professor, Engineering; Chairman, Division of Engineering
A.B., M.A., University of Southern California; Ph.D., Columbia University; D.Sci., University of Southern California. Dean of Engineering. Emeritus, 1964.

William J. Wallace (1963) ..... Professor, Anthropology
A.B., Ph.D., University of California. Emeritus, 1970.

Dorothy L. Walsh (1956) ..... Professor, Nursing
B.S., M.A., Teachers College, Columbia University. Emeritus, 1970.

Harold W. Washburn (1965) ..... Professor, Electrical Engineering
B.S., University of California; M.S., Massachusetts Institute of Technology; Ph.D., University of California. Emeritus, 1972.

Harry S. Wilder (1953) ..... Professor, English
B.S., M.A., Ph.D., Ohio State University. Emeritus, 1968.

Edward A. Wright (1966) ..... Professor, Theatre Arts
A.B., M.A., University of Iowa. Emeritus, 1973.

Full-Time Faculty

Aall, Ingrid (1969) ..... Associate Professor, Art
A.B., University of Oslo, Norway; B. Litt., St. Anne's College, Oxford; Ph.D., University of Chicago.

Aarons, Herbert L. (1965) ..... Associate Professor, Sociology
A.B., M.A., Pennsylvania State University.

Abbott, William P. (1968) ..... Test Officer
A.B., Seattle Pacific College; M.S.Ed., Ed.D., University of Southern California.

Abou-el-Haj, Rifaat Ali (1964) ..... Professor, History
A.B., Washington and Lee University; M.A., Ph.D., Princeton University.

Abrahamse, Dorothy Z. (1967) ..... Associate Professor, History
A.B., Mount Holyoke College; M.A., Ph.D., University of Michigan.

Adams, Gary B. (1972) ..... Assistant Professor, Criminal Justice
B.A., College of Idaho; M.A., D.P.A., University of Southern California.

Afflack, Ruth H. (1966) ..... Associate Professor, Mathematics
A.B., M.A., University of California, Santa Barbara.

Ahlquist, Irving F. (1949) ..... Professor, History
B.S., Wheaton College; M.A., Ph.D., University of Illinois.

Albert, Eugene (1967) ..... Associate Professor, Mathematics
A.B., M.A., Brooklyn College; Ph.D., University of Virginia.

Al-Chalabi, Kamal T., P.E. (1966) ..... Professor, Civil Engineering
B.S. in C.E., Baghdad University, Iraq; M.S., Ph.D., University of Michigan.

Alender, Charles B. (1966) ..... Associate Professor, Biology
A.B., M.A., DePauw University; Ph.D., University of Hawaii.

Alexander, Robert L., P.E., Arch't. (1964) ..... Professor, Civil Engineering
B.Arch., Rensselaer Polytechnic Institute; M.S., Harvard University; D. Engr., University of California.

Alexandrov, Igor (1967) ..... Assistant Professor, Physics
A.B., M.A., Ph.D., University of California, Los Angeles.

Alfieri, Frank J. (1967) ..... Associate Professor, Biology
B.S., M.Ed., University of California, Davis; Ph.D., University of Wisconsin.

Ali, M. Shafqat (1967) ..... Associate Professor, Mathematics
B.S., Agra University, India; M.S., Muslim University, India; M.A., Ph.D., University of California, Santa Barbara.

Allen, Charles A. (1957) ..... Professor, English
A.B., DePauw University; Ph.D., University of Iowa.

Allen, Edward L. (1974) ..... Lecturer, Health Science
B.A., California State University, Long Beach; M.S.P.H., University of California, Los Angeles.

Allice, Ronald J. (1973) ..... Coach, Intercollegiate Athletics
B.A., M.A., California State University, Long Beach.

Almeida, Thomas C. (1974) ..... Lecturer, Vocational Education
B.A., M.A., California State University, Long Beach.

Ames, John H. (1969) ..... Associate Professor, Elementary Education
A.B., Iowa State Teachers College; M.A., Colorado State University; Ed.D., University of California, Los Angeles.

Ames, Kenneth J. (1968) ..... Associate Professor, English
A.B., University of London; A.L.A. (London); M.A., Ph.D., University of Southern California.

Anand, Rajendra S. (1970) ..... Associate Professor, Biology
B.Sc., Meerut College, India; B.V. Sc. & A.H. (D.V.M.), M.P. Veterinary College & Research Institute, India; Ph.D., University of California, Davis.

Anatol, Karl (1969) ..... Assistant Professor, Speech Communication
A.B., Andreiss University, Michigan; M.A., Purdue University; Ph.D., University of Southern California.

Anderson, Burton L. (1958) ..... Professor, Geography
B.S., Southern Methodist University; M.A., University of Minnesota; Ph.D., University of Washington.

Anderson, Peggy J. (1968) ..... Associate Professor, Sociology
A.B., Washington State University; Ph.D., University of California, Irvine.

Anderson, Robert E. (1964) ..... Professor, Music
A.B., Oberlin College of Arts and Sciences; B.M.E., Oberlin Conservatory of Music; M.A., Ph.D., Ohio State University.

Anderson, Roy C. (1965) ..... Associate Professor, Economics
B.S., Lehigh University; M.A., Ph.D., Tulane University.

Andre, Shane (1967) ..... Associate Professor, Philosophy
B.S., Johns Hopkins University; M.A., Ph.D., Claremont Graduate School.

Andrews, Edna M. (1967) ..... Associate Professor, Accounting
B.S., M.B.A., California State University, Long Beach; C.P.A. certificate, California, Kentucky.

Andrus, Donald G. (1968) ..... Associate Professor, Music
A.B., Western Washington State College; M.A., University of Washington; D.M.A., University of Illinois.

Anselmo, Carl R. (1964) ..... Associate Professor, Microbiology
A.B., M.S., Ph.D., University of Utah.

Anwar, Mohammad Z. (1965) ..... Associate Professor, Physics
B.S., M.S., Dacca University Pakistan; Ph.D., University of British Columbia.

Applbaum, Ronald L. (1969) ..... Associate Professor, Speech Communication
A.B., M.A., California State University, Long Beach; Ph.D., Pennsylvania State University.

Appleton, George L. (1953) ..... Professor, Physics
B.S., Carnegie Institute of Technology; Ph.D., University of Southern California.

Archer, Blair C. (1950) ..... Professor, Art
B.S., Moorhead State Teachers College; M.Ed., Ph.D., University of Minnesota.

Archuleta, Alfonso L. (1965) ..... Assistant Professor, Spanish-Portuguese
A.B., University of California, Los Angeles; M.A., California State University, Los Angeles; Ph.D., University of Southern California.

Arguijo, Edward (1972) ..... Lecturer, Communicative Disorders
B.A., M.A., California State University, Los Angeles.

Arnett, James D., P.E. (1968) ..... Professor, Electrical Engineering
B.S.E.E., M.S.E.E., Ph.D., University of Southern California.

Arnheim, Daniel D. (1959) ..... Professor, Men's Physical Education
A.B., George Pepperdine College; M.A., California State University, Los Angeles; P.E.D., Springfield College.

Ash, William D. (1957) ..... Professor, Marketing
A.B., Idaho State College; M.B.A., Stanford University; D.B.A., University of Southern California.

Asher, Eugene L. (1959) ..... Professor, History
A.B., M.A., Ph.D., University of California, Los Angeles.

Askin, Walter M. (1974) ..... Visiting Professor, Art
B.A., M.A., University of California, Berkeley.

Aspiz, Harold (1958) ..... Professor, English
A.B., M.A., Ph.D., University of California, Los Angeles.

Atherton, Wallace N. (1966) ..... Professor, Economics
A.B., Ph.D., University of California.

Austin, Charles W. (1966) ..... Professor, Mathematics
B.S., M.S., Ph.D., University of Washington.

Avni, Abraham A. (1964) ..... Professor, English
M.A., Hebrew University, Jerusalem; Ph.D., University of Wisconsin.

Avvocato, Rudolph I. (1970) ..... Medical Officer
M.D., St. Louis University.

Axelrad, Arthur M. (1964) ..... Professor, English
A.B., Brooklyn College; M.A., Ph.D., New York University.

Ayers, R. Dean (1967) ..... Associate Professor, Physics
B.S., M.S., Ph.D., California Institute of Technology.

Babbush, H. Edward (1958) ..... Director, Office of Career Planning and Placement
B.S., Michigan State University; M.A., California State University, Long Beach.

Bachar, John M., Jr. (1969) ..... Associate Professor, Mathematics
B.S., M.S., Northwestern University; Ph.D., University of California, Los Angeles.

Baget, J. Julien (1974) ..... Associate Professor, Public Policy and Administration
B.A., M.P.A., University of Washington.

Bailor, Jerry (1968) ..... Associate Professor, Theatre Arts
A.B., M.A., University of Washington; Ph.D., University of Southern California.

Baine, Peter (1968) ..... Associate Professor, Chemistry
GRIC, Salford University, England; M.S., California Institute of Technology; Ph.D., University of California, Santa Barbara.

Baird, John J. (1956) ..... Professor, Biology
A.B., Iowa State Teachers College; M.S., Ph.D., State University of Iowa.

Baker, Clarence P. (1952) ..... Professor, English
B.S., Haverford College; M.A., Harvard University; Ph.D., University of California, Los Angeles.

Baker, Dan F. (1961) ..... Professor, Radio-TV Coordinator, TV
A.B., M.A., Indiana University.

Baker, Dorothy W. (1961) ..... Assistant Professor, Home Economics
B.S., University of Maryland.

Baker, Philip C. (1969) ..... Associate Professor, Biology
A.B., Earlham College, Indiana; Ph.D., University of North Carolina.

Bakker, Theodore P., P.E. (1968) ..... Associate Professor, Civil Engineering
B.S.C.E., M.S.C.E., University of Southern California.

Bane, Richard W. (1970) ..... Assistant Professor, History
A.B., M.A., Ph.D., University of Southern California.

Bartenbach, Irmgard F. (1964) ..... Associate Professor, German, Russian and Classics
M.A., Ph.D., University of Southern California.

Bartlett, Kenneth T. (1959) ..... Professor, Men's Physical Education
B.S., University of Minnesota; M.A., California State University, Los Angeles.

Bates, Donald L. (1974) ..... Lecturer, Management
B.S., M.B.A., Indiana State University; Ph.D., University of Arkansas.

Bates, Eleanor H. (1970) ..... Associate Professor, Anthropology
A.B., California State University, Long Beach; M.A., University of Southern California; Ph.D., University of California, Los Angeles.

Battaglia, Natale A. (1974) ..... Assistant Professor, Religious Studies
B.A., M.A., La Salle College; Ph.D., Princeton University.

Bauer, Roger D. (1959) ..... Professor, Chemistry
B.S., Beloit College; M.S., Ph.D., Kansas State University.

Baugh, James R. (1964) ..... Associate Professor, Mathematics
A.B., M.A., University of California, Los Angeles.

Beattie, Randall C. (1972) ..... Assistant Professor, Communicative Disorders
B.S., Northern Illinois University; M.S., University of Illinois; Ph.D., University of Southern California.

Beaumont, Marion S. (1967) ..... Associate Professor, Economics
B.S., Ohio State University; M.A., Duke University; Ph.D., Claremont Graduate School.

Beck, Louis L. (1970) ..... Assistant Professor, Elementary Education
B.A., M.A., University of Redlands; Ph.D., U.S. International University.

Becker, Charles E. (1956) ..... Professor, Music
B.Mus., M.A., Ph.D., State University of Iowa.

Becker, Edwin N. (1955) ..... Professor, Chemistry
B.S., Iowa State University; Ph.D., University of Wisconsin.

Becker, Harold K. (1963) ..... Professor, Criminal Justice
A.B., M.S., University of Southern California; D. Crim., University of California.

Beckwith, Howard B. (1969) ..... Associate Professor, Mathematics
A.B., University of California; Ph.D., University of California, San Diego.

Beecher, Earl S. (1961) ..... Professor, Finance
A.B., University of Utah; M.B.A., Ph.D., University of California, Los Angeles.

Beegle, Donald A. (1963) ..... Professor, Health Science
B.S., M.S., University of Oregon; M.P.H., University of California.

Beekman, Bruce E. (1958) ..... Professor, Biology
A.B., San Diego State University; M.A., Ph.D., Indiana University.

Bell, A. Robert (1969) ..... Associate Professor, English
A.B., M.A., University of Miami; Ph.D., University of Maryland.

Belt, Virginia M. (1963) ..... Professor, Finance
B.S., Southern Illinois University; M.S., Ph.D., University of Illinois.

Benassi, Victor A. (1974) ..... Lecturer, Psychology
B.S., California State College, Pennsylvania; M.A., Queens College.

Bergland, Clarence R. (1951) ..... Associate Dean—Admissions and Records
B.S., M.A., University of Southern California.

Berk, Stephen E. (1970) ..... Assistant Professor, History
B.A., Lehigh University; M.A., University of Massachusetts; Ph.D., University of Iowa.

Berkshire, Stewart (1974) ..... Lecturer, Accounting
B.S., United States Naval Academy; M.B.A., San Jose State University.

Bernstein, David A. (1967) ..... Associate Professor, History
A.B., Muhlenberg College, Allentown, Pennsylvania; M.A., Ph.D., Rutgers University.

Bernstein, Norma T. (1968) ..... Associate Professor, Elementary Education
A.B., Brooklyn College; M.S., Queens College; Ph.D., New York University.

Berry, Arnold J. (1973) ..... Assistant Professor, Chemistry
B.S., Pennsylvania State University; M.S., Michigan State University; Ph.D., Ohio State University.

Berry, John E. (1969) ..... Assistant Professor, Manpower Management
A.B., Michigan State University; M.B.A., California State University, Long Beach.

Betar, George V. (1963) ..... Professor, English
A.B., State University of New York, College at Albany; M.A., Ph.D., University of Southern California.

Biedebach, Mark C. (1967) ..... Associate Professor, Biology
B.E., M.S., University of Southern California; Ph.D., University of California, Los Angeles.

Bigelow, Thomas W. (1971) ..... Assistant Professor, Men's Physical Education
B.S., Wisconsin State University; M.Ed., Ed.D., University of Georgia.

Binder, Virginia L. (1967) ..... Associate Professor, Psychology
A.B., William Jewell College, Liberty, Missouri; Ph.D., Indiana University.

Black, Albert G. (1962) ..... Associate Professor, English
A.B., M.A., University of Michigan.

Black, Paul V. (1969) ..... Associate Professor, History
B.S., M.S., University of Southern Mississippi; Ph.D., University of Wisconsin.

Black, Stuart E. (1962) ..... Associate Professor, Mathematics
B.S., Harvey Mudd College, Claremont; M.A., University of California, Los Angeles.

Blackburn, Fay I. (1959) ..... Assistant Social Sciences Librarian
A.B., Mount St. Mary's College, Los Angeles; M.S. in L.S., University of Southern California.

Blackman, Betty J. (1967) ..... Assistant University Librarian, Technical Services
B.S.Ed., Ohio State University; M.L.S., Western Michigan University.

Blackman, Evelyn L. (1961) ..... Professor, Educational Psychology
A.B., University of Washington; M.P.H., Ed.D., University of California.

Blanche, Carl R. (1969) ..... Medical Officer
B.C.E., Cornell University; M.D., Hahnemann Medical College.

Blaylock, Enid V. (1966) ..... Associate Professor, Educational Psychology
B.S., Loma Linda University; M.S., University of California, Los Angeles; Ph.D., University of Southern California.

Bliss, James H. (1964) ..... Professor, Journalism
A.B., University of California, Los Angeles; M.A., University of Missouri.

Bok, Frank J. (1956) ..... Professor, Physical Therapy
B.S., M.A., Ph.D., Certificate in Physical Therapy, State University of Iowa; Registered Physical Therapist, California.

Bonazza, Blaze O. (1966) ..... Professor, English
A.B., Cornell University; M.A., California State University, Los Angeles; Ph.D., University of Southern California.

Bonis, William D. (1963) ..... Professor, Philosophy
B.D., Theological Academy, Sarospatak, Hungary; M.Th., Presbyterian Theological Seminary, Pittsburgh; Ph.D., University of Texas.

Boorkman, Charles J. (1949) ..... Director of the University Library
A.B., B.S. in L.S., University of Illinois; M.A., University of Southern California.

Borders, David C. (1962) ..... Associate Professor, Art
B.F.A., Ohio State University; M.F.A., University of Washington.

Boring, Warren J. (1956) ..... Professor, Men's Physical Education
B.S., Kansas State College; M.S., University of Colorado; H.S.D., Indiana University.

Borowiec, Edward J. (1969) ..... Associate Professor, English
Ph.B., University of Detroit; M.A., Ph.D., University of Southern California.

Bourret, James A. (1968) ..... Associate Professor, Biology
B.S., M.S., University of Wyoming; Ph.D., University of California.

Boutelle, Donna L. (1967) ..... Associate Professor, History
A.B., M.A., Ph.D., University of California.

Bowman, Dean O. (1973) ..... Dean, School of Business Administration
B.S., M.S., Purdue University; Ph.D., University of Michigan.

Bowman, Frank (1959) ..... Director, Student Housing
B.S., Morris Harvey College; M.A., California State University, Long Beach.

Bradley, Jack I. (1952) ..... Professor, Psychology
A.B., California State University, Los Angeles; M.A., Occidental College; Ph.D., Claremont Graduate School.

Brandon, William E. (1974) ..... Lecturer, Anthropology

Brandstatt, Gerald J. (1966) ..... Associate Professor, Industrial Education
A.B., M.A., California State University, Chico.

Brasher, Robert E. (1956) ..... Serials Catalog Librarian
A.B., Oklahoma City University; M.A. in L.S., University of Denver.

Bravar, A. James (1973) ..... Dean, School of Fine Arts
B.F.A., Carnegie Institute of Technology; M.F.A., Yale University.

Brekke, Alice M. (1970) ..... Assistant Professor, English
B.S., Maryville State College; M.S., North Dakota State University; Ph.D., University of Minnesota.

Brent, Paul L. (1959) ..... Professor, Instructional Media
B.S., Central State College; M.Ed., Ed.D., University of Oklahoma.

Brice, Robert C. (1968) ..... Associate Professor, Industrial Technology
A.B., M.A., California State University, Long Beach.

Briggs, Nancy E. (1970) ..... Assistant Professor, Speech Communication
A.B., Augustana College, South Dakota; M.A., Ph.D., University of Southern California.

Brisker, Estelle R. (1967) ..... Associate Professor, Art
A.B., Hunter College; M.A., University of California, Los Angeles.

Britton, Alexander L. (1965) ..... Associate Professor, Educational Psychology
A.B., University of California, Los Angeles; M.A., California State University, Long Beach; Ed.D., University of Southern California.

Brodetsky, Anna M. (1966) ..... Associate Professor, Microbiology
A.B., Ph.D., University of California, Los Angeles.

Brooks, Charles B. (1957) ..... Professor, English
A.B., M.A., Ph.D., University of California.

Brophy, Robert J. (1968) ..... Associate Professor, English
A.B., Gonzaga University; M.A., Loyola University; Ph.D., University of North Carolina.

Brosbe, Edwin A. (1973) ..... Lecturer, Microbiology
B.S., Philadelphia College; M.S., Ph.D., University of Colorado.

Bryan, Harry D. (1973) ..... Lecturer, Industrial Technology
B.S., Carnegie Institute of Technology; M.B.A., California State University, Long Beach.

Bryan, Ruth M. (1962) ..... Assistant Fine Arts Librarian
B.A., M.A., University of California, Los Angeles; M.S. in L.S., University of Southern California.

Bubala, Anna Belle (1968) ..... Assistant Professor, Management
B.S., M.B.A., California State University, Long Beach.

Buchanan, John G. (1968) ..... Associate Professor, History
A.B., M.A., Roosevelt University; Ph.D., Duke University.

Buchanan, Steven (1974) ..... Lecturer, Black Studies
B.A., California State University, Los Angeles.

Buchner, Reinhard K. (1963) ..... Professor, Physics
Vordiplom, Gutenberg University, Mainz, Germany; Diplom, Doctor, Ing., Technical Hochschule, Aachen, Germany.

Buck, Steven M. (1961) ..... Professor, Speech Communication
A.B., M.A., Washington State University; Ph.D., Purdue University.

Buckner, William E. (1970) ..... Associate Professor, Home Economics
B.S., J.D., University of California, Los Angeles.

Buggs, Charles W. (1973) ..... Lecturer, Microbiology
B.A., Morehouse College; M.S., Ph.D., University of Minnesota.

Burhans, Linda K. (1973) ..... Lecturer, Health Science
B.A., California State University, Long Beach; M.S.P.H., Dr.P.H., University of California, Los Angeles.

Burk, R. Burdett (1954) ..... Professor, Elementary Education
B.S., Ball State Teachers College; M.S., Ed.D., Indiana University.

Burke, Albie D. (1967) ..... Associate Professor, History
B.M., American Conservatory of Music; A.B., M.A., Ph.D., University of Chicago.

Burras, Darrell V. (1957) ..... Professor, Quantitative Systems
B.S., Central Michigan College; M.S., Ph.D., University of Michigan.

Bush, Roland E. (1969) ..... Assistant Professor, Comparative Literature
A.B., California State University, Long Beach; M.A., University of Southern California.

Butcher, Benjamin C. (1969) ..... Professor, Marketing
A.B., M.A., University of Denver; Ph.D., University of Illinois.

Butler, Dennis G. (1966) ..... Associate Director of Academic Planning
B.S., M.B.A., California State University, Long Beach.

Cahn, Norman R. (1967) ..... Associate Professor, Elementary Education
B.S., University of California, Los Angeles; M.A., California State University, Long Beach; Ed.D., University of Southern California.

Cain, Earl R. (1959) ..... Professor, Speech Communication
A.B., University of South Dakota; M.A., Ph.D., Northwestern University.

Cain, Guy H., Jr. (1960) ..... Associate Professor, Electrical Engineering
B.S. in E.E., University of Wisconsin; M.Eng., University of California, Los Angeles.

Callison, George L. (1969) ..... Associate Professor, Biology
B.S., Kansas State University; M.A., Ph.D., University of Kansas.

Caloca, David A. (1973) ..... Assistant Professor, Psychology
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Camburn, Herbert L. (1960) ..... Professor, Theatre Arts
A.B., M.A., Michigan State University.

Campbell, Charles E. (1966) ..... Associate Professor, Health Science
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Campbell, Daniel A. (1962) ..... Associate Professor, Men's Physical Education
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Campbell, F. Carlene (1972) ..... Assistant Professor, Nursing
B.S., California State University, Los Angeles; M.S., University of California, Los Angeles.

Campbell, Janet (1965) ..... Humanities Catalog Librarian
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Cannon, Harold L. (1968) ..... Assistant Professor, Spanish-Portuguese
A.B., B.S., M.A., Ph.D., University of Minnesota.

Cano, Anita C. (1972) ..... Lecturer, Mexican American Studies
B.A., Occidental College.

Cantey, Richard E. (1972) ..... Assistant Test Officer
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Cardenas, Daniel N. (1970) ..... Professor, Spanish-Portuguese
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Carissimo, Joel W. (1969) ..... Associate Professor, Electrical Engineering
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Carlberg, David (1966) ..... Associate Professor, Microbiology
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Carlson, Earl R. (1961) ..... Professor, Psychology
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Cash, Robert W. (1970) ..... Associate Professor, Educational Psychology
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Castleberry, Ottis L. (1956) ..... Professor, Speech Communication
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Cereseto, Shirley (1967) ..... Associate Professor, Sociology
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Cerillo, Augustus, Jr. (1967) ..... Associate Professor, History
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Chambers, Teresa B. (1969) ..... Head Science Librarian
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Chan, Kwan M. (1969) ..... Professor, Geological Sciences
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Chao, L. Lincoln (1964) ..... Professor, Quantitative Systems
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Chawla, Sudershan (1962) ..... Professor, Political Science
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Chelapati, Chunduri V., P.E. (1965) ..... Professor, Civil Engineering
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Chen, Chia-Hwa (1964) ..... Associate Professor, Physics
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Chow, Richard H. (1958) ..... Professor, Physics
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Christ, Francis L. (1972) ..... Counselor
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Chu, Hsiao-Ling, P.E. (1972) ..... Assistant Professor, Civil Engineering
B.S.C.E., M.S., National Cheng-Kung University, Taiwan; Ph.D., North Carolina State University.

Church, David C. (1968) ..... Assistant Professor, Industrial Education
B. of Architecture, University of Southern California; M.A., California State University, Long Beach.

Clark, Cheryl (1969) ..... Assistant Professor, Philosophy
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Cleveland, Leah M. (1973) ..... Assistant Professor, Nursing
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Click, Robert E. (1962) ..... Associate Professor, Art
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Clyde, Robert B. (1967) ..... Counselor
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Cockrum, James E. (1955) ..... Professor, Instructional Media
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Cohen, Floyd A. (1965) ..... Professor, Mathematics
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Cohen, Ira S. (1959) ..... Professor, Political Science
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Cole, Charles L. (1967) ..... Professor, Economics
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Collins, Charles T. (1968) ..... Associate Professor, Biology
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Collins, Keith E. (1969) ..... Assistant Professor, History
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Colman, Keith R. (1970) ..... Assistant Professor, Psychology
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Comer, James L. (1971) ..... Professor, Men's Physical Education
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Connor, Michael E. (1971) ..... Assistant Professor, Psychology
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Conrey, Bert L. (1955) ..... Professor, Geological Sciences
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Conroy, Jean L. (1961) ..... Associate Professor, Mathematics
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Contreras, Joseph (1961) ..... Associate Professor, Spanish-Portuguese
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Cook, Gail F. (1963) ..... Assistant University Librarian, Personnel
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Cook, Raymond (1966) ..... Professor, Recreation
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Cooper, Gene R. (1969) ..... Associate Professor, Art
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Cooper, June M. (1966) ..... Professor, Communicative Disorders
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Cornwell, Max T. (1968) ..... Professor, Accounting
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Cortese, Peter A. (1973) ..... Associate Professor, Health Science
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Cotta, Edmund A. (1958) ..... Professor, Marketing
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Covell, Jon C. (1964) ..... Professor, Art
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Crafts, James S. (1957) ..... Professor, Art
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Crane, George F. (1958) ..... Professor, English
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Craven, Duane C. (1967) ..... Associate Professor, Speech Communication
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Creamer, Lyle R. (1962) ..... Professor, Psychology
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Crossan, Robert D. (1955) ..... Professor, Educational Psychology
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Dallin, Leon (1955) ..... Professor, Music
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Dame, Donald L. (1965) ..... Assistant Professor, Art
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Daniel, Gerald R. (1968) ..... Professor, Music
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Dank, Barry M. (1968) ..... Associate Professor, Sociology
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Danson, Carl M. (1965) ..... Associate Professor, Psychology
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Davis, Boyd A. (1951) ..... Director of Academic Planning; Professor, Educational Psychology
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Dean, C. Thomas (1952) ..... Professor, Industrial Education
Dean, School of Applied Arts and Sciences
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Deatherage, Dorothy (1955) ..... Professor, Women's Physical Education
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DeHeras, John (1967) ..... Assistant Professor, Art
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Delorme, Robert L. (1966) ..... Associate Professor, Political Science
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Demos, George D. (1962) ..... Professor, Educational Psychology
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Dempster, Donna I. (1970) ..... Assistant Professor, Home Economics
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Denham, Carolyn H. (1971) ..... Assistant Professor, Educational Psychology
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Dennis, John G. (1962) ..... Professor, Geological Sciences
B.Sc., Imperial College, London, England; M.A., Ph.D., Columbia University, New York.

DeSoto, Simon (1969) ..... Professor, Mechanical Engineering
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DeVoe, Robert J. (1968) ..... Assistant Professor, Management
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Devore, Jerald A. (1969) ..... Associate Professor, Chemistry
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Dilbeck, Harold R. (1969) ..... Professor, Finance
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Dillingham, Orval L. (1955) ..... Professor, Art
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Dinerstein, Grace E. (1967) ..... Associate Professor, Home Economics
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Dinielli, Gene L. (1968) ..... Associate Professor, English
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Dixon, Keith A. (1958) ..... Professor, Anthropology
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Donahue, Francis J. (1960) ..... Professor, Spanish-Portuguese
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Dorn, Carl H. (1968) ..... Associate Professor, Mathematics
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Dorsey, John F. (1961) ..... Head Humanities Librarian
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Doud, William R. (1971) ..... Associate Professor, Quantitative Systems
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Drum, Dale D. (1956) ..... Professor, Speech Communication
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Dubin, Max (1974) ..... Medical Officer
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Duckwall, Ralph W. (1964) ..... Professor, Theatre Arts
A.B., M.A., Indiana University.

Dudley, John H., P.E. (1960) ..... Professor, Civil Engineering
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Dunlap, Charlotte A. (1973) ..... Assistant Professor, Nursing
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Dunworth, Ellen J. (1972) ..... Assistant Professor, Nursing
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DuPont, Elizabeth O. (1965) ..... Associate Professor, Women's Physical Education
A.B., Florida State University; M.A., Texas Woman's University.

Duren, Donald (1972) ..... Counselor, EOP
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Dvorak, Eldon J. (1961) ..... Professor, Economics
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Dyer, James L. (1966) ..... Professor, Mechanical Engineering
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Eckhardt, Carol F. (1967) ..... Assistant Professor, Anthropology
A.B., M.A., University of California, Los Angeles.

Edelman, Walter E., Jr., P.E. (1967) ..... Associate Professor, Mechanical Engineering
B.M.E., M.S. in M.E., University of Minnesota; Ph.D., Oregon State University.

Edmondson, Betty V. (1964) ..... Associate Professor, Women's Physical Education
B.S., University of Nevada; M.A., San Jose State University.

Eggers, Robert F. (1964) ..... Associate Professor, Theatre Arts
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Eisenman, Robert H. (1973) ..... Assistant Professor, Religious Studies
B.A., Cornell University; M.A., New York University; Ph.D., Columbia University.

Eliason, Lowell J. (1965) ..... Associate Professor, Physics
B.S., Stanford University; Ph.D., University of Utah.

Erb, Theodore H. (1965) ..... Associate Professor, Political Science
A.B., University of Southern California; M.A., Georgetown University; Ph.D., American University.

Ericksen, Sheldon D. (1955) ..... Professor, Geography
A.B., M.A., University of Utah; Ph.D., University of Chicago.

Eshett, Ali, P.E. (1966) ..... Associate Professor, Civil Engineering
B.S., Technion, I.I.T., Haifa, Israel; M.S., Ph.D., Colorado State University.

Evans, Edward N. (1970) ..... Associate Professor, Electrical Engineering
B.S., University of California; M.S., E.E., California Institute of Technology; Ph.D., University of California, Irvine.

Eylar, Harry D. (1963) ..... Associate Professor, Mathematics
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Farber, Stuart L. (1960) ..... Associate Professor, Health Science
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B.S., University of California, Los Angeles; M.A., California State University, Long Beach; Ed.D., University of California, Los Angeles.

Farr, Wilbur J. (1955) ..... Professor, Industrial Education
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Farrell, Michael J. (1969) ..... Assistant Professor, Economics
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Farrell, Raymond R. (1966) ..... Professor, Finance
A.B., University of California, Los Angeles; J.D., Yale University.

Fatt, Milton J. (1963) ..... Professor, Mathematics
A.B., M.A., University of California, Los Angeles; Doktor der Mathematik, Swiss Federal Institute of Technology.

Fenenga, Franklin (1965) ..... Professor, Anthropology
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Ferguson, Lloyd N. (1973) ..... Lecturer, Physics-Astronomy
B.S., California State University, Los Angeles; M.S., Ph.D., University of California, Los Angeles.

Ferreira, Armando T.(1957) ..... Professor, Art
A.B., M.A., University of California, Los Angeles.

Fiebert, Martin S. (1965) ..... Associate Professor, Psychology
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Fine, David M. (1968) ..... Associate Professor, English
A.B., M.A., University of California, Los Angeles; M.A., California State University, Los Angeles; Ph.D., University of California, Los Angeles.

Fisher, Carolyn D. (1973) ..... Lecturer, Radio-TV
B.S., Northwestern University; M.A., Western Reserve University.

Flores, Filemon C. (1972) ..... Assistant Professor, Management
B.S., University of the Philippines; M.B.A., Ph.D., University of California, Los Angeles.

Fogg, William E. (1956) ..... Professor, Educational Psychology
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Ford, Gerald L. (1969) ..... Assistant Professor, Management
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Fornia, Dorothy L. (1956) ..... Professor, Women's Physical Education
B.Ed., M.A., Ohio State University; Ed.D., University of Southern California.

Forst, Florence H. (1964) ..... Professor, Educational Psychology
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Foster, L. Sheila (1967) ..... Associate Professor, Mathematics
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Fouquet, Patricia R. (1973) ..... Lecturer, History
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Fradkin, Howard E. (1967) ..... Professor, Sociology
A.B., University of California; M.S., University of Wisconsin; Ph.D., Ohio State University.

Frankland, John T. (1966) ..... Associate Professor, Electrical Engineering
B.S., M.E.S., Lamar State College, Beaumont, Texas.

Franklin, Barbara J. (1967) ..... Associate Professor, Women's Physical Education
B.S., Memphis State University; M.S., University of Washington.

Franklin, Mayer J. (1966) ..... Associate Professor, Secondary Education
A.B., Washington Square College of New York University; M.Ed., Ph.D., University of Southern California.

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A.B., M.A., Ph.D., University of California, Los Angeles.

Fredrickson, John E. (1955) ..... Professor, Physics
B.S., University of California; M.S., Ph.D., University of Southern California.

Fried, Elliot (1970) ..... Assistant Professor, English
B.A., M.A., California State University, Long Beach; M.F.A., University of California, Irvine.

Friedland, Anne B. (1973) ..... Lecturer, Anthropology
B.S., New York University; M.A., Ph.D., University of California, Los Angeles.

Fritts, Paul J. (1965) ..... Associate Professor, Geological Sciences
Geological Engineer, Colorado School of Mines; Ph.D., University of Colorado.

Froyd, Robert K. (1958) ..... Associate Professor, Mathematics
A.B., Occidental College; M.A., University of California.

Frye, Robert W. (1967) ..... Professor, Marketing
B.S., M.B.A., Washington University; D.B.A., Indiana University.

Fung, Henry C., Jr. (1966) ..... Associate Professor, Microbiology
A.B., University of California; M.T., University of California Medical School at San Francisco; M.A., San Francisco State University; Ph.D., Washington State University.

Furth, Charlotte D. (1966) ..... Associate Professor, History
A.B., University of North Carolina; A.B., University of Aix-Marseille, France; Ph.D., Stanford University.

Fuss, Audrey (1966) ..... Associate Professor, Sociology
A.B., University of California; M.A., Ph.D., University of California, Los Angeles.

Gabrielsen, Stanley R. (1958) ..... Professor, Recreation
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Gallagher, Phillip J. (1968) ..... Counselor
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Galt, Charles P. (1973) ..... Assistant Professor, Biology
B.A., University of California, Santa Barbara; M.S., Ph.D., University of Washington.

Garofalo, Josephine (1973) ..... Assistant Professor, Nursing
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Gavin, Elizabeth J. (1974) ..... Lecturer, Letters and Science
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Gayer, Dixon L. (1959) ..... Professor, Journalism
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Gensley, Juliana T. (1962) ..... Professor, Elementary Education
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George, Barbara C. (1961) ..... Professor, Finance
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George, Simon (1961) ..... Professor, Physics
B.Sc., University of Travancore, India; M.Sc., University of Saugar, India; Ph.D., University of British Columbia.

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Germann, A.C. (1957) ..... Professor, Criminal Justice
B.S., Loyola University, Los Angeles; M.S., D.P.A., University of Southern California.

Gibbs, Norma B. (1966) ..... Associate Professor, Educational Psychology
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Gibson, Nadyne C. (1955) ..... Professor, Music
B.S., B.Mus., Fort Hays Kansas State College; M.A., Northwestern University.

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Gilpin, C. Barclay, P.E. (1966) ..... Professor, Mechanical Engineering
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Glass, Latanya (1973) ..... Instructor, Women's Physical Education
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Glasser, Alan J. (1959) ..... Professor, Educational Foundations
A.B., Stanford University; M.A., Ph.D., Boston University.

Glenn, Constance W. (1973) ..... Lecturer, Art
B.F.A., University of Kansas.

Glenn, Kenneth (1956) ..... Professor, Art
A.B., M.F.A., University of Washington.

Glezakos, Agathi (1974) ..... Lecturer, Social Welfare
B.A., Pierce College, Greece; M.S.W., Ph.D., University of Southern California.

Glezakos, Constantine (1968) ..... Associate Professor, Economics
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Goerl, George F. (1974) ..... Visiting Professor, Political Science
B.A., M.A., University of California, Berkeley; M.A., New York University.

Gold, Richard R. (1968) ..... Professor, Mechanical Engineering
B.S., M.S., Ph.D., University of Illinois.

Gold, Virginia (1972) ..... Assistant Professor, Elementary Education
B.A., M.A., California State University, Long Beach.

Golden, Roger M. (1966) ..... Assistant Professor, Accounting
B.B.A., M.B.A., University of Miami.

Goldish, Dorothy M. (1958) ..... Professor, Chemistry
Acting Associate Dean, School of Letters and Science
B.S., Stanford University; Ph.D., University of California.

Gonsalves, John, Jr. (1969) ..... Assistant Professor, Men's Physical Education
B.A., M.A., California State University, Long Beach.

Good, John H. (1967) ..... Associate Professor, Criminal Justice
B.S., California State University, Long Beach; M.S., University of Southern California.

Goodman-Malamuth, Leo (1956) ..... Professor, Communicative Disorders
Vice President for Academic Affairs
A.B., M.A., Ph.D., University of Southern California.

Gosselin, Edward A. (1969) ..... Associate Professor, History
A.B., Yale University; M.A., Ph.D., Columbia University.

Graetz, Ralph C. (1956) ..... Professor, Educational Foundations
B.S., Wisconsin State College, Milwaukee; M.Ed., Marquette University; Ed.D., Michigan State University.

Graff, Herman H. (1964) ..... Professor, Art
B.A.E., DePaul University, Chicago, Illinois; M.A.E., Northwestern University.

Graham, Harold V. (1969) ..... Associate Professor, Secondary Education
A.B., University of Southern California; M.A., California State University, Los Angeles; Ed.D., University of Florida.

Grainge, Floyd M. (1953) ..... Professor, Industrial Education
Associate Dean, School of Applied Arts and Sciences
B.S., M.S., Iowa State University; Ed.D., University of California, Los Angeles.

Gramlich, Jay J. (1956) ..... Professor, Instructional Media
B.S., Southwestern State College, Oklahoma; M.Ed., Southern Methodist University; Ed.D., University of Oklahoma.

Granger, Jean M. (1972) ..... Assistant Professor, Social Welfare
B.A., Fisk University; M.S.W., Fordham University.

Grannell, Roswitha B. (1967) ..... Associate Professor, Geological Sciences
A.B., Pomona College; Ph.D., University of California, Riverside.

Gray, David E. (1954) ..... Professor, Recreation
Vice President for Administration and Staff Coordination
A.B., California State University, Los Angeles; M.S., University of California, Los Angeles; D.P.A., University of Southern California.

Green, Jack (1970) ..... Professor, Geological Sciences
B.S., Virginia Polytechnic Institute; Ph.D., Columbia University.

Green, John H. (1955) ..... Professor, Theatre Arts
A.B., Central State College, Edmond, Oklahoma; M.A., Northwestern University; Ph.D., University of Denver.

Green, Kenneth F. (1968) ..... Associate Professor, Psychology
A.B., Brown University; M.S., Ph.D., University of Massachusetts.

Greer, Beatrice M. (1968) ..... Assistant Professor, Art
A.B., M.A., University of California, Los Angeles.

Gregory, Carl E. (1951) ..... Professor, Manpower Management
A.B., University of Washington; M.A., Ed.D., Columbia University.

Gregory, James R. (1970) ..... Assistant Professor, Anthropology
A.B., University of Southern California; Ph.D., University of Pittsburgh.

Gregory, Kenneth M. (1973) ..... Assistant Professor, Biology
A.B., Ph.D., University of California, Berkeley.

Grencik, Judith M. (1973) ..... Assistant Professor, Criminal Justice
B.A., Baylor University; M.Ed., Louisiana State University; Ph.D., University of Maryland.

Griffin, Patrick H. (1972) ..... Lecturer, History
B.S., Loyola University; Ph.D., University of Southern California.

Griffith, Betty N. (1968) ..... Associate Professor, Women's Physical Education
A.B., M.A., East Carolina University.

Grimmett, Dixie Ann (1965) ..... Associate Professor, Women's Physical Education
B.S., Brigham Young University; M.A., Washington State University.

Grogan, Donna (1974) ..... Lecturer, Nursing
B.S., M.S., California State University, Los Angeles.

Gross, Calvin D. (1962) ..... Professor, Art
A.B., Iowa University; M.F.A., Ph.D., University of Iowa.

Grossman, Arthur W. (1968) ..... Assistant Professor, Industrial Technology
B.S., California State University, Long Beach; M.S., Bradley University.

Grounds, Carl T. (1959) ..... Counselor
B.S., M.Ed., University of Oklahoma.

Guerrieri, Daniel J. (1969) ..... Assistant Professor, Philosophy
A.B., M.A., Ph.D., Duquesne University.

Gunns, Albert F. (1967) ..... Assistant Professor, History
A.B., University of Puget Sound; M.A., Ph.D., University of Washington.

Gunter, Serafina Q. (1964) ..... Professor, Accounting
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Guthrie, C. Robert (1963) ..... Professor, Criminal Justice
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Haddox, Victor G. (1973) ..... Associate Professor, Criminal Justice
B.A., University of Southern California; M.D., University of Vienna.

Haglund, Elaine J. (1972) ..... Assistant Professor, Elementary Education
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Hails, Judith A. (1972) ..... Assistant Professor, Criminal Justice
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Hale, John F. (1974) ..... Lecturer, Men's Physical Education
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Hall, Hubert V. (1959) ..... Professor, Marketing
A.B., M.A., University of Oregon.

Halliwell, Michael J. (1968) ..... Assistant Professor, Sociology
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Hallstone, Victor (1970) ..... Medical Officer
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Hamburger, Charles D. (1965) ..... Professor, Management
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Hamel, Albert (1956) ..... Professor, Educational Foundations
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Hamilton, Arlene D. (1966) ..... Associate Professor, Home Economics
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Hamilton, Elizabeth S. (1968) ..... Associate Professor, Dance
B.F.A., University of Texas; die tanzerische und tanzpadagogifche AbschluBprufung, Mary Wigman Schule, West Berlin, Germany.

Haney, Ruth K. (1954) ..... Registrar
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Hanson, Raphael M. (1961) ..... Professor, Psychology
A.B., M.A., Ph.D., University of California, Berkeley.

Haralson, Sally A. (1966) ..... Associate Professor, Psychology
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Hardeman, Nicholas P. (1955) ..... Professor, History
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Harding, Forrest E. (1971) ..... Associate Professor, Marketing
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Hardy, Leroy C. (1953) ..... Professor, Political Science
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Harlow, Charles V. (1968) ..... Professor, Finance
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Harman, Marsha S. (1966) ..... Associate Professor, Sociology
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Harman, Robert C. (1969) ..... Associate Professor, Anthropology
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Harris, Alice M. (1969) ..... Associate Professor, Educational Psychology
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Harris, Edwin R. (1959) ..... Professor, Chemistry
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Hart, Graeme H.T. (1975) ..... Lecturer, Geography
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Hartman, William E. (1951) ..... Professor, Sociology
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Hartsfield, Arnett L., Jr. (1974) ..... Associate Professor, Black Studies
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Haskell, Martin R. (1963) ..... Professor, Sociology
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Hayes, Robert E. (1961) ..... Professor, Political Science
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Heise, Reinald C. (1958) ..... Professor, Management
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Helm, Sanford M. (1954) ..... Professor, Music
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Henderson, Alan C. (1974) ..... Lecturer, Health Science
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Henderson, Braxton C. (1964) ..... Professor, Quantitative Systems
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Henderson, Robert B. (1955) ..... Professor, Chemistry
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Hermann, John A. (1955) ..... Professor, English
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Hertz, Robert M. (1969) ..... Assistant Professor, English
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Hidalgo, Jesus F. (1972) ..... Assistant Professor, Secondary Education, Mexican American Studies
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Hile, Lloyd R. (1968) ..... Associate Professor, Chemical Engineering
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Hill, Cliff W. (1967) ..... Associate Professor, Biology
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Hill, Helen (1972) ..... Assistant Professor, Accounting
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Hill, James W., P.E. (1962) ..... Professor, Electrical Engineering
B.S., M.S., California Institute of Technology, Pasadena.

Hipkiss, Robert A. (1966) ..... Associate Professor, English
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Hitchcock, Howard G. (1958) ..... Professor, Art
A.B., College of Puget Sound; M.F.A., University of Washington; Ed.D., Teachers College, Columbia University.

Hjellemo, Einar O. (1972) ..... Lecturer, Criminal Justice
M.S., Michigan State University.

Ho, Ju-Shey (1970) ..... Associate Professor, Biology
B.S., National Taiwan University; M.A., Ph.D., Boston University.

Hoff, Joan C. (1957) ..... Professor, Home Economics
B.S., George Pepperdine College; M.S., University of Southern California.

Hoffman, Mabel J. (1961) ..... Professor, Nursing
B.S., University of California, San Francisco; M.A., Teachers College, Columbia University.

Holmes, Robert T. (1961) ..... Professor, Marketing
B.S., Purdue University; M.B.A., Northwestern University; Ph.D., State University of Iowa.

Hommel, Leonard S. (1961) ..... Professor, Psychology
A.B., Wayne State University; M.A., State University of Iowa; Ph.D., Stanford University.

Hood, David C. (1966) ..... Associate Professor, History
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Hopewell, Rita J. (1971) ..... Assistant Professor, Accounting
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Horn, Stephen (1970) ..... President
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Hostetter, Gene H. (1968) ..... Associate Professor, Electrical Engineering
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Houde, Adelore L. (1965) ..... Professor, Electrical Engineering
A.B., University of Toronto; M.A., University of Houston; Ph.D., University of Notre Dame.

Howe, Jack H. (1967) ..... Professor, Speech Communication
A.B., Morningside College; M.A., University of South Dakota; LL.B., University of South Dakota; Ph.D., University of Nebraska.

Hrubant, H. Everett (1957) ..... Professor, Biology
B.S., University of Illinois; M.S., Ph.D., Ohio State University.

Hu, Chi-yu Yang (1963) ..... Professor, Physics
B.S., National Taiwan University, Taipei, Taiwan; Ph.D., Massachusetts Institute of Technology.

Hubbard, Harold G. (1970) ..... Professor, Sociology
A.B., University of California, Los Angeles; M.A., Southern Methodist University; Ph.D., University of Southern California.

Hubble, Thomas N. (1958) ..... Professor, Comparative Literature
A.B., M.A., Ph.D., University of Southern California.

Huckaby, David G. (1973) ..... Assistant Professor, Biology
B.S., M.S., Louisiana State University; Ph.D., University of Michigan.

Hume, M. Carlyle (1975) ..... Lecturer, Music
B.M.E., M.M., Indiana University; Ed.D., University of Michigan.

Hunt, Fred G. (1974) ..... Lecturer, Theatre Arts
B.A., Brown University; M.F.A., Yale University.

Hunt, Richard L. (1965) ..... Associate Professor, Chemistry
B.S., Antioch College, Yellow Springs, Ohio; Ph.D., University of Chicago.

Hunter, Carol A. (1969) ..... Associate Professor, Educational Psychology
A.B., University of California, Los Angeles; M.A., California State University, Long Beach; Ph.D., University of Southern California.

Hunter, Michael N. (1973) ..... Associate Athletic Director
B.S., Westminster College; Ph.D., University of Utah.

Hupka, Ralph B. (1969) ..... Associate Professor, Psychology
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Hutcherson, John V. (1956) ..... Professor, Physics
A.B., University of California; M.S., University of Colorado.

Hutchins, Jonathan E. (1974) ..... Lecturer, Chemistry
B.A., University College Oxford; Ph.D., University of Minnesota.

Hutton, Erma L. (1966) ..... Associate Professor, Social Welfare
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Inostroza, Raul A. (1966) ..... Associate Professor, Spanish-Portuguese
Licenciado en Filosofia, University of Concepcion, Chile; M.A., University of California; Ph.D., Stanford University.

Inui, Lloyd T. (1965) ..... Associate Professor, Asian Studies
A.B., M.A., University of Michigan.

Irwin, Cathern M. (1961) ..... Associate Professor, Health Science
B.S., M.S., University of California, Los Angeles.

Isais, Raoul E. (1974) ..... Assistant Professor, Mexican American Studies
B.S., M.A., University of Southern California.

Ishimine, Tomotaka (1967) ..... Assistant Professor, Economics
A.B., Kobe University, Japan; M.A., M.S., Ph.D., University of Wisconsin.

Jackman, Taylor T. (1963) ..... Professor, Educational Administration
A.B., John Brown University; M.A., Oklahoma State University; Ed.D., University of Southern California.

Jackson, Phyllis J. (1969) ..... Assistant Professor, Journalism
B.S., M.S., University of California, Los Angeles.

James, Wilfred P. (1952) ..... Professor, English
A.B., University of Dubuque; M.A., Ph.D., Northwestern University.

James, Willard D. (1967) ..... Professor, Mathematics
B.S., Northern Illinois University; M.S., Ph.D., University of Illinois.

Jamgochian, George R. (1967) ..... Associate Professor, Elementary Education
A.B., Pomona College; M.A., California State University, Los Angeles; Ph.D., Claremont Graduate School.

Jaquith, William G. (1969) ..... Assistant Professor, English
A.B., M.A., Ph.D., University of California, Los Angeles.

Jarrett, Hilton F., P.E. (1966) ..... Professor, Psychology
B.E., M.S., Ph.D., University of Southern California.

Jasmin, Sylvia A. (1974) ..... Lecturer, Nursing
B.S., M.S., California State University, Los Angeles.

Jenkins, Kenneth D. (1970) ..... Associate Professor, Biology
A.B., California State University, Northridge; Ph.D., University of California, Los Angeles.

Jensen, James L. (1968) ..... Associate Professor, Chemistry
A.B., Westmont College; M.A., University of California, Santa Barbara; Ph.D., University of Washington.

Jensen, Marilyn A. (1965) ..... Professor, Recreation
A.B., San Jose State University; M.A., Ph.D., University of Southern California.

Jenson, Owen O. (1966) ..... Professor, Speech Communication
B.S., Bvm Young University; M.S., Ph.D., Purdue University.

Jernigan, John C. (1970) ..... Associate Professor, Comparative Literature
A.B., Southwestern University; M.A., Purdue University; Ph.D., Indiana University.

Jersin, Patricia D. (1965) ..... Associate Professor, Secondary Education
A.B., University of Denver; M.A., Ed.D., University of California, Los Angeles.

Jochums, Richard M., Jr. (1971) ..... Associate Professor, Men's Physical Education
B.A., M.S., University of Washington; Ed.D., University of California, Berkeley.

Johnson, Alan W. (1968) ..... Counselor
A.B., University of California, Los Angeles; M.Ed., University of Cincinnati; Ed.D., University of California, Los Angeles.

Johnson, Charles P. (1974) ..... Lecturer, Industrial Technology
B.S., California State University, Long Beach.

Johnson, Gretchen A. (1969) ..... Assistant Documents Librarian
A.B., St. Olaf College; M.A., University of Denver.

Johnson, Henry S. (1966) ..... Professor, Asian American Studies
A.B., University of Hawaii; M.Ed., Ph.D., University of Southern California.

Johnson, James L. (1974) ..... Lecturer, German, Russian and Classics
A.B., California State University, Long Beach; M.A., Ph.D., University of Southern California.

Johnson, Kenneth L. (1951) ..... Professor, Physiology
B.S., Bethany College, Kansas; M.S., Ph.D., University of Southern California.

Johnson, Lois E. (1959) ..... Professor, Women's Physical Education
A.B., Gustavus Adolphus College; M.Ed., University of Minnesota.

Johnson, Richard J. (1959) ..... Professor, Instructional Media
B.S., Michigan State University; M.S., Ed.D., Indiana University.

Johnson, William M. (1965) ..... Associate Professor, Philosophy
A.B., University of California.

Jones, Dwight (1971) ..... Coach, Intercollegiate Athletics
B.S., M.A., pepperdine College.

Jones, Ira (1969) ..... Associate Professor, Biology
B.S., Benedict College, Columbia, South Carolina; M.S., Atlanta University; Ph.D., Wayne State University.

Jones, Kristi S. (1968) ..... Associate Professor, Art
A.B., Lindenwood College; M.A., Case Western Reserve University.

Jones, Rita H. (1964) ..... Professor, Elementary Education
B.S., Northern Michigan University; M.A., University of Michigan; Ed.D., University of California.

Jordanides, Thimios J. (1964) ..... Associate Professor, Electrical Engineering
B.S. in E.E., Wayne State University; M.S. in E.E., San Jose State University.

Jorgenson, Dale O. (1972) ..... Assistant Professor, Psychology
B.A., Ph.D., University of Minnesota.

Joss, Richard R. (1974) ..... Lecturer, Mathematics
B.S., M.A., Ph.D., University of Washington.

Jung, John R. (1968) ..... Professor, Psychology
A.B., University of California; M.S., Ph.D., Northwestern University.

Kacewicz, George V. (1966) ..... Associate Professor, Political Science
A.B., University of Minnesota; M.A., University of Missouri; Ph.D., Indiana University.

Kahan, Stanley (1961) ..... Professor, Theatre Arts
A.B., City College of New York; M.A., Ph.D., University of Wisconsin.

Kalbus, Gene E. (1957) ..... Professor, Chemistry
B.S., Ph.D., University of Wisconsin.

Kammermeyer, Michael J. (1968) ..... Associate Professor, Art
B.S., University of Southern California; M.A., California State University, Long Beach.

Kampwirth, Thomas J. (1971) ..... Assistant Professor, Educational Psychology
B.S., University of Illinois; M.A., DePaul University; Ph.D., University of Illinois.

Kanasi, Irene (1959) ..... Humanities Catalog Librarian
A.B., University of Science, Budapest; M.A. in L.S., University of Southern California.

Kapche, Robert W. (1966) ..... Associate Professor, Psychology
B.S., Loyola University; M.S., Ph.D., Northwestern University.

Karabenick, Edward (1959) ..... Professor, Geography
A.B., M.A., Wayne State University; Ph.D., University of Michigan.

Kaufman, Elizabeth S. (1963) ..... Professor, Nursing
A.B., Stanford University; M.S., University of California, Los Angeles.

Kausek, James H. (1974) ..... Athletic Trainer
B.S., Purdue University.

Kaywood, Richard (1966) ..... Professor, Safety Education
B.S., College of City of New York; M.A., Ed.D., Columbia University.

Kazan, Elizabeth (1955) ..... Professor, Microbiology
B.S., University of Utah; M.S., Ph.D., University of Southern California.

Kearney, Michael L. (1960) ..... Professor, Finance
B.S., University of California, Los Angeles.

Keenan, Maxine K. (1971) ..... Assistant Professor, Home Economics
B.S., Ohio State University; M.A., California State University, Long Beach.

Keester, Donovan E. (1969) ..... Associate Professor, Quantitative Systems
A.B., Nebraska Wesleyan University; M.A., Ed.D., University of North Dakota.

Kefgen, Mary F. (1958) ..... Professor, Home Economics
B.S., Iowa State University; M.A., New York University.

Kellam, John M. (1970) ..... Associate Professor, Mechanical Engineering
B.S.A.E., Purdue University; M.S., Ohio State University; Ph.D., Johns Hopkins University.

Kelly, James F. (1974) ..... Lecturer, Anthropology
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Kempton, David (1972) ..... Assistant Professor, Recreation and Leisure Studies
B.S., George Williams College; M.S., University of Michigan.

Kendall, Harvey L. (1966) ..... Associate Professor, German, Russian and Classics
A.B., M.A., Ph.D., Indiana University.

Kendall, L. Boyd, P.E. (1969) ..... Associate Professor, Electrical Engineering
B.S., United States Coast Guard Academy; Naval Engineer, Massachusetts Institute of Technology.

Kennedy, Celeste K. (1970) ..... Assistant Professor, Dance
A.B., Washington University; M.A., Humboldt State University.

Kenney, John P. (1966) ..... Professor, Criminal Justice
A.B., University of California; M.S., University of Southern California; Ph.D., University of California, Los Angeles.

Kershaw, Gretha (1966) ..... Associate Professor, Anthropology
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Kesler, Suad W. (1974) ..... Lecturer, Home Economics
B.S., Cornell University; M.A., American University of Beirut; Ph.D., Cornell University.

Kessler, Eugene E. (1969) ..... Assistant Professor, French-Italian
A.B., City College of New York; M.A., University of California; Ph.D., University of California, Irvine.

Key, Harold H. (1965) ..... Professor, Anthropology
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Kiang, Wan-Lin (1974) ..... Lecturer, Management
B.S., National Taiwan University; M.S., New York University; Ph.D., Case Institute of Technology.

Kierbow, Julie Van N. (1957) ..... Professor, Chemistry
B.S., Ohio State University; M.S., University of Hawaii; Ph.D., University of Colorado.

Kim, Hyung I. (1966) ..... Associate Professor, Philosophy
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Kimball, Howard E. (1951) ..... Professor, History
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King, Richard L. (1971) ..... Head, Business and Economics Librarian
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Klein, Gary D. (1970) ..... Assistant Professor, Marketing
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Kleintjes, Paul L. (1954) ..... Professor, Industrial Technology
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Licence en Droit, Certificat d'Aptitude a la Profession d'Avocat; Diplome d'Etudes Superieures de Science Politique; Doctorat d'Etat en Science Politique, Faculty of Law and Economics, Paris, France; B.Litt., St. Anthony's College, Oxford, England.

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Massey, George E. (1959) ..... Professor, Philosophy
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Newman, J. Robert (1967) ..... Professor, Psychology
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Nichols, Theodore E. (1956) ..... Professor, History
A.B., M.A., Ph.D., University of California.

Nicholson, Robert L. (1957) ..... Professor, Industrial Education
B.S., State Teachers College, Oswego, New York; M.S., Oregon State University.

Nickum, James E. (1972) ..... Lecturer, Economics
B.A., University of Kansas; M.A., Ph.D., University of California, Berkeley.

Nielsen, A. Jerome (1968) ..... Associate Professor, Physical Therapy
A.B., Iowa State Teachers College; Certificate in Physical Therapy, State University of Iowa; M.A., University of Southern California; Registered Physical Therapist, California.

Nielsen, Elizabeth E. (1950) ..... Professor, English
A.B., Cornell College, Iowa; M.A., Boston University; Ph.D., Northwestern University.

Noble, Vicente N. (1974) ..... Assistant Professor, Educational Psychology
B.A., M.A., California State University, Los Angeles; Ph.D., Claremont Graduate School.

Noffke, Frank (1964) ..... Counselor
A.B., Indiana University; M.Ed., Washington State University.

Noguer, James H. (1954) ..... Professor, Spanish-Portuguese
A.B., George Pepperdine College; M.A., University of Southern California; Facultad de Filosofia y Letras, Universidad de Madrid; Diploma de Doctor en Filologia Romanica.

Norman, Gordon (1973) ..... Assistant Professor, Music
B.S., University of North Dakota.

Nummedal, Susan G. (1972) ..... Assistant Professor, Psychology
B.A., University of California; Ph.D., University of Minnesota.

Nygaard, John E. (1963) ..... Professor, Psychology
A.B., College of Wooster, Ohio; Ph.D., University of Illinois.

Obatala, J. K. (1972) ..... Associate Professor, Black Studies
B.A., California State University, Los Angeles; M.A., University of California, Los Angeles.

Oden, Richard S. (1961) ..... Professor, Art
B.F.A., Carnegie Institute of Technology; M.F.A., Cranbrook Academy of Art.

Odo, Franklin S. (1972) ..... Assistant Professor, Asian-American Studies
B.A., Princeton University; M.A., Harvard University.

Olguin, Leonard (1974) ..... Lecturer, Elementary Education
B.A., M.A., California State University, Los Angeles.

Oliver, Hazel A. (1960) ..... Education Catalog Librarian
B.Th., Northwestern Christian College, Eugene, Oregon; M.A., Butler University, Indianapolis, Indiana; M.S. in L.S., University of Southern California.

Olsen, R. Warner (1960) ..... Music Catalog Librarian
B.Mus.Ed., University of Colorado; M.S. in L.S., University of Denver.

Opstad, Paul E. (1958) ..... Counselor
A.B., M.A., Ph.D., State University of Iowa.

Orgill, Douglas H. (1951) ..... Professor, English
A.B., M.A., Brigham Young University; Ph.D., University of Southern California.

Orpet, Russel E. (1959) ..... Professor, Educational Psychology
A.B., M.S., M.Ed., Ed.D., University of Southern California.

Osborne, Clyde E. (1957) ..... Assistant Professor, Chemistry
A.B., B.S., University of California, Los Angeles; M.S., University of California, Berkeley; M.S., University of Wisconsin.

Osborne, Douglas (1964) ..... Professor, Anthropology
A.B., M.A., University of New Mexico; Ph.D., University of California, Berkeley.

Osuna, Alex (1970) ..... Assistant Professor, Mexican-American Studies
B.A., M.A., University of California, Los Angeles.

Outwater, Richard A. (1969) ..... Associate Professor, Geography
A.B., California State University, Chico; M.A., University of Oklahoma; Ph.D., University of Minnesota.

Owen, Carolyn M. (1970) ..... Professor, Educational Psychology
B.S., M.A., Western Michigan University; Ed.D., University of Southern California.

Paal, Frank F. (1968) ..... Associate Professor, Electrical Engineering
B.S., McGill University; M.A., Stanford University; M.S., Ph.D., University of California, Los Angeles.

Padilla, Gilbert J. (1968) ..... Assistant Professor, Psychology
A.B., M.A., Ph.D., University of California, Los Angeles.

Pagett, Dana P. (1974) ..... Coach, Intercollegiate Athletics
B.A., University of Southern California.

Palubinskas, Feliksas (1965) ..... Professor, Marketing
B.S.C., M.B.A., DePaul University, Chicago, Illinois; Ph.D., University of Illinois.

Parenzan, Annie R. (1974) ..... Lecturer, Finance
B.A., California State University, Long Beach; J.D., University of California, Los Angeles.

Parker, Douglas A. (1968) ..... Assistant Professor, Sociology
A.B., San Francisco State University; M.A., Ph.D., University of California, Berkeley.

Parker, Kermit U. (1966) ..... Associate Director of Housing, Services
A.B., Simpson College, Indianola, Iowa.

Parmley, Anna M. (1969) ..... Assistant Professor, Biology
B.S., Central Missouri State College; M.A., Teachers College, Columbia University.

Partridge, Lyman M. (1964) ..... Professor, Communicative Disorders
A.B., Brigham Young University; M.A., Teachers College, Columbia University; Ph.D., University of Michigan.

Paselk, Richard A. (1974) ..... Lecturer, Chemistry
B.S., California State University, Los Angeles; Ph.D., University of Southern California.

Pastrana, David E. (1973) ..... Lecturer, Finance
B.A., California State University, Los Angeles; J.D., University of California.

Patcha, John C. (1963) ..... Professor, Industrial Education
A.B., University of California, Santa Barbara; M.S., California State University, Long Beach.

Patrick, L. Benjamin (1970) ..... Associate Professor, Electrical Engineering
B.S.E.E., University of Cincinnati; M.S.E.E., Southern Methodist University; Ph.D., University of Denver.

Patterson, William (1957) ..... Professor, Men's Physical Education
A.B., San Diego State University; M.Ed., Springfield College, Massachusetts; Ed.D., University of California, Los Angeles.

Payne, Carl R. (1968) ..... Associate Professor, Quantitative Systems
B.S., Case Institute of Technology; M.B.A., California State University, Long Beach; Ph.D., University of California, Irvine.

Peachy, Burt H. (1972) ..... Assistant Professor, Theatre Arts
B.A., University of California, Riverside; M.A., California State University, Long Beach.

Pearson, Harvey A. (1969) ..... Associate Professor, Industrial Technology
B.S., University of Minnesota; M.A., University of Pittsburgh.

Pease, John D. (1974) ..... Coach, Intercollegiate Athletics
B.S., University of Utah.

Peccorini, Francisco L. (1966) ..... Professor, Philosophy
A.B., St. Francis Xavier College, Spain; Doctor in Philosophia, University of Comillas, Spain.

Peck, David R. (1967) ..... Associate Professor, English
A.B., Colgate University; Ph.D., Temple University.

Peck, Roderick B. (1957) ..... Dean, Summer Session; Professor, Educational Psychology
A.B., Nebraska State Teachers College, Wayne, Nebraska; M.S., Ph.D., Iowa State University.

Pelters, Wilm (1970) ..... Professor, German, Russian and Classics
M.A., Ph.D., Syracuse University.

Penalosa, Fernando (1970) ..... Professor, Sociology
A.B., A.M., University of Denver; Ph.D., University of Chicago, University of Southern California.

Pendell, David (1974) ..... Lecturer, Art
B.A., M.A., California State University, Long Beach.

Pentecost, Wanda L. (1963) ..... Associate Professor, Nursing
B.S., Mount Union College, Alliance, Ohio; M.S., University of California, Los Angeles.

Perigut, Louis E. (1965) ..... Professor, Chemistry
B.S., M.S., Ph.D., Rutgers University.

Perry, Leland M. (1956) ..... Professor, Elementary Education
A.B., Duke University; M.Ed., Ed.D., University of Missouri.

Pestolesi, Robert A. (1955) ..... Professor, Men's Physical Education
B.S., University of Southern California; M.A., California State University, Long Beach; Ph.D., University of Southern California.

Peters, Donald W. (1953) ..... Professor, History
A.B., Occidental College; M.A., Claremont Graduate School; Ph.D., University of Southern California.

Peters, Gary L. (1971) ..... Assistant Professor, Geography
B.A., California State University, Chico; M.S., Ph.D., Pennsylvania State University.

Petersen, Paul G. (1962) ..... Associate Professor, Psychology
A.B., Ph.D., University of California, Berkeley.

Peterson, Audrey C. (1966) ..... Associate Professor, English
A.B., University of California, Los Angeles; M.A., California State University, Long Beach; Ph.D., University of Southern California.

Petty, Milton A. (1969) ..... Associate Professor, Microbiology
B.S., University of Southwestern Louisiana; M.S., Louisiana State University; Ph.D., University of Minnesota.

Pfeiffer, Edward J. (1974) ..... Lecturer, Political Science
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Pickard, Kenneth L. (1971) ..... Assistant Professor, Quantitative Systems
B.S., Indiana State University; M.A., Ball State University; Ed.D., Northern Illinois University.

Pickel, William T. (1958) ..... Professor, Accounting
B.S., Highlands University; M.S., University of Colorado; LL.B., Blackstone School of Law; C.P.A. Certificate, Texas; Member, Texas State Bar.

Pine, Alvin A. (1962) ..... Associate Professor, Art
B.S., City College of New York; M.F.A., Cranbrook Academy of Art.

Plecnik, Joseph M. (1973) ..... Assistant Professor, Civil Engineering
B.E., Youngstown State University; M.S., Ph.D., Ohio State University.

Plourde, Ferdinand J., Jr. (1966) ..... Assistant Professor, English
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Po, Henry N. (1968) ..... Associate Professor, Chemistry
B.S., Mapua Institute of Technology, Manila, Philippines; M.S., University of Wisconsin; Ph.D., University of California, Davis.

Polakoff, Keith I. (1969) ..... Associate Professor, History
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Polk, Dora Beale (1968) ..... Associate Professor, English
A.B., University of Wales, Cardiff; M.A., M.F.A., Ph.D., University of California, Irvine; M.A., University of Colorado.

Pollach, Samuel (1961) ..... Professor, Elementary Education
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Pollock, Marion B. (1964) ..... Associate Professor, Health Science
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Pomeroy, Charles W. (1970) ..... Associate Professor, English
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Ponsar, Warren (1961) ..... Professor, Social Welfare
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Pooler, Frank M. (1959) ..... Professor, Music
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Popham, Donald F. (1956) ..... Professor, Secondary Education
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Porter, Richard E. (1970) ..... Associate Professor, Speech Communication
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Potter, Richard C. (1967) ..... Professor, Mechanical Engineering
Dean, School of Engineering
B.S., M.S., Ph.D., Purdue University.

Powell, James G. (1961) ..... Professor, Speech Communication
A.B., University of Minnesota; M.A., Pennsylvania State University; Ph.D., University of Wisconsin.

Powell, J. Richard (1954) ..... Professor, Economics
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Powell, Melchior D. (1973) ..... Director, Center for Public Policy and Administration
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Powell, Paul E. (1955) ..... Professor, Industrial Education
B.S., Bowling Green State University; M.S., Stout Institute; Ed.D., Wayne University.

Preston, Louis A. (1970) ..... Counselor
B.Mus.Ed., M.Ed., Texas Southern University.

Prince, John H. (1974) ..... Lecturer, Music
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Probst, Alan R. (1968) ..... Associate Professor, Health Science
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Purcell, Jane F. (1964) ..... Associate Professor, Art
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Purcell, Mary-Joe (1959) ..... Professor, English
B.S., University of Arkansas; M.A., Ph.D., University of Missouri.

Pusavat, Yoko S. (1972) ..... Lecturer, Asian American Studies
B.A., Osaka Women's University, Japan; M.A., California State University, Fresno.

Quest, Charles E. (1966) ..... Associate Professor, Philosophy
A.B., Duke University; Ph.D., Claremont Graduate School.

Quillen, Elisabeth M. (1964) ..... Associate Professor, French-Italian
License-es-Lettres, Doctorat, University of Paris, La Sorbonne.

Quinn, Michael T. (1970) ..... Associate Professor, Manpower Management
A.B., M.B.A., Cornell University; Ph.D., Ohio State University.

Quinones, Louis E. (1965) ..... Associate Professor, Industrial Education
B.S., M.S., State University of New York Teachers College, Oswego, New York; Ed.D., University of California, Los Angeles.

Rader, Bonnie J. (1970) ..... Assistant Professor, Home Economics
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Ragland, James F. (1955) ..... Professor, History
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Rahh, Amen (1970) ..... Assistant Professor, Black Studies
B.A., California State University, Long Beach; M.A., Azusa Pacific College.

Raine, Walter J. (1968) ..... Professor, Psychology
M.A., Ph.D., University of Chicago.

Rainey, Dennis G. (1956) ..... Professor, Zoology
A.B., Westminster College, Missouri; M.S., University of Arkansas; Ph.D., University of Kansas.

Raj, Harkisan D. (1962) ..... Professor, Microbiology
B.S., University of Bombay, India; M.S., Ph.D., University of Poona, India.

Ramirez, Genevieve M. (1974) ..... Assistant Professor, Mexican American Studies
B.A., M.A., Rosary College, Illinois.

Ramsey, Robert W. (1957) ..... Professor, Art
B.F.A., University of Southern California; M.F.A., Alfred University, New York; Ph.D., Ohio State University.

Randall, George A. (1969) ..... Associate Professor, Industrial Education
B.S., M.A., Michigan State University.

Rankin, Gilman W. (1969) ..... Assistant Professor, Theatre Arts
A.B., M.A., California State University, Northridge.

Ratliff, Charles A. (1974) ..... Director, Upward Bound
B.A., University of California, Berkeley; M.S., California State University, Long Beach.

Raun, Toivo U. (1969) ..... Associate Professor, History
A.B., Swarthmore College; M.A., Ph.D., Princeton University.

Ravanal, Marilyn (1974) ..... Lecturer, Art
B.A., University of California, Berkeley.

Rawson, Ernest J. (1957) ..... Professor, Industrial Education
A.B., Peru State Teachers College, Peru, Nebraska; M.E., Colorado Agricultural and Mechanical College.

Rayner, Clare G. (1967) ..... Associate Professor, Music
B.M., University of Toronto; M.M., Ph.D., Indiana University.

Redmon, Jo A. (1964) ..... Associate Professor, Women's Physical Education
B.S., M.S., University of California, Los Angeles.

Reed, Don F. (1957) ..... Associate Professor, Men's Physical Education
B.S., M.S., University of Southern California.

Reed, Walter L. (1974) ..... Affirmative Action Officer
B.A., Iowa State University; M.A., Ph.D., University of Iowa.

Reed, Willard H. (1962) ..... Professor, Civil Engineering
Associate Dean, School of Engineering
B.S., California State University, Long Beach; M.S. in C.E., University of Southern California.

Reeds, J. Nelson (1966) ..... Associate Professor, Chemical Engineering
B.S., M.S., Ph.D., University of Iowa.

Reinhart, Miriam (1973) ..... Head, Education Librarian
B.A., Queens College; M.A.L.S., University of Denver.

Reish, Donald J. (1958) ..... Professor, Biology
B.S., University of Oregon; M.A., Oregon State University; Ph.D., University of Southern California.

Resch, William M. (1964) ..... Professor, Psychology
A.B., San Jose State University; Ph.D., University of Oregon.

Revie, Virgil A. (1957) ..... Professor, Educational Psychology
A.B., M.A., Ed.D., University of California, Berkeley.

Reyna, Henry (1970) ..... Counselor
B.S., M.A., Northern Arizona University.

Rheinish, Robert K. (1973) ..... Director, Learning Resources
B.A., University of South Florida; M.S., Ed.D., Indiana University.

Rhodes, Fen (1967) ..... Associate Professor, Psychology
B.S., Georgia Institute of Technology; M.S., George Washington University; Ph.D., Ohio State University.

Richmond, Patricia (1969) ..... Associate Professor, Sociology
A.B., University of California, Los Angeles; M.A., Ph.D., University of California.

Ridder, Hans P. (1964) ..... Associate Professor, Political Science
Diploma, University of Cologne; Ph.D., Claremont Graduate School.

Ringer, Virginia H. (1961) ..... Professor, Philosophy
A.B., University of California, Los Angeles; Ph.D., University of Southern California.

Roberts, Charles A., Jr. (1956) ..... Professor, Physics
B.S., University of California, Los Angeles; M.S., University of Southern California; Ph.D., University of Maryland.

Roberts, Sharon L. (1974) ..... Assistant Professor, Nursing
B.S., M.S., University of California, San Francisco.

Robinson, Gordon E. (1968) ..... Assistant Professor, Management
B.S., United States Naval Academy; M.B.A., California State University, Long Beach.

Robinson, Herbert B., P.E. (1962) ..... Professor, Industrial Technology
B.S., Michigan State University; M.A., California State University, Long Beach; Ed.D., University of California, Los Angeles.

Rocha, Joseph R. (1974) ..... Assistant Professor, Political Science
B.A., M.C.R.P., California State University, Fresno; Ph.D., Claremont Graduate School.

Rodabaugh, Delmer J. (1955) ..... Professor, English
A.B., Park College; M.A., State University of Iowa; Ph.D., University of Minnesota.

Roden, Johanna W. (1962) ..... Associate Professor, German, Russian and Classics
A.B., M.A., California State University, Long Beach; M.A., Ph.D., University of Southern California.

Rodney, Clara G. (1968) ..... Associate Professor, Elementary Education
B.B.A., New York City College; M.A., New York University; Ed.D., University of California, Los Angeles.

Rodriguez, Mildred S. (1974) ..... Associate Professor, Home Economics
B.S., Oklahoma State University; M.S., Ph.D., University of Arizona.

Rogers, Fred (1959) ..... Associate Professor, Speech Communication
B.S., Kansas State University; M.A., State University of Iowa.

Rolfe, Howard C. (1960) ..... Professor, Elementary Education
A.B., M.A., University of New Mexico; Ed.D., University of California.

Roman, Basil P. (1959) ..... Professor, Mechanical Engineering
Diploma of Engineering, University of Bucharest; M.S., California Institute of Technology; Ph.D., University of California, Los Angeles.

Rooney, Robert F. (1970) ..... Professor, Economics
B.A., M.A., University of California, Los Angeles; Ph.D., Stanford University.

Rose, Jack W. (1956) ..... Professor, Men's Physical Education
B.S., M.A., University of Michigan; Ph.D., University of Southern California.

Rosen, Andrew W. (1973) ..... Lecturer, History
B.A., Harvard University; M.A., Ph.D., University of California, Berkeley.

Rosenfelt, Deborah S. (1969) ..... Assistant Professor, English
A.B., Goucher College; M.A., Columbia University; Ph.D., University of California, Los Angeles.

Roskam, Kay L. (1974) ..... Lecturer, Music
B.M.E., Southern Methodist University; M.M., Wichita State University; Registered Music Therapist.

Ross, Stephen B. (1968) ..... Associate Professor, English
A.B., George Fox College, Newberg, Oregon; M.A., Ph.D., University of Southern California.

Roster, Arlene A. (1952) ..... Professor, Elementary Education
A.B., San Jose State University; M.S., Ed.D., University of Southern California.

Routh, Robert D. (1967) ..... Associate Professor, Industrial Education
A.B., Whittier College; M.A., California State University, Long Beach.

Royal, Sarah A. (1958) ..... Assistant Professor, Women's Physical Education
A.B., M.S., MacMurray College.

Rudkin, Ronald D. (1968) ..... Associate Professor, Management
B.S., California State University, Northridge; M.S., University of California, Los Angeles; D.B.A., University of Southern California.

Rugg, Kenneth W. (1964) ..... Associate Professor, Theatre Arts
A.B., San Jose State University; M.A., California State University, Long Beach.

Runyon, Lowell R. (1968) ..... Associate Professor, Finance
B.S., University of Colorado; M.B.A., D.B.A., University of Southern California.

Rush, George E. (1973) ..... Assistant Professor, Criminal Justice
B.S., M.S., California State University, Long Beach.

Russell, Karl A., Jr. (1950) ..... Counselor
B.S., Indiana State Teachers College; Ed.D., Indiana University.

Russell, Ned M. (1965) ..... Counselor
A.B., M.A., Ph.D., University of Kansas.

Russell, Ruth L. (1963) ..... Professor, Microbiology
A.B., Ph.D., University of California, Los Angeles.

Ryan, James E. (1954) ..... Professor, Industrial Education
B.S., Kansas State Teachers College, Pittsburg; M.A., California State University, Long Beach; Ed.D., University of California, Los Angeles.

Sachdeva, Darshan (1973) ..... Lecturer, Quantitative Systems
B.A., Panjab University; M.S., Florida State University; Ph.D., University of California.

Sakamoto, Eva (1967) ..... Assistant Professor, Nursing
B.S., University of Colorado; M.A., Columbia University.

Salem, Sema'an I. (1961) ..... Professor, Physics
B.Sc., American University, Cairo, Egypt; Ph.D., University of Texas.

Samples, Merna A. (1967) ..... Professor, Home Economics
B.S., Syracuse University; M.A., Ed.D., New York University.

Samuelson, David N. (1966) ..... Associate Professor, English
A.B., Drew University; Ph.D., University of Southern California.

Sanchez, Frederick A. (1969) ..... Associate Professor, Mexican-American Studies
A.B., California State University, Los Angeles; M.A., University of Southern California.

Sandefur, Charles R. (1964) ..... Professor, Men's Physical Education
A.B., M.A., California State University, Long Beach.

Santibanez, Ralph J. (1975) ..... Lecturer, Industrial Education
B.F.A., M.F.A., San Francisco Art Institute.

Sartore, Annabelle J. (1968) ..... Assistant Professor, Management
B.S., M.B.A., California State University, Long Beach.

Sater, William F. (1967) ..... Associate Professor, History
A.B., Stanford University; M.A., Ph.D., University of California, Los Angeles.

Sawyer, Janet B. (1957) ..... Professor, English
A.B., University of Minnesota; M.A., Ph.D., University of Texas.

Saxer, Alton H. (1967) ..... Associate Professor, Finance
B.S., Brigham Young University; M.B.A., University of Southern California; J.D., University of California, Los Angeles.

Scalettar, Richard (1968) ..... Professor, Physics
B.S., City College of New York; M.A., University of Wisconsin; Ph.D., Cornell University.

Scantling, Frederick H. (1966) ..... Associate Professor, Geography
A.B., M.A., University of Arizona; Ph.D., University of California, Los Angeles.

Schaafsma, Frances M. (1959) ..... Professor, Women's Physical Education
A.B., M.A., California State University, Long Beach; Ph.D., University of Southern California.

Schachter, Eugene M. (1970) ..... Assistant Professor, Chemistry
B.S., M.S., Ph.D., University of Pittsburgh.

Schatzlein, Frank C. (1959) ..... Professor, Biology
A.B., Colgate University; Ph.D., Indiana University.

Schechter, Daniel (1969) ..... Associate Professor, Physics
A.B., University of California, Los Angeles; M.S., Ph.D., Carnegie Institute of Technology.

Schierholz, James A. (1968) ..... Assistant Professor, Finance
B.S., Principia College; M.A., Washington University.

Schlachter, Gail A. (1974) ..... Head, Social Science Librarian
B.A., University of California; M.A., University of Wisconsin; Ph.D., University of Minnesota.

Schlaich, Joan M. (1965) ..... Associate Professor, Dance
B.S., Boston University; M.A., Columbia University.

Schmidt, Alfred I. (1967) ..... Associate Professor, Educational Psychology
A.B., M.A., New York University.

Schmidt, Milton E. (1959) ..... Professor, Industrial Education
B.E., Wisconsin State Teachers College; M.A., University of Minnesota.

Schmidt, Paul C. (1968) ..... Associate Professor, Political Science
A.B., Hamline University, St. Paul, Minnesota; M.A., University of California; Ph.D., University of Washington.

Schmidt, Ronald J. (1972) ..... Assistant Professor, Political Science
A.B., M.A., University of California; Ph.D., University of California, Riverside.

Schmitt, John H. (1974) ..... Lecturer, Spanish-Portuguese
B.A., University of Minnesota; M.A., Ph.D., University of Wisconsin.

Schultz, Cramer W. (1964) ..... Professor, Physics
B.S., University of California; Ph.D., University of Southern California.

Schultz, James W. (1963) ..... Associate Professor, Men's Physical Education
B.S., M.A., University of Southern California.

Schultz, Josephine Burley (1951) ..... Professor, Art
A.B., Eastern Washington College of Education; M.A., Ed.D., Teachers College, Columbia University.

Schultz, Raymond G. (1965) ..... Professor, Finance
B.S., M.B.A., University of Southern California; Ph.D., University of Pennsylvania.

Schwab, Arnold T. (1961) ..... Professor, English
A.B., University of California, Los Angeles; M.A., Ph.D., Harvard University.

Schwartz, Howard J. (1969) ..... Associate Professor, Mathematics
B.S., M.S., Ph.D., University of Toledo.

Schwartz, Morton D. (1970) ..... Professor, Electrical Engineering
B.S., M.S., Ph.D., University of California, Los Angeles.

Schwartzkopf, Herman (1950) ..... Professor, Men's Physical Education
B.S., Kansas State Teachers College, Fort Hays; M.S., University of Oregon; Ed.D., University of Southern California.

Scott, Bruce L. (1965) ..... Professor, Physics
B.S., California Institute of Technology; M.S., University of Illinois; Ph.D., University of California, Los Angeles.

Scott, Johanna V. (1974) ..... Assistant Professor, Political Science
B.A., Barnard College; M.A., Columbia University; Ph.D., University of Strathclyde, Scotland.

Seewerker, Joseph F. (1967) ..... Professor, Mathematics
A.B., Pomona College; Ph.D., University of California, Los Angeles.

Segelhorst, Elbert W. (1964) ..... Professor, Economics
A.B., Harris Teachers' College, St. Louis, Missouri; M.A., Washington University; Ph.D., Columbia University.

Senozan, Nail M. (1968) ..... Associate Professor, Chemistry
B.S., Brown University; Ph.D., University of California.

Serrett, Thomas M. (1963) ..... Assistant Science Librarian
B.S., Tulane University; M.S., Louisiana State University.

Sexauer, Norman E. (1967) ..... Professor, Mathematics
B.S., Northwestern University; M.S., Ph.D., University of Illinois.

Shaak, John J. (1962) ..... Professor, Art
B.S., Pennsylvania State University; M.A., Columbia University.

Shainline, John W. (1966) ..... Executive-Student Affairs, Dean of Students
B.S., Pennsylvania State University; M.A., Columbia University.

Shanks, Kenneth H. (1960) ..... Professor, Speech Communication
A.B., Wittenberg; M.A., Ph.D., University of Southern California.

Shaver, Jess C. (1959) ..... Professor, Educational Psychology
A.B., Northeastern State College, Tahlequah, Oklahoma; M.Ed., Ed.D., University of Oklahoma.

Shaw, Peter L. (1974) ..... Associate Professor, Public Policy and Administration
B.A., Occidental College; M.P.A., Ph.D., New York University.

Sheets, Alfred W. (1959) ..... Professor, Sociology
A.B., M.A., Ph.D., University of Southern California.

Sheflin, Joseph A. (1973) ..... Assistant Professor, Criminal Justice
B.S., St. Lawrence University; M.S., Ph.D., Purdue University.

Shen, Kwang Y. (1961) ..... Professor, Physics
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Sherain, Howard (1969) ..... Associate Professor, Political Science
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Shermis, Stewart (1970) ..... Assistant Professor, Anthropology
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Shipley, Donald D. (1953) ..... Professor, Biology
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Shoup, Gail (1969) ..... Associate Professor, Theatre Arts
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Sievers, Sharon L. (1968) ..... Associate Professor, History
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Simons, Robert M. (1959) ..... Professor, Manpower Management
B.S., M.B.A., D.B.A., University of Southern California.

Simonsen, Donald H. (1956) ..... Professor, Chemistry
A.B., Reed College; M.A., Oregon State University; Ph.D., Indiana University.

Simonson, Gene R. (1958) ..... Professor, Economics
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Sims, Sidney B., Jr. (1960) ..... Assistant Fine Arts Librarian
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Sinclair, William A. (1970) ..... Associate Professor, Men's Physical Education
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Sindelar, Ronald C. (1966) ..... Associate Professor, Music
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Singer, Barry F. (1968) ..... Assistant Professor, Psychology
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Skalka, Bernard J. (1967) ..... Assistant Professor, Theatre Arts
B.S., M.A., University of Nebraska.

Skarsten, A. Keith (1956) ..... Professor, English
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Skov, Iva L. (1972) ..... Assistant Professor, Econv
B.S., M.A., South Dakota State College.

Skriletz, Dorothy J. (1959) ..... Professor, Speech Communication
B.S., M.A., Bowling Green State University; Ph.D., Michigan State University.

Slawski, Carl J. (1970) ..... Assistant Professor, Sociology
A.B., University of Southern California; M.A., University of California, Santa Barbara; Ph.D., University of Illinois.

Sleeper, Elbert L. (1957) ..... Professor, Entomology
B.S., M.S., Ph.D., Ohio State University.

Smith, Alton H. (1957) ..... Professor, Mathematics
A.B., George Pepperdine College; M.A., Ph.D., University of Southern California.

Smith, Donald H. (1960) ..... Professor, Industrial Education
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Smith, Earl M. (1968) ..... Associate Professor, Industrial Education
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Smith, Robert J. (1966) ..... Associate Professor, Management
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Smith, Sara W. (1969) ..... Associate Professor, Psychology
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Smith, T. William (1969) ..... Assistant Professor, Theatre Arts
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Smoke, Mary E. (1965) ..... Associate Professor, Mathematics
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Snidecor, John C. (1969) ..... Associate Professor, Art
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Soe, Christian (1967) ..... Associate Professor, Political Science
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Soldat, M. Gaynell (1974) ..... Lecturer, Home Economics
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Souter, Edward B. (1965) ..... Associate Professor, Men's Physical Education
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Spangler, George A. (1971) ..... Assistant Professor, Philosophy
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Spiese, Richard D. (1967) ..... Associate Professor, English
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Spiller, Richard (1969) ..... Professor, Marketing
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Splansky, Joel B. (1969) ..... Associate Professor, Geography
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Spraglin, William E. (1973) ..... Assistant Professor, Mathematics
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Spring, Graham K. (1966) ..... Assistant Professor, German, Russian and Classics
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Springer, Arnold R. (1968) ..... Associate Professor, History
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Stacker, Louis J., Jr. (1955) ..... Professor, Educational Psychology
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Stanger, Norman R. (1971) ..... Professor, Vocational Education
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Stark, Margaret A. (1971) ..... Lecturer, Special Programs
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Stefani, Raymond T. (1971) ..... Associate Professor, Electrical Engineering
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Stein, Meyer L. (1974) ..... Professor, Journalism
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Steiner, Barry H. (1968) ..... Associate Professor, Political Science
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Steiner, W. Rodney (1956) ..... Professor, Geography
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Stephens, Lee B., Jr. (1962) ..... Professor, Biology
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Stern, Andrew (1967) ..... Associate Professor, Economics
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Stern, John H. (1958) ..... Professor, Chemistry
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Stetler, Charles E. (1967) ..... Associate Professor, English
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Stevens, Alden J. (1968) ..... Associate Professor, Political Science
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Stevens, Thomas G. (1973) ..... Counselor
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Stewart, John C. (1972) ..... Medical Officer
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Stockton, William D. (1957) ..... Professor, Entomology
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Strickler, Gerald B. (1958) ..... Professor, Philosophy
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Stuart, Jack M. (1967) ..... Associate Professor, History
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Stuteville, John R. (1964) ..... Professor, Marketing
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Sugimoto, Roy A. (1969) ..... Associate Professor, Secondary Education
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Sullivan, Gerald L. (1968) ..... Associate Professor, English
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Sundstrom, Paul E. (1968) ..... Associate Professor, Educational Psychology
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Svec, William R. (1964) ..... Associate Professor, History
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Swan, Robert J. (1964) ..... Professor, Educational Psychology
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Swensen, Frederick M. (1961) ..... Professor, French-Italian
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Swift, Richard H. (1958) ..... Professor, Art
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Teweles, Richard J. (1967) ..... Professor, Finance
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Thayer, Robert E. (1963) ..... Professor, Psychology
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Thomas, Lindsay, Jr. (1961) ..... Professor, French-Italian
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Thompson, Charles M. (1956) ..... Professor, Art
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Thompson, Edgar J. (1973) ..... Assistant Professor, Music
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Thompson, Jesse J. (1956) ..... Professor, Communicative Disorders
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Tilden, Charles H. (1952) ..... Professor, Educational Foundations; Counselor
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Tillman, Talmadge C., Jr. (1968) ..... Professor, Accounting
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Timmons, F. Alan (1954) ..... Professor, Instructional Media
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Ting, Keh-Ping (1970) ..... Associate Professor, Biology
B.S., Taiwan Provincial Chung Hsing University; Ph.D., University of Alberta, Canada.

Tjioe, Djoe T. (1970) ..... Assistant Professor, Biology
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Toohey, Dale P. (1972) ..... Assistant Professor, Men's Physical Education
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Toohey, D. Margaret (1974) ..... Assistant Professor, Women's Physical Education
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Torby, Bruce J., P.E. (1961) ..... Professor, Mechanical Engineering
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Torney, John A., III (1957) ..... Professor, Health Science
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Torres, Leonard (1956) ..... Professor, Industrial Education
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Totman, Jane M. (1973) ..... Associate Professor, Social Welfare
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Towner, Leonard W., Jr. (1955) ..... Professor, Psychology
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Traber, Wilma J. (1964) ..... Professor, Nursing
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Law Degree, University of Athens, Greece; M.P.A., Ph.D., University of Washington.

Trout, Robert G. (1961) ..... Associate Professor, Industrial Education
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Trubatch, Sheldon L. (1967) ..... Associate Professor, Physics
B.S., Polytechnic Institute of Brooklyn; M.S., Ph.D., Brandeis University.

Trusty, George W., Jr. (1970) ..... Assistant Professor, Industrial Education
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Trygstad, Louise N. (1974) ..... Lecturer, Nursing
B.S.N., Duke University; M.S.N., Indiana University.

Tsao, Ching H. (1965) ..... Professor, Mechanical Engineering
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Turk, Theresa G. (1970) ..... Assistant Professor, Sociology
B.S., D'Youville College; M.S., University of North Carolina; M.A., Ph.D., University of California, Los Angeles.

Turnbull, George (1966) ..... Professor, Art
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Turner, Barbara (1966) ..... Associate Professor, Mathematics
A.B., Cornell University; M.A., Columbia University.

Tyndall, Robert E. (1955) ..... Executive Dean—Planning; Professor, Music
A.B., M.A., M.F.A., Ph.D., University of Iowa.

Tyner, Judith Z. (1970) ..... Assistant Professor, Geography
B.A., M.A., Ph.D., University of California, Los Angeles.

Tyrnauer, Herbert H. (1961) ..... Professor, Art
B.F.A., Carnegie Institute of Technology; M.F.A., Cranbrook Academy of Art.

Uku, Skyne R. (1970) ..... Assistant Professor, Black Studies
B.A., Livingstone College; M.A., Ph.D., Howard University.

Ullman, Paul S. (1958) ..... Professor, Sociology
A.B., M.A., University of Southern California; Ph.D., University of Oregon.

Unt, Hillar, P.E. (1960) ..... Professor, Mechanical Engineering
B.S. in M.E., M.S. in M.E., Ph.D., University of Southern California.

Urquhart, Alexander D. (1953) ..... Professor, Political Science
A.B., M.A., University of Washington; Ph.D., University of California, Los Angeles.

Vander Meyden, Hans H., P.E. (1961) ..... Associate Professor, Mechanical Engineering
Diploma Werktuigkundig Ingenieur, University of Technology, Delft, Netherlands.

Vanderwarf, Marilyn (1957) ..... Associate Professor, Home Economics
B.S., University of Illinois; M.S., Cornell University.

Van Eimeren, James J. (1961) ..... Professor, Art
B.S., University of Wisconsin; M.S., Florida State University.

Vaughan, Georgie B. (1960) ..... Science Catalog Librarian
A.B., M.S. in L.S., University of Southern California.

Vaughan, James S. (1959) ..... Professor, Instructional Media
B.S., West Texas State Teachers College; M.Ed., Ed.D., University of Texas.

Verdina, Joseph (1959) ..... Professor, Mathematics
Diploma, Liceo Scientifico, Palermo, Italy; Laurea di Dottore, University of Palermo, Italy.

Wagner, Joseph A. (1952) ..... Professor, Speech Communication
A.B., M.A., University of Washington; Ph.D., Stanford University.

Walker, Charles T. (1964) ..... Professor, Geological Sciences
B.Sc., Ph.D., University of Leeds, England.

Walker, M. Glen (1964) ..... Professor, Sociology
A.B., University of Chicago; M.A., Stanford University; Ph.D., University of Washington.

Wallin, Eugene C. (1956) ..... Professor, Art
A.B., Beloit College; M.F.A., State University of Iowa; Ed.D., Pennsylvania State University.

Walzer, John F. (1963) ..... Associate Professor, History
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Ward, Barbara A. (1968) ..... Associate Professor, Instructional Media
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Warner, Kenneth K. (1968) ..... Professor, Mathematics
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Warren, Irene B. (1973) ..... Lecturer, Communicative Disorders
B.A., M.A., University of California, Los Angeles.

Warren, Virginia G. (1973) ..... Lecturer, Communicative Disorders
B.A., Marymount College; M.A., Ph.D., University of Southern California.

Warter, Stuart L. (1965) ..... Associate Professor, Biology
B.S., M.S., University of Miami; Ph.D., Louisiana State University.

Watts, John R. (1974) ..... Lecturer, Theatre Arts
B.A., M.Ed., Boston College.

Weaver, Jerry L. (1966) ..... Associate Professor, Political Science
A.B., M.A., Ohio University; Ph.D., University of Pittsburgh.

Weber, William A. (1968) ..... Assistant Professor, History
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Webster, Jay L. (1967) ..... Associate Professor, Industrial Education
A.B., M.A., California State University, Long Beach; Ed.D., University of California, Los Angeles.

Weide, Margaret L. (1965) ..... Associate Professor, Anthropology
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Weinman, Lois J. (1970) ..... Lecturer, History
B.A., California State University, Los Angeles; M.A., California State University, Northridge; Ph.D., University of California, Los Angeles.

Weinstock, Donald J. (1969) ..... Associate Professor, English
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Weisbrod, Kenneth C. (1964) ..... Associate Dean, Counseling and Testing
A.B., University of Redlands; M.A., Stanford University; Ed.D., University of Maryland.

Wellhouse, William T. (1955) ..... Professor, Biology
B.S., Iowa State University; M.A., University of Kansas; Ph.D., Iowa State University.

Wells, Robert G. (1963) ..... Professor, Journalism
B.A., University of Southern California.

Wenjen, Chien (1959) ..... Professor, Mathematics
A.B., National Central University, Nanking, China; Ph.D., University of California, Los Angeles.

Werlick, Stephen G. (1964) ..... Associate Professor, Art
M.F.A., Tulane University.

Wharton, Marion A. (1965) ..... Professor, Home Economics
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Wheeler, Jean D. (1966) ..... Associate Professor, Geography
B.S., M.S., Illinois State University; Ph.D., University of California, Los Angeles.

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Whitcomb, David B. (1967) ..... Counselor
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Whitcomb, Susan (1973) ..... Lecturer, Elementary Education
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White, Elaine E. (1974) ..... Lecturer, Nursing
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White, Sherry (1973) ..... Assistant Professor, Black Studies
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Widdowson, Thomas B. (1968) ..... Professor, Biology
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Wikholm, Ronald J. (1974) ..... Assistant Professor, Chemistry
B.S., University of Illinois; Ph.D., University of California, Irvine.

Wilcox, Richard P. (1967) ..... Assistant Order Librarian
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Wilde, Richard H. (1951) ..... Professor, History
Interim Dean, School of Letters and Science
B.S., Milwaukee State Teachers College; M.S., Ph.D., University of Wisconsin.

Williams, David A. (1965) ..... Professor, History
A.B., M.A., University of California, Los Angeles; Ph.D., University of Southern California.

Williams, David D. (1967) ..... Professor, Physical Therapy
A.B., Hastings College; B.S. in Medicine, University of North Dakota; M.S., University of Nebraska; Ph.D., University of Illinois.

Williams, John B. (1966) ..... Professor, English
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Williams, Luster J. (1956) ..... Professor, English
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Williams, R. Ora (1968) ..... Associate Professor, English
A.B., Virginia Union University; M.A., Howard University; Ph.D., University of California, Irvine.

Williams, Stanley W. (1952) ..... Professor, Educational Administration
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Williamson, Delbert E. (1960) ..... Professor, Accounting
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Wills, John W. (1957) ..... Professor, Speech Communication
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Wilson, Dora J. (1974) ..... Lecturer, Music
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Wilson, James N. (1950) ..... Professor, Geography
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Wilson, Robert R. (1966) ..... Assistant Professor, Mathematics
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A.B., Stanford University; M.A., San Francisco College for Women; Ph.D., University of Southern California.

Wilson, Walter J. (1964) ..... Associate Professor, Accounting
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Winchell, Robert W. (1961) ..... Professor, Electrical Engineering
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Winslow, Robert W. (1952) ..... Professor, Music
B.Mus., Eastman School of Music; M.Ed., University of Rochester; M.A., Ed.D., Teachers College, Columbia University.

Winter, Herbert A. (1959) ..... Associate Professor, French-Italian
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Wood, Eunice M. (1968) ..... Associate Professor, Biology
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Woodfin, Mary J. (1966) ..... Associate Professor, Elementary Education
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Woollett, Edwin L. (1966) ..... Associate Professor, Physics
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Wuesthoff, Robert W. (1959) ..... Professor, Men's Physical Education
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Wylder, Robert C. (1953) ..... Professor, English
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Wynston, Leslie K. (1965) ..... Associate Professor, Chemistry
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Yates, Jerry W. (1974) ..... Lecturer, Art
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Yates, Jo Ann R. (1968) ..... Associate Professor, Speech Communication
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