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University of the Pacific General Catalog 1991-92

Univerity of the Pacific

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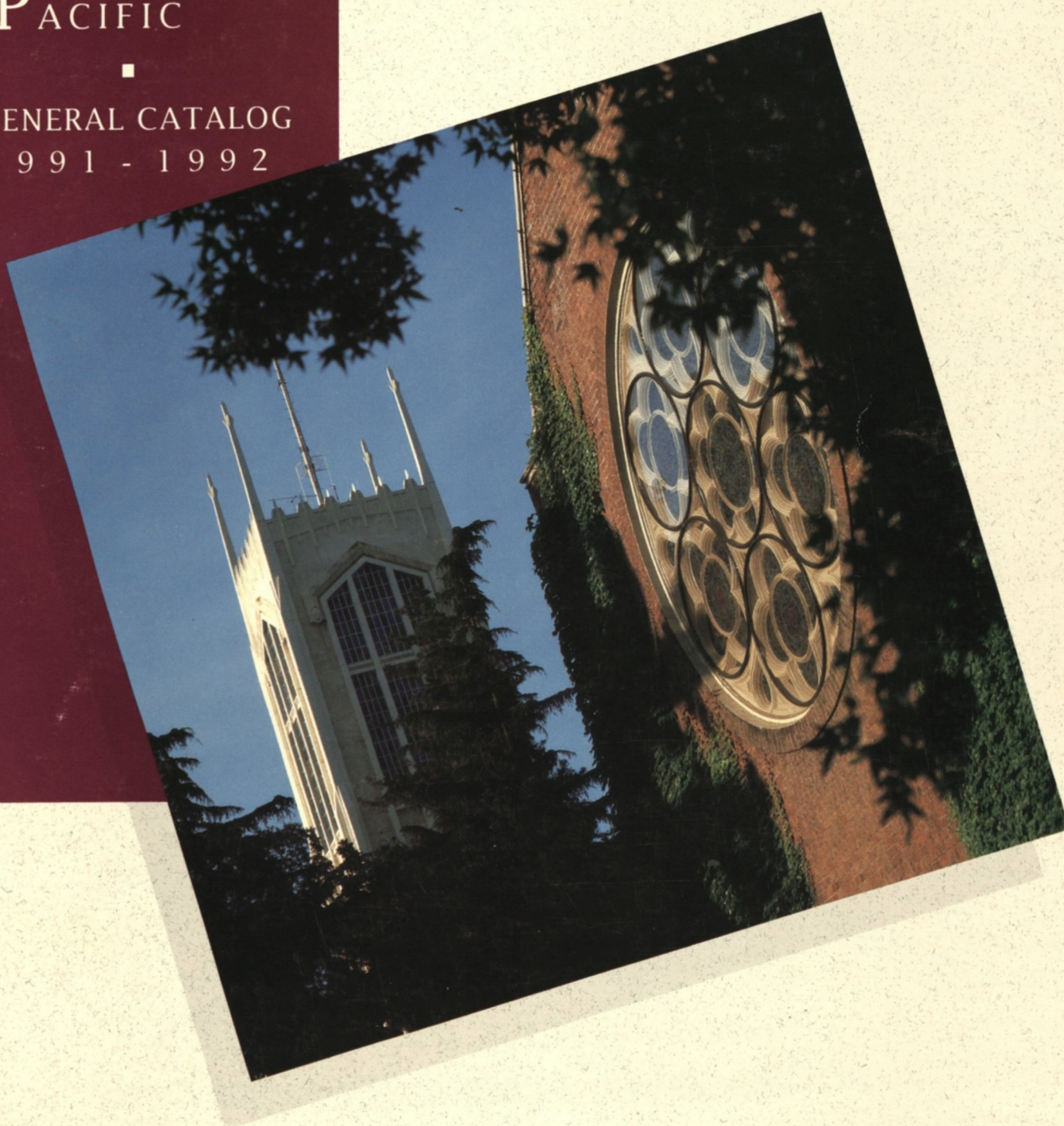
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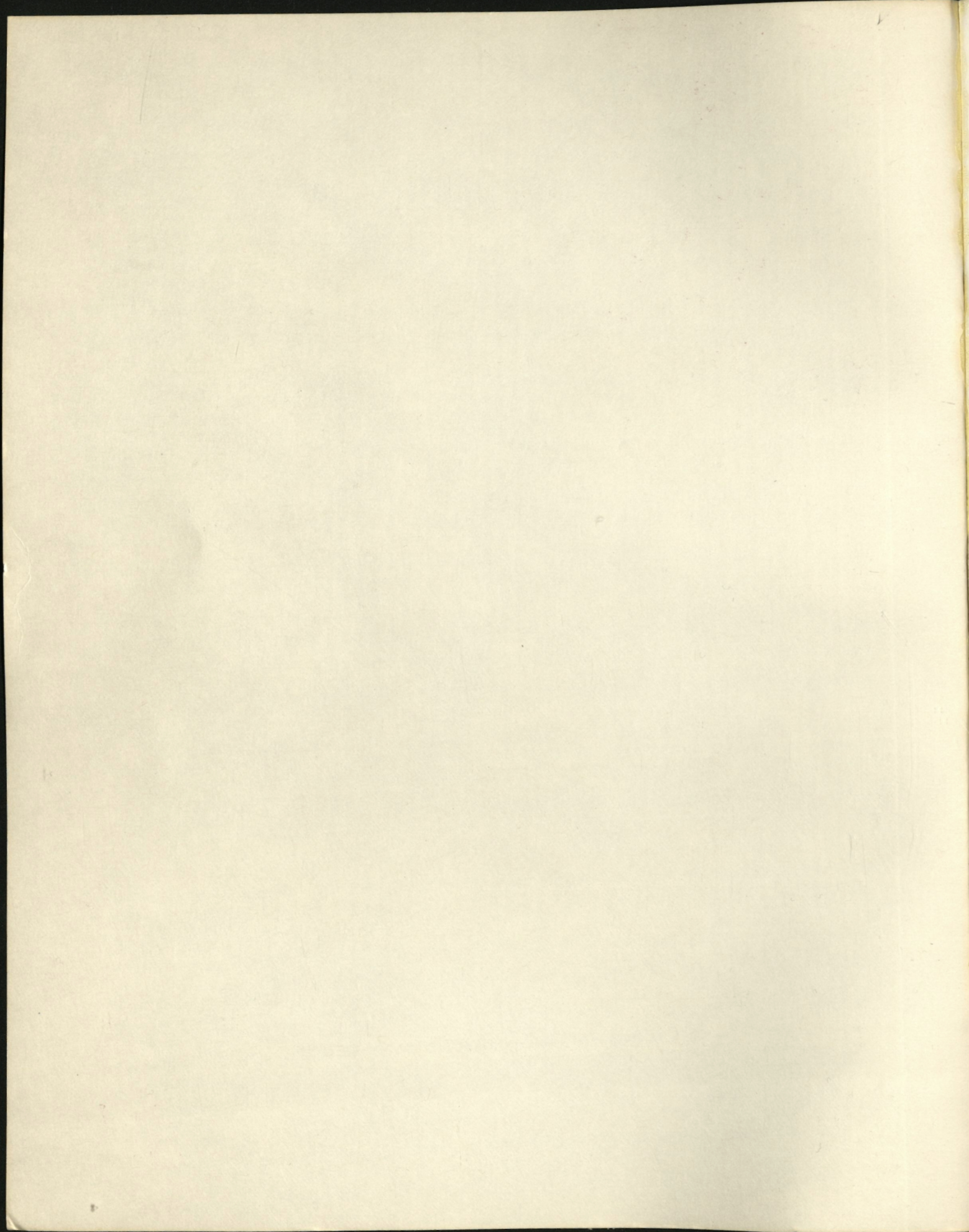
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U N I V E R S I T Y
O F T H E
P A C I F I C

■
GENERAL CATALOG
1991 - 1992



University of the Pacific
Stockton, California



UNIVERSITY OF THE PACIFIC GENERAL CATALOG 1991-1992

DIVISIONS OF THE UNIVERSITY

College of the Pacific

Conservatory of Music

School of Business and Public Administration

School of Education

School of Engineering

School of International Studies

School of Pharmacy

University College

Graduate School

McGeorge School of Law, Sacramento

School of Dentistry, San Francisco

UNIVERSITY OF THE PACIFIC
GENERAL CATALOG

The University of the Pacific is accredited by the Accrediting Commission for Senior Colleges and Universities of the Western Association of Schools and Colleges.

Procedures, rules, regulations, services, tuition, etc. vary on the three campuses of the University of the Pacific. This catalog states those for the schools and colleges of the University located on the Stockton campus. General information pertaining to the School of Dentistry in San Francisco and McGeorge School of Law in Sacramento is included here. Specific provisions for these two schools are stated in their catalogs.

School of Business and Public Administration

The University of the Pacific admits qualified students regardless of sex, sexual orientation, color, religion, handicap, or national and ethnic origin to all the rights, privileges, programs, and activities generally accorded or made available to students at the University. It does not discriminate on the basis of sex, sexual orientation, race, color, religion, handicap, or national and ethnic origin in the administration of its educational programs, admissions, scholarships and loans, athletics or other University activities.

Graduate School
McGeorge School of Law, Sacramento
School of Dentistry, San Francisco

THE UNIVERSITY OF THE PACIFIC

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THE UNIVERSITY OF THE PACIFIC

Introduction

The University of the Pacific is committed to educating men and women to lead socially useful and productive lives by offering baccalaureate and post-baccalaureate programs in the liberal arts and sciences and in professional education. Through programs devoted to liberal learning, specialized study, scholarly and creative activity, and lifelong educational development, the University strives to provide a total educational environment that will encourage the maximum academic, personal and social development of each student in an intellectual community of students, faculty and staff.

A student's formal education at the University of the Pacific consists of three parts: the major program or area of specialization, the Liberal Learning Program and other facets of a structured general education, and elective courses through which a student may pursue a variety of individual interests. The departmental majors and professional degree programs are designed to give students either extended experience in an academic discipline or preparation for specific careers. The Liberal Learning Program is designed to provide students with a breadth of knowledge and understanding regardless of their areas of specialization and defines a common core of the education of all Pacific graduates. The University assumes that its graduates will move into a changing world that will require of them the capacity to add to and to adapt their existing knowledge and professional skills; the general education program will be a major factor in providing Pacific's students with the basis for lifelong learning. The diversity of educational programs and the organizational structure of the University allow students a broad choice in the selection of elective courses beyond those required for their major programs and for general education.

The University's campus in Stockton combines many of the advantages of a larger university with those of a small liberal arts college. A variety of programs in the arts and sciences plus a number of professional schools provide students with a wide range of choices both in selecting their majors and in pursuing other educational interests. Active graduate programs in a number of areas contribute an additional dimension of academic richness for the undergraduate student. Although about two-thirds of Pacific's students are from California, the student body of approximately 3,900 is large enough to include a cosmopolitan mixture of students from throughout the United States and from many foreign countries. At the same time, the relatively small size of the student body and the fact that almost half of the students live on campus and many more live within a block or so of the University create the atmosphere of a small residential campus in which most students quickly begin to feel at home. Relatively

small classes, a faculty deeply committed to undergraduate teaching, and a wide variety of extracurricular organizations and activities further aid students in attaining the feeling that they are an integral part of the University community both academically and socially.

Major Programs

The following sketch of the University's schools and colleges will give an indication of the richness and diversity of educational programs available to students at Pacific. The details on each of these school's programs and curriculum can be found elsewhere in this catalog.

At the center of the broad range of educational opportunities open to students on the Stockton campus is the College of the Pacific, the core college of arts and sciences. Some 1,400 students are pursuing at least one of the more than 50 major programs offered by the college, and most students in the professional schools also take varying amounts of work within the college of arts and sciences. The College of the Pacific offers majors in most of the traditional areas of the physical and life sciences, the humanities, and the social and behavioral sciences as well as a number of interdisciplinary programs which cut across traditional fields of knowledge.

Students in the Conservatory of Music may choose among majors in theory-composition, performance, music education, music history, music therapy and music management. In addition to these programs currently pursued by about 150 students, the Conservatory provides the opportunity for students throughout the University to develop or refine musical skills through courses in applied music.

Students in the School of Business and Public Administration are educated for management positions in business, government and not-for-profit organizations. Approximately 475 students are enrolled in the school, where they may specialize in business administration.

The School of Education prepares students for careers in teaching, counseling and administration at the elementary and secondary school levels. Some 425 students, two-thirds of them at the graduate level, are enrolled in the School of Education and a number of other students take work in the school in preparation for a teaching credential while pursuing a major in one of the other schools or colleges on campus.

The School of Engineering, with some 350 students, offers programs in electrical, civil, management, computer and mechanical engineering as well as in engineering-physics. A program of cooperative education in which students spend a total of about one year in supervised on-the-job engineering work in industry is an integral part of the engineering curriculum.

The School of International Studies, the newest school on campus with approximately 170 students enrolled, took in its first entering class in the fall of 1987. All students in the new school must spend at least one semester abroad and may pursue one of three majors: international studies, international relations or international affairs and commerce.

The School of Pharmacy offers the Doctor of Pharmacy degree. Some 700 students are enrolled in the School of Pharmacy, including about 100 pursuing prepharmacy studies in preparation for beginning the professional program. A graduate program in Physical Therapy also is housed in the School of Pharmacy.

University College is designed for the adult "re-entry" student and has an enrollment of approximately 150 students. University College students may choose among a variety of existing major programs or may pursue an individualized major designed to meet the student's specific career plans. Students in University College also have several opportunities to earn credit for experiential learning.

In addition to these schools and colleges on the Stockton campus, the University has a law school, the McGeorge School of Law, located in Sacramento, and a School of Dentistry in San Francisco. Some 1,400 students are enrolled at McGeorge in both day and evening programs while the Dental School has an enrollment of about 400 students.

General Education

The University is currently revising the general education program. Freshmen entering in the Fall 1991 and Spring 1992 semesters will be required to take Mentor's Seminar I and Mentor's Seminar III. Mentor's Seminar I will be offered in the Spring 1992 semester. They may also be required to meet other requirements mandated by changes in the general education program. Students entering in 1991-92 should check with their school or college deans' office for general education requirements.

The general education program is designed to provide all students with some aspects of a common educational experience and to foster a sense of the interdependence of human knowledge, action and values. The program has two main components: liberal learning and fundamental skills.

Liberal Learning Program

The Liberal Learning Program requires the student to take courses in which he or she will study individual behavior and social structures and change; the heritage of human action, creativity and thought; and the natural world using scientific methods and the formal patterns of disciplined thought. The program is organized into three main categories which are further subdivided as follows:



The Individual and Society

Individual and Interpersonal Behavior
Society and Culture in the United States
International or Intercultural Studies

Human Heritage

Literature, Letters and Language
Fundamental Human Concerns
Practice and Perspective in the Visual and
Performing Arts

Natural World and Formal Systems of Thought

Life and Physical Laboratory Sciences
Formal Systems of Thought
Science, Technology and Society

By taking classes in all of these areas the student will acquire capacities and habits of thought which are necessary in any endeavor. These include familiarity with a broad spectrum of information and knowledge, qualities of judgment which will aid in the effective use of knowledge, an intellectual curiosity that can be a sustaining influence throughout life, and an appreciation of the different approaches and styles characteristic of the various academic disciplines.

All bachelors and first professional degree students on the Stockton campus must complete a minimum of three courses in each category, with at least one course from each subdivision.

Fundamental Learning Skills

The University evaluates students to identify those with deficiencies in written expression and quantitative skills. These students are required to take courses designed to improve their under-

standing and performance in these areas. The writing and quantitative skills requirements are part of the University-wide general education program that must be met before a student graduates with a bachelor's degree or a first professional degree.

Elective Courses

Students in most academic programs at the University find that in addition to the courses required for their major and for general education they have space in their schedules for a number of elective courses. The diversity of academic fields and specialties represented on the Stockton campus, combined with the University's policy of allowing students in any program to take courses in any other school or college on campus, provides the student with a wide choice in the selection of electives. Some students use this freedom primarily to explore unfamiliar academic areas, some to pursue a variety of secondary intellectual interests, and some to develop another area of emphasis as an academic minor or even a formal second major.

History of the University

The University of the Pacific was established by pioneer Methodist ministers in 1851 as the first chartered institution of higher learning in California. Originally founded in Santa Clara, the institution later moved to San Jose and in 1924 to its present location in Stockton.

Throughout its history Pacific has been recognized as a leader in educational innovation. It provided the West Coast with its first medical school in 1858 (it later became part of Stanford and today is Pacific Medical Center), its first co-educational campus in 1871, its first conservatory of music in 1878, its first "cluster colleges," and its first and only four-year private institution in the Central Valley.

Pacific was also first in the nation to offer an undergraduate teacher corps program, the first to send an entire class to an overseas campus, and the first to establish a Spanish-speaking inter-American college. Most recently, the University has established the first university-based undergraduate School of International Studies in California.

Since the move to Stockton in 1924, only four presidents have headed the administration of the University. Tully C. Knoles presided during the move from San Jose and served until he was succeeded by Dr. Robert E. Burns in 1946. Dr. Burns served as president until his death in 1971. Dr. Stanley E. McCaffrey was named president in 1971 and served until his retirement in 1987 when he was succeeded by Dr. Bill L. Atchley.

The School of Education, offering upper division and graduate work, was established shortly after the move to Stockton in 1924. The University experienced its greatest growth and a broadening of its base under the administration of Dr. Burns. In 1955 it opened its School of Pharmacy and in 1956 its Graduate School. The School of Engineering was established in 1957. In 1962 the College of Physicians and Surgeons, a school of dentistry founded in San Francisco in 1896, merged with the University of the Pacific and became the University's San Francisco campus.

In recognition of this growth, the name of the institution was changed in 1961 from the "College" of the Pacific to the "University" of the Pacific. The name "College of the Pacific" was retained for the University's central liberal arts college.

A new concept in higher education in the United States found expression in the establishment of the first "cluster" college, Raymond College in 1962. This was followed in 1963 with the opening of the second such college, Elbert Covell College, the first bilingual-bicultural college in the country. McGeorge College of Law, an independent law school founded in Sacramento in 1924, amalgamated with the University in 1966 as its School of Law. The third cluster college, focusing on non-western studies and featuring a year of study in an Asian culture, began in 1967 as Callison College.

In the fall of 1977, Raymond and Callison Colleges merged to form a single school to provide intercultural and interdisciplinary programs with the distinctive feature of a year of study in Japan. These programs were reorganized in the fall of 1979 under a Center for Integrated Studies and an office of International Programs in the College of the Pacific.

Also in the fall of 1977 the Department of Business Administration of College of the Pacific was reorganized to become the School of Business and Public Administration.

In the fall of 1982, Elbert Covell College was reorganized as a non-degree granting unit and in the fall of 1986 its remaining programs were relocated in other administrative units on campus.

University College, a unit of the University designed specifically for the adult "re-entry" student, was reorganized and revitalized in 1985. In 1986, the University established the School of International Studies which took in its first entering class in the fall of 1987.

Admission Requirements

General

The University of the Pacific welcomes applications from men and women who have shown by past achievement that they have attained a high level of scholarship, initiative and maturity, and who possess good character and a serious interest in learning. Admission is selective and each applicant will be considered on the basis of a variety of factors which are evaluated through a very personalized review process.

It is recommended that applications for the fall semester be submitted by March 1, and for the spring semester by December 15. Also, all students seeking financial assistance are advised to complete all application procedures by March 1.

With the exception of students whose applications are accepted early (see Early Action Plan), most students will receive notification about their application between mid-February and early April. As is the case of other colleges which adhere to a standard reply date, the University expects a reply to its offer of admission for the fall semester by May 1.

The University is interested in a student body characterized by a diverse ethnic, economic and geographical background.

Admission of Freshmen

Regular Admission

Applicants are selected for admission after a careful review of the entire application file. Special emphasis is placed on the coursework you have selected, the grades you achieved, and your grade point average. The supporting recommendation from your school counselor is important, also. In addition, we review your scores on the Scholastic Aptitude Test (SAT), preferred, or the American College Testing (ACT) Program.

Recommended High School Preparation

Although the University of the Pacific does not

require a fixed pattern of secondary school courses, applicants are expected to complete a college preparatory program.

Generally speaking, "academic courses" are those in the fields of English, social sciences, foreign languages, laboratory sciences and mathematics.

It is strongly recommended that the following be included in the secondary school program: four years of English; three years of mathematics including geometry and intermediate algebra; at least one year of laboratory science taken in the 10th year or later (biology, chemistry or physics); at least two years of the same foreign language; one year of U.S. history or government; and additional academic courses — all aimed at improving analytical abilities, promoting artistic development and strengthening written and oral skills.

Students interested in economics or business administration should take advanced mathematics in high school. Students interested in mathematics, science, engineering or pharmacy should include biology, chemistry and physics as well as advanced mathematics in their secondary school program.

Since the senior year in high school is perhaps the most important in preparing for college, a minimum program of four academic courses per semester is particularly recommended for that year.

Students are also encouraged to take honors and advanced placement courses whenever possible. In reviewing applications, the Office of Admissions gives favorable consideration not only to the overall strength of the academic program but to the fact that honors and advanced placement courses have been taken.

President's Honors at Entrance

This special form of recognition is awarded to members of the freshman class who have maintained an outstanding academic record in secondary school. Special application is not necessary, since all who file for admission by March 1 will be considered.

Admission of Transfer Students

Regular Admission

As a transfer student, you would receive consideration for admission to UOP under two options.

Option 1 — (Eligible for admission from high school): If you would have qualified for admission to UOP as a high school senior, you must be in good academic standing at the college in which you are currently enrolled and have a satisfactory record (at least a "C" average in all coursework).

Option 2 — (Not eligible for admission from high school): If you would not have qualified for admission to UOP as a high school senior, you may apply for transfer to UOP after completing at least one semester of full-time study at another two or four year college or university.

Transfer students will not be considered for admission if they are not in good standing at the last college attended, are on academic or disciplinary probation, have been suspended or disqualified, have an unusual pattern of withdrawal, have an "uneven" record involving "D", "F", "NC" or "I" grades, or have earned less than satisfactory grades during terms most recently completed. A supporting recommendation from an applicant's most recent college or university is also required.

For students who would have qualified as freshmen, there is no minimum number of units required for transfer. In interpreting transfer credit, the University of the Pacific generally accepts those courses which are of the same quality and equivalency as courses offered on this campus.

In computing the grade average for a transfer student, only transferable courses are included. Physical education activity courses, however, even when transferable, are not used in calculating this GPA.

Special Admission

Certain transfer applicants, such as veterans, or adult re-entry students and others with special circumstances, will be given special consideration for admission when it is considered that they do, in fact, have the potential for satisfactory college work.

Special Requirements for Music Applicants

In addition to the foregoing academic requirements for both freshman and transfer students, those applying for admission as music majors in either the Conservatory of Music or College of the Pacific must present evidence of music talent and achievement by performing an audition on the principal performing medium. Those planning to major in theory-composition must also submit an original composition. Music history majors must prepare a 500-word essay on a subject provided by the Conservatory in addition to the performance audition.

Auditions will be held at the Conservatory at regular intervals throughout the academic year as well as in certain metropolitan centers. Students unable to appear for an audition may substitute a tape recording in place of the audition. Audition arrangements should be requested from the Conservatory of Music (209) 946-2418.

Special Requirements for Bachelor of Fine Arts Degree Applicants

In addition to meeting the prescribed academic requirements for admission for both freshman and transfer students, those applying for admission to the Bachelor of Fine Arts degree program must present evidence of art talent by presenting a portfolio of selected student work and meeting other requirements as specified by

the Art Department faculty. (See College of the Pacific, Art, regarding requirements for the BFA, page 38.)

Special Requirements for Pharmacy Applicants

For those transfer students seeking admission to the first professional year of the Doctor of Pharmacy degree program: approximately 64 transferable units are required, including one semester each of calculus and physics with lab; and one year each of biological science with lab, inorganic chemistry with lab, and organic chemistry with lab. Additionally, students must complete 28 semester units of liberal arts including courses in English composition, oral communication and economics as well as general education.

No application for admission to the Doctor of Pharmacy program will be accepted unless the applicant has taken, or plans to take, all of the prepharmacy courses listed above.

Applicants whose native language is not English also will be asked to demonstrate English language proficiency. (See page 7.)

For further details, interested students should refer to the School of Pharmacy section of this catalog.

Pharmacy applicants are urged to correspond with the Office of Admissions well in advance of the application date to make certain that all prepharmacy subject requirements are fulfilled.

Early Action Plan

The University of the Pacific follows an Early Action plan for high school students with exceptionally strong high school records, test scores and recommendations. Applicants wishing to be considered for Early Action, must have a **completed** application on file with the Office of Admissions by December 15.

Early Admission Plan

Students who have not yet graduated from secondary school may be admitted to the University of the Pacific at the end of their junior year if they have an outstanding secondary school record and are recommended by their secondary school principal as having the maturity to adjust satisfactorily to the college environment. Please contact the Office of Admissions for application instructions.

Interviews

Campus interviews are not usually required although prospective students are encouraged to visit the campus (see Campus Visits). However, the University does reserve the right to ask prospective students to appear for an interview as part of the admissions procedure when such an interview appears appropriate and would assist in determining the applicant's qualifications for admission.

Advanced Placement and Credit

College credit (six units per examination) may be granted to students who achieve scores of three, four or five on Advanced Placement Examinations given by the College Board. In addition, students who have been given the opportunity by their secondary schools to take college courses prior to high school graduation will be given college credit when such courses were taken after the junior year and **were not required to meet high school graduation requirements. The purpose of advanced placement and credit is to recognize advanced work of quality already accomplished by certain students, to preclude duplication of courses, and to provide increased opportunity for exceptional students to take elective work in their undergraduate programs.**

College-Level Examination Program (CLEP)

College credit may also be granted, within certain limitations, for the General and Subject Examinations offered through the College-Level Examination Program (CLEP) of the College Board when satisfactory scores have been earned. This program may be utilized by entering freshmen who take the tests prior to matriculation for the purpose of earning advanced standing credit, by regularly enrolled students for accelerating their programs or demonstrating competency in certain subjects, or by candidates for transfer who desire advanced credit or present the tests in support of applications for admission. Further details can be obtained by writing to the Office of Admissions.

Special Requirements for Non-Native Speakers of English

Applicants who are not native speakers of English will be expected to provide evidence of proficiency in the English language. Such proficiency may be demonstrated through the academic record itself, or by means of the Test of English as a Foreign Language (TOEFL). The University reserves the right to administer its own English language test to new students and to adjust a student's academic program on the basis of test results.

Admission of Foreign Students

The University of the Pacific welcomes applications from foreign students and provides complete support services for them through its Office of International Services. The University is authorized to issue I-20 and IAP-66 forms to foreign students for visa purposes.

Foreign applicants whose native language is not English will normally be expected to pro-

vide scores from the Test of English as a Foreign Language (TOEFL), or other evidence of high level English language proficiency as part of the admissions procedure. Scholastic Aptitude Test results are not routinely required of foreign students applying from outside the U.S. unless they have graduated from an American-style high school.

In order to comply with regulations of the United States Immigration and Naturalization Service, the University of the Pacific requires applicants who are not citizens or permanent residents of the United States to submit a detailed Certification of Finances showing sufficient financial resources for study at the University. Other special information and instructions regarding the admission of foreign students will be provided upon request.

Admission of Veterans

The University of the Pacific is approved under Federal and State laws for the training of veterans.

Veterans are encouraged to apply for admission and the satisfactory completion of a period of military service will be taken into consideration in the evaluation for admission.

Campus Visits

Prospective students are invited to visit the campus and to spend the night in a residence hall as guests of the University. It is hoped that prospective students will visit the campus when classes are in session, avoiding weekends or University vacation periods. (See Academic Calendar, page 173.) The Office of Admissions will arrange a schedule for a prospective student's campus visit which may include appointments with faculty members, an admissions officer, a financial aid counselor and a campus tour.

For individuals or small groups, student-led tours of the campus are available Monday through Friday at 11:00 a.m. and 2:00 p.m. and on selected Saturdays, except during vacation periods. Tours for larger groups are also available, but should be planned in advance with the Office of Admissions. The Office of Admissions is open Monday through Friday from 8:30 a.m. to 5:00 p.m. and on selected Saturdays — by appointment only — from 9:00 a.m. to noon, except during holidays. Please call the Office of Admissions, (209) 946-2211, to schedule a visit to campus.

Further Information and Forms

For information on an area of specific interest, for application forms for admission or financial aid, or for a campus appointment, write or call: Office of Admissions, University of the Pacific, Stockton, California 95211, telephone: (209) 946-2211.

The Community Involvement Program

The purpose of the Community Involvement Program is to provide access to educational opportunities for low income, ethnic minorities and other students, and to give qualified local residents an opportunity to attend UOP by providing tuition scholarships.

CIP maintains linkages with the ethnic communities in Stockton and supports their educational concerns as the University continues to be a visible and inclusive part of the community in which it has been established. The program remains an integral part of academic processes and planning under the sponsorship of the School of Education, which has a demonstrated commitment to serve the needs of minority students and the community.

Program Components

The organizational design of CIP is three-fold: (1) to recruit eligible students, and provide the necessary financial assistance to attend UOP, (2) to assist them to adjust to the academic environment and to complete their educational pursuits at the institution, and (3) to provide academic enrichment activities and events, through cultural seminars, speakers and workshops. The services available to students are: academic, personal, career and financial counseling. Tutorial services are available for any subject offered at the University.

The CIP Advisory Board, represented by faculty members, administrators, community persons and students, advise the Dean of the School of Education and lend expertise to the program. Also, the Community Involvement Program Student Association assists by providing activities and a social network for all CIP students. CIPSA contributes many volunteer hours throughout the community.

Program Admissions

CIP seeks applicants who have a sincere desire to achieve as a person and as a student and who are community-minded. Admission requirements along with application packets are available at the CIP office. The deadlines are in February to apply for the fall semester and October to apply for the spring semester. Admission is based on a completed packet by the established deadline followed by a personal interview and participation in an orientation/retreat.

Inquiries should be sent to the Community Involvement Program, Bannister Hall, second floor, University of the Pacific, Stockton, California 95211, or call (209) 946-2436.

The Upward Bound Program

The Upward Bound Program is one of the oldest federally funded educational equity programs in the nation. It is a highly successful, college-based program of rigorous academic instruction, individual tutoring and counseling for low-income, disadvantaged high school students, most of whom are the first generation of their families to consider postsecondary education.

The program began in 1964 under the Johnson administration. Serving only the Stockton Unified School District, the University of the Pacific has supported this program for the past ten years and boasts 96% postsecondary placement. The program serves 55 students who receive the benefit of Saturday School instruction during the school year, as well as a six-week residential academic program on the UOP campus.

For more information, write or call: Upward Bound Program, Bannister Hall, second floor, Stockton, California 95211, (209) 946-2354.

The Supportive Services Program

A grant from the U.S. Department of Education enables CIP to provide support services to 200 students enrolled at UOP each year. These students must be deemed eligible based on federal guidelines.

The services that are offered to students include tutoring, academic and financial counseling, career development services, cultural enrichment activities and funds to attend workshops and seminars.

For more information, write or call: Supportive Services Program, Bannister Hall, second floor, Stockton, California 95211, (209) 946-2439.

Orientation and New Student Advising Program

Orientation for Freshmen

Orientation is designed to introduce students to the intellectual nature of the University. This experience aids each student in understanding their responsibilities and the challenges of contributing to the intellectual life of the University. Orientation facilitates the transition to the University, introducing academic programs and resources.

Freshman Orientations are two-and-one-half day sessions that take place during the summer and just prior to the fall semester. During this time, students are assigned to a student and faculty advising team to assist them in planning and registering for a program of study for the first semester. In addition, freshmen become acquainted with their new environment and receive important information on academic adjustment to college life.

Orientation for Transfer Students

Transfer students attend a two-day orientation session just prior to the beginning of the fall semester. During this time, the student will meet with his/her adviser to determine a program of study that meets his/her needs and that takes advantage of the college level work already completed by the student. Student advisers assist with discussions on academic adjustment to the UOP environment.

Orientation for Parents

Simultaneous with but completely separate from

the student orientation are sessions for parents of incoming freshmen and transfers. This orientation is designed to acquaint parents with academic offerings, student services and cultural facilities available to students.

Student Advising Program

Students entering college are faced with many adjustments. They will need someone interested in them as individuals to turn to as they begin their academic experience. The Student Advising Program provides each student with two advisers: a faculty member and a trained peer.

In recognition of the fact that many students naturally feel comfortable talking with a peer who has gone through similar situations, the student advisers provide assistance in such areas as time management, taking lecture notes and homework difficulties. In addition, student advisers work with faculty advisers in helping students with program planning and personal adjustment and in referring students to the full range of campus services.

The services of the Student Advising Center are also available through other campus offices including the Academic Skills Center, Admissions, and International Services.

Financial Aid

The University maintains a substantial financial assistance program including scholarships, grants, loans and job opportunities. The entire program is administered in a single office which makes it possible for qualified students to be offered aid in one form or in a combination of several. Students seeking scholarships, grants, college work study or loans from the University should apply for financial assistance and admission by March 2. An applicant must be approved for admission before financial aid can be awarded. Awards are usually made for the entire school year, and the amount is divided equally among the number of terms of enrollment. Financial aid at the University is available only to U.S. citizens, permanent residents and refugees. Additional financial aid information is available from the Financial Aid Office.

All applicants who are legal residents of California are expected to investigate and apply for a Cal Grant A in addition to any application for financial assistance made to the University. California secondary school and community college students from low income families are also urged to apply for the Cal Grant B. Secondary school and college counselors have full details on both programs.

Financial Aid Probation and Disqualification

Federal regulations require the Financial Aid Office to insure that financial aid applicants are making satisfactory academic progress toward their degree as well as remaining in good academic standing. Those students placed on

academic probation are automatically placed on Financial Aid Probation. Students who are academically disqualified from UOP will be placed on Financial Aid Disqualification. All financial aid recipients are also expected to satisfactorily complete a minimum unit requirement for every twelve-month period of attendance, regardless of GPA. Please refer to both the Academic Probation and Disqualification Policy Statement in this catalog and the Financial Aid Satisfactory Academic Progress Policy Statement available from the Financial Aid Office for further details.

Scholarships and Grants

University of the Pacific offers a number of scholarships and grants from income provided by gifts, endowments and its own general funds. Qualifications vary according to conditions stipulated by donors of funds, but attention is usually given to some or all of the following: academic record, special talents, leadership abilities, standards of character and citizenship, vocational objectives and financial need.

All applicants must file a UOP Financial Aid Data Sheet with the University Financial Aid Office and a Student Aid Application for California (SAAC) or Financial Aid Form (FAF) with the College Scholarship Service. The SAAC may be secured from the scholarship counselor at a high school or college or from the University.

Scholarships awarded without regard to financial need are listed below with a plus (+). Applicants should not request a specifically named scholarship; applicants are automatically considered for all scholarships for which they qualify.

General Academic Scholarships (Endowed)

Scholarships are granted from the following list of endowed scholarships without regard to the student's major, except as noted.

Anne and Ray Arnold Memorial Scholarship, established by Mrs. Anne Brady Arnold of Stockton in memory of her husband, a former Tracy banker, and augmented by gifts in memory of Mrs. Arnold.

Laura Tull, Walter Pike Austin and Henrietta T. Austin Scholarships, established for worthy, needy and deserving students.

John and Jessie L. Ballantyne Memorial Scholarship, established during their lifetimes by these Lodi friends of Pacific, to assist worthy students.

Gertrude Moore Beans and William Knox Beans Memorial Scholarship, for deserving and needy women students. Established by a bequest from an alumna of the Class of 1920.

Jess A. Berger Scholarship Fund, established by Dr. Evelyn Berger Brown in honor of her late husband.

William M. Black Endowed Scholarship, established by the bequest of a faculty member's father. Income awarded to needy and deserving students.

Maynard A. Bostwick Scholarship, established by an alumnus for a student of music or religious studies.

Erma L. Boyce Memorial Scholarships, awarded from the income from the estate of Miss Erma L. Boyce of Lodi to aid male students.

Robert E. Burns Endowed Scholarship Fund, established in memory of Robert E. Burns, twentieth president of the University, by his widow Grace Weeks Burns Baun. Awarded to a needy and deserving student.

Leslie M. Burwell Memorial Scholarship, established by Mrs. Leslie M. Burwell to be given to sons and daughters of Methodist ministers or eligible religious studies students.

Robert and Merle Carter Scholarship Fund, established by two longtime friends of the University whose belief in Pacific and its students motivated them to provide this opportunity for worthy and needy young men and women.

Class of 1927 Scholarship, provided from a fund established and supplemented annually by members of the class of 1927.

Classes of '49, '50 and '51 Scholarship Fund, established by the members of these three classes.

Herman A. and Margaret P. Clover Memorial Scholarship, created by the gifts of alumnus Dr. Haworth A. Clover and his wife Carol in memory of his parents.

Elmer C. and Lena E. Courtney Memorial Scholarship, established by Lena C. Courtney for bonafide residents of the Greenfield Union Elementary School District, located in the County of Monterey, California.

Paul L. Davies, Sr., Memorial Scholarship, funded by a gift from a special friend.

+Ellen L. Deering Graduate Scholarship, established in her honor by the Pacific Association of Collegiate Registrars and Admissions Officers, of which she was a founding member.

Robert C. and Olive V. D'Erlach Memorial Scholarship, funded by their bequest.

Elliott L. Fisher Memorial Scholarship, established by his family and friends to assist worthy students.

Friedberger Educational Fund, established by the bequest of Dr. William Friedberger, in memory of his parents, Arnold and Lotta Friedberger.

David C. Friedrich Scholarship, established by the parents and many friends of Dave Friedrich, Class of 1988, whose life was lost in a water skiing accident during his senior year at UOP. Awarded to full time students with preference to a pre-dentistry major.

Irving and Faye Goleman Educational

Opportunity Fund, established by Gordon Zuckerman in honor of two Pacific professors emeriti, for scholarships to deserving and academically qualified students.

Virginia Graves Scholarship, established by a University friend for the benefit of male students from middle-income backgrounds.

Sarah Elizabeth Riley Harris Memorial Scholarship, established by the will of Grace Dell Stuart in memory of her mother.

Hearst Scholarship Endowment, established by The Hearst Foundation to be used for needy and deserving students.

Cecil and Alberta Humphreys Scholarship Fund, established by a distinguished alumnus and longtime member of Pacific's Board of Regents and his wife, an alumna.

Harriot West Jackson Memorial Scholarship, given by the late Mrs. Winifred Cumming of Washington, D.C. and Frank West of Pebble Beach in memory of their aunt.

Mrs. Fay Wallace Kiser Memorial Scholarship, in memory of Mrs. Kiser, established to assist needy and deserving students.

Emily Knoles Centennial Scholarship, created on her 100th birthday by family and friends, and augmented by gifts in memory of the wife of former Pacific President Tully C. Knoles.

Geraldine Scott Krause Endowed Scholarship, established by this alumna of the class of 1936 for needy and deserving students.

Dr. Harry W. Lange Scholarship Fund, established to assist worthy and deserving students.

La Quinta Motor Inns, Inc., Endowed Scholarship Fund, established by La Quinta Motor Inns, Inc. and augmented by a portion of the room rentals by UOP visitors.

Elizabeth Laskin Memorial Scholarship, given and supplemented by her parents, Mr. and Mrs. Myron Laskin of Milwaukee, Wisconsin, and many friends in memory of a graduate of the class of 1956.

Los Angeles Pacific Club Endowed Scholarship Fund, created by the gift of the Los Angeles Pacific Club. Earnings to be awarded to a needy and deserving student from the Los Angeles area.

Stanley E. McCaffrey Endowed Scholarship Fund, established by family, friends and colleagues in honor of the twenty-first President of UOP (1971-1987).

John A. McCarthy Foundation Scholarship, for students with 3.0 grade point average.

McDaniel Educational Opportunity Fund, established in 1972 by two friends of the University, Mr. and Mrs. Neil W. McDaniel of Oakland, to assist young men and women who require financial assistance.

Lenora M. Magee Memorial Scholarship, for needy students.

Timothy Patrick Murphy Endowed Scholarship Memorial Fund, established by the parents and many friends of Tim Murphy, class of 1978, whose life at UOP left an indelible impression on his teachers and fellow students.

Wert E. and Viola Moore Scholarship, established by a bequest of long time Stockton resident, Viola Moore to help young people.

Marshall O. Nelson Scholarship Fund, for worthy and needy students.

Ida R. Patton Memorial Scholarship, established through the Ida Patton Trust Fund, for needy and worthy students who intend to enter a field of full-time Christian service.

Glen Ainslee Payne Memorial Scholarship, established by the Walter A. Payne family for academically qualified (3.0) Latin women who are juniors or seniors attending UOP.

Irma E. Pennycook Endowed Scholarship, established by a bequest of this University friend.

William H. Pfund Memorial Scholarship, established for the benefit of worthy and deserving students.

Marian Pope Endowed Scholarship, established by bequest for needy and worthy students.

Sandy Price Memorial Scholarships, given by the Caldor Lumber Company and the Mildred Kellogg estate, to be awarded annually and preferably to applicants from the El Dorado Union High School District.

Rupert and Philamena Russell Scholarship, established for the benefit of worthy and deserving students by the bequests of Mr. and Mrs. Russell.

Walter B. Sampson Scholarship, established by bequest for worthy and needy students.

William and Jeanne Sanford Endowed Scholarship, established by friends and members of the Paradise United Methodist Church in honor of their minister and his wife.

Audrey and Henry Schwerin Scholarship Fund, established by bequest from the estate of Mrs. Audrey Schwerin.

Dorothy J. and Daniel H. Singleton Scholarship, established by bequest for needy and worthy students.

Florence E. Smith Memorial Scholarship, provided by Mr. J. Winter Smith of San Jose in memory of his wife, an alumna of the class of 1909, for qualified and worthy graduates of any accredited high school in California.

J. Winter Smith Scholarship, given to students who are residents of California with high scholastic ability, outstanding character and citizenship, and evidence of financial need.

Southeast Asian Endowed Scholarship Fund, income awarded as scholarships to Southeast Asian students in memory of the five children killed at Cleveland Elementary School in 1989. Established by memorial gifts and proceeds from benefit performances.

Esther J. Tarr Scholarship, established by Curtis W. Tarr, in honor of his mother and augmented by gifts in her memory.

Zana Taylor Weaver Scholarships, established by her will to provide one or two annual scholarships for worthy young men and women attending the University.

Charles A. and Harriette E. Thomas Scholarship Fund, established by bequest and

given in loving memory of their parents, to be used for worthy Protestant students.

Guy P. Tucker Endowed Scholarship Fund, established by bequest from this University friend for needy students.

Wendy Webb Memorial Scholarships, given by her parents, Mr. and Mrs. J. S. Webb of Calabasas, California, and many friends in memory of a former student.

Dr. Gustav A. and Ellen M. Werner Memorial Scholarships, awarded annually to eligible students. Established by family and friends in memory of a popular history professor and his wife.

***Wickert Memorial Fund**, established by the Carol Wickert Raab Trust; the income to be used to provide a scholarship for young men and women, on such terms and conditions as the trustees of UOP shall determine.

Wightman Memorial Scholarship, funded in her brother's memory by Mrs. Bessie Jasmann, for students from the Brentwood, Antioch or Oakley area.

General Academic Scholarships (Funded Annually)

+ **ARCS Foundation Scholarships**, Achievement Awards for College Scientists.

Emily, Sarah and Stanley L. Balmer Education Trust, for entering freshmen who were in the top 15% of their high school graduating class.

Barnum-Everett Scholarships established by a bequest from Lena Barnum-Everett for worthy and needy students.

Central United Methodist Church Scholarship, given annually from funds provided by the Central United Methodist Church of Stockton to provide assistance for students entering full-time Christian service or similar Christian vocations.

Chevron USA Merit Award, in recognition of achievement in the classroom, the school and the community.

+ **Robert L. and Lucy S. Colthart Scholarship**, created by the estates of a 1929 Pacific graduate and his wife.

Corporate Patrons of Pacific, funded by gifts from companies on an annual basis. These gifts provide scholarship support to students in each of the eight schools as selected by the donor companies.

Disabled American Veterans Charities Board of San Joaquin County Scholarship, awarded annually to students who are legal relatives of veterans.

Mildred Woodward Graham Scholarship Fund of the National Society of Colonial Dames XVII Century, for graduate students.

Farmers Insurance Group, awarded to second, third or fourth year students enrolled in business, insurance or mathematics programs.

Graham-Ulth Scholarship for entering freshmen students who are graduates of high schools in San Joaquin County.

George H. Mayr Educational Foundation Scholarships, to students who are residents of California.

Robinson A. McWayne Memorial Scholarship, established in memory of a Pacific student from Hawaii. Awarded to needy and deserving students with preference given to students from Hawaii.

Catherine Austin Mueller Trust, established by an alumna of the class of 1937 for the benefit of needy and deserving students.

Pacific Telesis Foundation Scholarship, awarded to incoming freshmen who plan to enter the field of education as teachers, counselors, coaches, librarians, etc.

Patrons of Pacific Scholarships, are provided by alumni, parents and friends of UOP in their name or that of someone they wish to honor.

Mabel Wilson Richards Scholarship Fund, awarded to worthy and needy women from Los Angeles County.

Shimonek Scholarships were established by the wills of two brothers, Frank and Joseph Shimonek, to assist needy young men and women who require financial assistance to obtain a college education.

United Methodist Scholarships, awarded by the Board of Higher Education and Ministry of the United Methodist Church to qualified members of the Methodist Church upon recommendation from the Financial Aid Office.

School and Departmental Scholarships

Scholarships are granted from the list which follows to applicants in given schools or departments. The applicant will indicate his or her area of interest through choice of a college major. Applicants not meeting conditions for one of these awards will be considered for one of the general scholarships listed above. Endowed school or departmental scholarships are indicated by an asterisk (*).

College of the Pacific

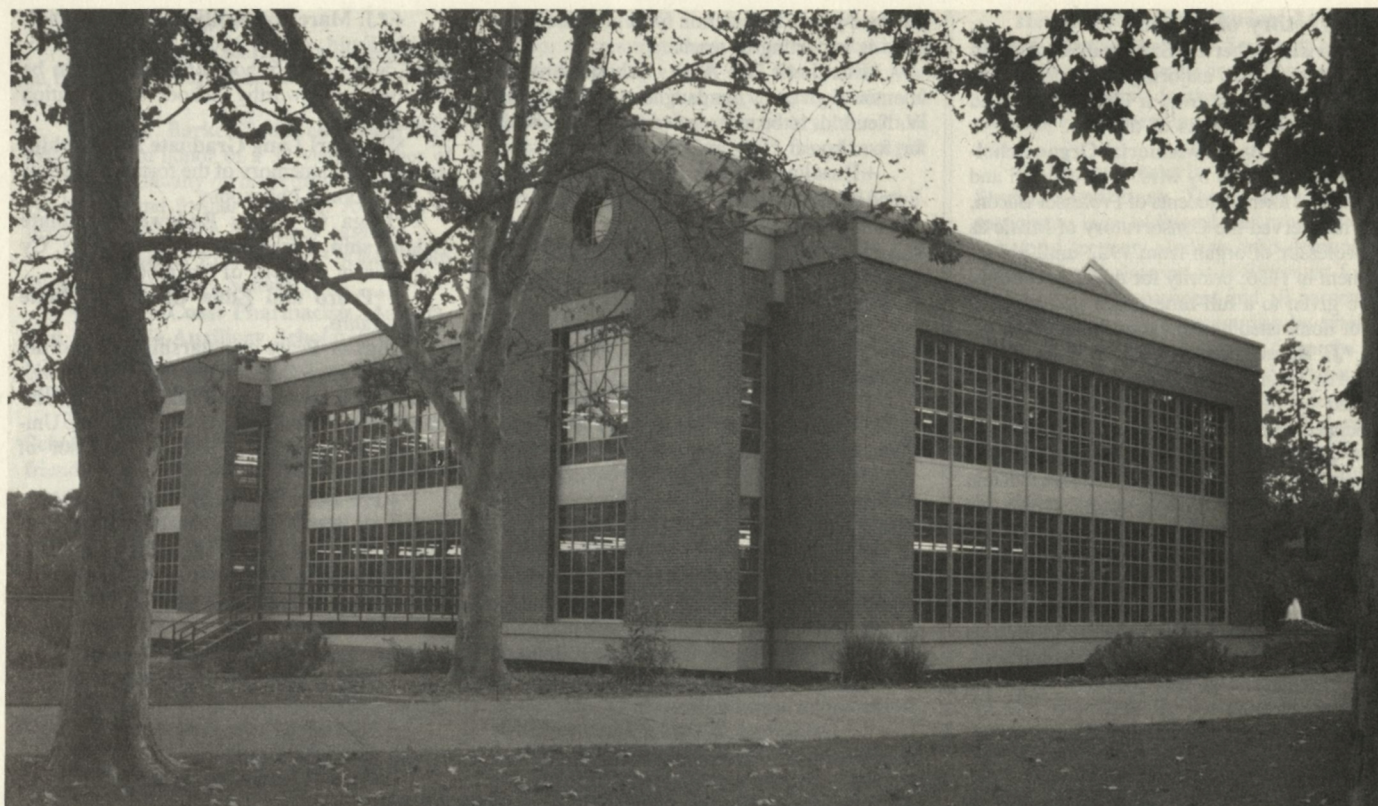
Art Award Endowment Fund, awarded to art students in recognition of talent, achievement and service. Established by sale of University art holdings and by gifts from Friends of the Art Department.

***Gertrude Sibley Billard Memorial Scholarship**, established in memory of a former professor of English in College of the Pacific, and awarded to a Spanish major.

+ ***Frank Black Memorial Scholarship**, established in memory of a former pre-medical chemistry student to aid academically qualified pre-medical students majoring in chemistry.

***DeMarcus Brown Scholarship Fund in Theatre and Drama**, established by Elinor Sizelove Canedy, class of 1944, in honor of the emeritus drama chairman.

+ ***Emerson and Edith Cobb Chemical Education Fund**, established by faculty, alumni and friends in honor of the long-time chair-



man (1948-78) of the Chemistry Department and his wife, for the benefit of chemistry students.

Drama Grants, awarded upon recommendation of the Chairperson of the Drama Department.

+ **Fred J. Early, Jr., and Marquerite C. Early Science Research Scholarship**, awarded to an undergraduate student who has demonstrated outstanding research production in chemistry, biology, physics or mathematics.

+ **Fallon House Theatre**, stipends awarded by the Drama Department.

Forensics Grants, awarded upon recommendation of the Forensics coach.

Fresno Methodist Foundation Scholarships, established in 1970 by transfer to the University of the Foundation's assets. Awarded to religious studies students.

+ **Ralph Guild Endowed Communication Scholarship Fund**, established by Ralph Guild, radio major, class of 1951 and president of INTEREP National Radio Representatives in appreciation to the University and Professor John Crabbe. Awarded to a communications major demonstrating an interest in a radio career.

+ **Kathryn Gehlken Howe Memorial Fund**, established by Edna Gehlken, former chair of the Home Economics Department, in memory of her sister. Awarded to art students on the basis of demonstrated ability.

+ **Sharon Brookhart Krakora Endowed Scholarship Fund**, established by gift of her

husband as a loving tribute to her lifetime achievements. Restricted to women students, U.S. citizens, who are partially self-supporting and not engaged in health science or other professional studies. Preference given to math students.

+ **James N. Martin Classical Scholarship**, for students with highest academic achievement in classical language in the academic year.

Malcolm H. Moule History Scholarship, established by his family in honor of an emeritus professor of history.

+ **Charles B. Norman Economics Scholarship**, named in memory of Dr. Charles B. Norman, who taught economics at Pacific for 32 years.

Walter Arville Payne Memorial Scholarship, established by family, colleagues, friends and former students in memory of a long time member of the history department faculty. Awarded for meritorious scholarship to upper division history majors maintaining a GPA of 3.0 or better.

+ **Lincoln and Stella Richardson Ruggles Memorial Scholarship**, established in memory of her parents by Lottie Ruggles and later supplemented through her will.

+ **Karma Cundell Schad Scholarship**, established in memory of a former art student by her husband. Awarded on the basis of academic achievement and extracurricular activities to an art student who is an American citizen, with preference given to students from Louisiana.

+ **Dr. Benjamin Smith Memorial Scholarship**, established by relatives and friends in recognition of this former Lodi-Stockton minister who was the recipient of an honorary degree from Pacific in 1937, to be used for liberal arts students in College of the Pacific.

+ **Derek Forbes Stewart Memorial Scholarship**, established by his family and friends in commemoration of his life, for the encouragement of worthy students majoring in drama who show promise as a performer, writer, technician, producer, director or composer of original music in support of drama.

Esther Myers Umhalt Class of 1918 Scholarship, for needy and deserving students enrolled in College of the Pacific. Established by a bequest from Esther Myers Umhalt, Class of 1918.

+ **G. Warren and Ruby Zahn White Memorial Scholarship**, established in memory of Professor White, who taught mathematics and business courses at Pacific for 44 years until his retirement in 1966. Scholarship is given annually to deserving mathematics students.

+ **Marjorie Webster Art Endowed Scholarship Fund**, established by The C. A. Webster Foundation to be used for a financially needy art student.

Paul Winters Scholarship Endowment Fund, established by former students to honor Professor Paul Winters long-time debate coach on the occasion of his retirement. Awarded as MERIT scholarships to forensics students.

Conservatory of Music

Marietta Atherton Endowed Scholarship Fund, for students majoring in music. Established by a bequest from a University friend and Stockton patroness of the arts.

+**Allan Bacon Memorial Organ Scholarship**, established by Mrs. Allan Bacon and friends and former students of Professor Bacon, who had served the Conservatory of Music as its professor of organ from 1922 until his retirement in 1956; priority for this annual award to be given to a full-time organ performance major nominated by the Conservatory faculty.

+**J. Russell Bodley Scholarship**, established by former students and friends and augmented by memorial gifts. Dr. Bodley was associated with Pacific for over 60 years as student, faculty, Dean of the Conservatory and Emeritus Dean. In 1986, the American Cinema Awards Foundation made a special gift to this fund in honor of actress Janet Leigh, one of his former students. The scholarship is awarded to a member of the Pacific Singers.

+**Alix E. and Horace I. Brown Award for Excellence**, established in memory of these music professors and to be awarded to candidates of musical excellence in cello, violin and viola.

+**Burland Scholarship**, given by Mr. and Mrs. Edward G. Burland in memory of their daughter, Roberta Burland, for the student of music deemed most worthy by the faculty of the Conservatory of Music.

+**Conservatory Excellence in Performance Scholarships**, awarded to talented performers of outstanding ability. These awards are NOT based on financial need, range from \$1,000 to \$5,000 a year and are renewable. Priority consideration is given to meritorious string students.

+**Elford-Roy Scholarship**, established by Mr. and Mrs. Robert Elford in honor of their parents, to be awarded to Conservatory students, preferably organ majors.

+**P. Maddux Hogin Memorial Scholarship**, established by bequest from Gwen Hogin, in memory of her husband, a '37 alumnus, for the purpose of assisting students majoring in music.

+**Gladys Thelma Ryan King Scholarship**, established by her bequest.

+**Virginia Short McLaughlin String Scholarship**, for students of stringed instruments, established by friends and relatives in honor of a UOP emeritus professor of music history and augmented by memorial gifts.

+**Dr. Lawrence H. McQuerrey Endowed Memorial Scholarship Fund**, established in memory of this former Music Education professor and chairman of the department, with gifts from his family, friends, colleagues and students. Awarded to upper division students majoring in Music Education.

+**Edna B. Meyerholz Music Scholarship**, established by the bequest of Mrs. Meyerholz, Class of 1911. Awarded on the basis of ability and need.

+**Presser Foundation Scholarship**, given

by the Presser Foundation for a music student who is expecting to teach.

+**Elizabeth E. Rice Scholarship**, a memorial given by her daughter, Mrs. Marion V. Neufeld, to be awarded annually to a third- or fourth-year Conservatory student.

+**Rosalie C. Rohr Scholarship**, established by her estate for deserving music students from Santa Rosa, California.

+**Bernice L. Rose Endowed Music Scholarship**, established by a 1925 alumna of the Conservatory of Music.

+**Margaret Michael Saladana Conservatory Fund**, to be awarded to female voice students.

+**Mildred Murphy Scott Scholarship**, for a student in the Conservatory of Music, given by Oliver D. Scott in honor of his wife.

+**Faye Spanos Endowed Scholarship**, established by her children and proceeds from the Faye Spanos Concert Hall dedication benefit, in honor of the wife of Alex G. Spanos, UOP Alumnus and business leader. Scholarship awards for students attending the Conservatory of Music.

+**C. A. Webster Foundation Stringed Instrument Scholarship**, for outstanding students of violin, viola or cello.

+**Judith and Walter Willmette Music Scholarship Fund**, established by Judith and Walter Willmette to provide scholarship aid to deserving students with meritorious musical talent and ability, rather than financial need. Selection by the Dean of the Conservatory.

+**Conservatory Endowed Scholarships**, awarded annually at the discretion of the Dean of the Conservatory.

+**Conservatory Young Musicians Endowed Scholarships**, awarded to young musicians in the Conservatory of Music with outstanding talent. Established by a gift from Mrs. Eva Buck.

+**Music Grants**, awarded upon recommendation of the staff of the Conservatory and based on auditions held annually in January.

School of Education

+**Esther Berchtold Endowed Scholarship**, established by this alumna, class of 1926, for students planning careers in teaching with priority consideration to women entering elementary education.

+**Thomas "Cy" Coleman Memorial Scholarship**, established in memory of the former professor of Educational Administration.

+**Congress of Parents and Teachers**, for an upper division or graduate student training to teach special education in the public elementary schools of California.

+**School of Education Graduate Scholarships**, for part-time graduate students who are candidates for an advanced degree and/or who are seeking advanced credentials, upon recommendation of the School of Education.

+**J. W. Harris Scholarship Fund**, established in memory of the former dean of the School.

+**Andrew P. Hill Graduate Scholarships**.

+**J. Marc and Ruth P. Jantzen Scholarship Fund**, established in honor of the retired dean of the School of Education, to be awarded to a worthy School of Education student.

+**Dr. Carl Lang Graduate Scholarship**, established in memory of the former professor of Educational Philosophy.

+**Hilga G. Lister Endowed Graduate Scholarship**, established by Dr. and Mrs. Cy Coleman in memory of her mother.

+**Pedro and Edna Osuna Graduate Scholarship**.

+**Marion Pease Scholarship**, for worthy and needy upper division students involved with intercultural and interracial education, established by several local groups in honor of the University of the Pacific emerita professor of education.

+**Phi Delta Kappa Scholarship Fund**.

+**Willis N. and Viola Potter Scholarship**.

+**Janet Rose Baker Robinson Scholarship Fund**, established by bequest from a 1936 School of Education graduate. Preference given to students in the School of Education.

+**Victor Russell Robinson Graduate Scholarship**.

+**Barbara Ratto Rosemond Memorial Graduate Scholarship**.

+**Donald R. Sheldon Memorial Scholarship**.

+**J. A. and Mary Thomason Graduate Scholarships**.

+**Rebecca L. Troutner Memorial Endowed Scholarship**, given in memory of a 1985 School of Education graduate, an elementary school teacher who died in an automobile accident, by family, friends and faculty. Awarded to students training to work with gifted children.

+**Milton M. Tyler Graduate Scholarship**, established in memory of the former special education professor by his family and friends.

School of Engineering

+**Gladys and John de Arrieta Engineering Scholarship**, established by an engineering graduate and his wife, both alumni, class of 1940. To be awarded to needy and worthy students who intend to enter the engineering profession.

+**Engineering Restricted Scholarship**, funded by memorial gifts and gifts from faculty and alumni.

+**National Action Council for Minorities in Engineering Grants**.

School of International Studies

+**Rom Landau Scholarship Fund**, established by Professor Landau through lifetime gifts and by his will, to be used to provide scholarship assistance for qualified students in the School of International Studies.

+**Joseph Robert Rupley Memorial Scholarship**, to be awarded to a student enrolled in International Studies with preference going to students of Inter-American Studies.

School of Pharmacy

***Gregory Bard, M.D., Scholarship Fund in Physical Therapy**, established in his honor by his wife.

Donald Y. Barker Endowed Scholarship, established in honor of a 32 year member of the School's faculty on his retirement by faculty, friends and former students. Awarded to needy and deserving Pharmacy students.

+ **California Pharmacists' Association Women's Auxiliary Scholarship.**

+ **Central Coast Pharmacists' Association Women's Auxiliary Scholarship.**

+ **Central Valley Pharmacists' Association Scholarship.**

***Charles T. Countryman Memorial Scholarship**, established by his family and friends in memory of this distinguished Pharmacy graduate.

***Ray and Ruby Dami Pharmacy Scholarships**, funded by bequest of Mrs. Ruby Dami.

+ ***Mabel and Charles P. Dezzani Scholarships.**

+ ***Jay Patrick Gould Memorial Scholarship**, established by friends and family, to be awarded to a deserving pharmacy student.

+ **Kappa Psi Fraternity.**

+ **Lambda Kappa Sigma Alumni Chapter Scholarship.**

+ **Lambda Kappa Sigma Outstanding Senior Women Award.**

***Muriel T. and Thomas J. Long Scholarship**, established by gifts from the co-founder of Long's Drug Stores and emeritus Regent of the University.

Thomas J. Long Pharmacy School Endowment, for needy and deserving baccalaureate and doctoral candidates. Funded by a portion of the income from an endowment created by the donor.

***Charles Magnasco Memorial Pharmacy Scholarship**, awarded to a member of the Phi Delta Chi Fraternity. Endowed by Andrew Magnasco, in memory of his brother.

+ **Gerald A. Miller Memorial Scholarship.**

+ **Phar-Mrs. Club Scholarship.**

+ **Phi Delta Chi Fraternity Scholarships.**

+ ***E. E. Roscoe Memorial Scholarship.**

+ ***Helen Rowland Scholarship.**

***Warren J. Schneider Endowed Memorial Scholarship Fund.**

+ **Tri-County Pharmacists' Association Women's Auxiliary Scholarship.**

***Richard C. Vessey Memorial Scholarship Fund**, established by his family and augmented by gifts from his friends in memory of this 1975 School of Pharmacy graduate.

+ ***Bryant Kerry Wong Scholarship.**

School of Business and Public Administration

Coopers and Lybrand Scholarship.

Joseph Kaeslin Memorial Scholarship

Award, for needy and deserving sophomore, junior or senior students majoring in business and maintaining a GPA of 3.0 or better, who have demonstrated energy, enthusiasm and initiative. Established in memory of a local business leader and University friend by a gift from his widow.

***Security Pacific Foundation Scholarship.**

The William Sweigart Accounting Scholarship, established by a 1964 alumnus for a male and female student of accounting.

Intercollegiate Athletics

+ ***The Ellen L. Deering Athletic Scholarship**, established by bequest to assist a deserving participant in a major sport.

***Jessie Murphy Grogan Memorial Softball Scholarship Fund**, established in her memory by her family and friends, for the benefit of women softball players.

***Chris Kjeldsen Memorial Fund**, contributed in honor of an alumnus and long-time member of the University faculty for an upper division man who meets the conditions of leadership, character, athletic achievement, scholastic competence and need.

+ ***Tunney McClendon Memorial Tennis Scholarship**, was established by her husband, Dwayne McClendon, and her many friends in loving memory of her life and love for the game of tennis, to award an annual scholarship to the number one seeded women's tennis player meeting the requirements of the UOP tennis team.

+ ***Warren T. McNeil Memorial Athletic Scholarship**, to be used to establish and maintain scholarships for students who participate in intercollegiate athletics.

***The Chuck Verduzco Memorial Scholarship**, to be awarded to graduate students who have earned varsity letters during their undergraduate years.

+ **Athletic Grants**, will be awarded to qualified candidates according to the regulations of the Pacific Coast Athletic Association.

Student Loan Funds

Information concerning loans may be obtained in the Office of Financial Aid. These loan funds may be used for the payment of tuition, fees, board and room and other related educational expenses. They are described briefly in the following paragraphs.

Perkins (formerly called National Direct Student Loans) Loan. This federally-sponsored program provides 5 percent loans for students who demonstrate high financial need. Maximum loan amounts vary depending upon available funds.

Health Professions Student Loan. This federal program provides 5 percent loans for University students in the professional programs of pharmacy and dentistry. Maximum loan amounts vary depending upon available funds.

Stafford (formerly called Guaranteed Student Loan) Loan. The federal government participates in an additional loan program which is helpful to many students who demonstrate financial need. Interest is at 8 percent for the first 4 years of repayment and 10 percent for the next 6 years. Repayment may be extended over a 10-year period, beginning 6 months after the student ceases to be enrolled at least half-time. Freshman and sophomore students may be eligible to borrow up to \$2,625 during a year, juniors and seniors have a limit of \$4,000 a year, and graduate or professional students \$7,500 a year. The loan funds are provided through commercial lenders; however, the UOP Financial Aid Office determines eligibility and provides application forms.

Supplemental Loans for Students and Parent Loans for Undergraduate Students. The loan limit is \$4,000 per year, interest is variable with a ceiling of 12 percent, and repayment may be for up to ten years. Parent borrowers begin repayment of principal and interest within 60 days of loan disbursement. Student borrowers may capitalize interest or make interest payments while in school.

Methodist Student Loan Fund. A limited number of students who are active members of the United Methodist Church may obtain loans from the Student Loan Fund administered by the Board of Education of that church. Information may be obtained from the University Financial Aid Office.

Emergency Loans. Loan monies provided through the generosity of United California Bank, The Jones Foundation of Los Angeles, and other interested benefactors and friends of the University are available through the University Loan Fund to meet pressing obligations. Loans from this source are limited to \$150. Repayment in full is expected within 90 days, or the end of the semester, whichever comes first.

Emergency Loan Funds for students from the School of Pharmacy have been provided by the following:

California Pharmacy Foundation Trust Fund, Inc., the John W. Dargavel Foundation, the Synergex Loan Fund, Pacific Pharmacy Associates Perpetuating Loan Fund and the School of Pharmacy Memorial Loan Fund: *Frank Bollig, Claude L. Busick, Charles Fox, Edna E. Gleason, Fred C. Mahler, Harold McAnaw.

*Individuals who have contributed to this Memorial Loan Fund.

Tuition and Fees

The University of the Pacific is an independent institution. On the Stockton campus each student is charged a tuition fee which covers about three-fourths of the cost of services furnished by the University. The balance of these costs is met by income from endowment and by gifts from regents, parents, alumni and other friends who are interested in the type of education which this institution provides. (See School of Dentistry and School of Law for appropriate information).

Overall Costs for the School Year

The annual expenses of a student at the University of the Pacific will depend on a variety of factors. Basic expenses are as follows:

Tuition* per school year, 1991-92 permitting enrollment for 12 to 18 units in each		
	Resident	Non-Resident
semester	\$14,160.00	\$14,160.00
Health Fee	195.00	195.00
Room and Board (in- cluding house fee)	\$5,100.00	
Student Activity Fee	105.00	105.00
McCaffrey Center Fee	20.00	20.00
Total, per school year	\$19,580.00	\$14,480.00
School of Pharmacy		
Annual Tuition (Eleven month program, three terms)	\$21,240.00	
*School of Dentistry and McGeorge School of Law tuition and fee schedules are available upon request from the Dean of Admissions.		

To these amounts should be added certain special fees such as application fee, matriculation fee, and special testing fees which are payable only once. A complete schedule of fees is available upon request at the Office of Admissions or the Business Office.

Expenses for books and supplies, special fees, and personal expenses will vary between \$1,565 and \$2,000 per year.

The University reserves the right to change fees, modify its services or change its programs at any time and without prior notice being given.

Tuition — Undergraduate and Graduate (per semester)

(Except Dentistry and Law)

Full Time (12 to 18 units)	\$7,080.00
Part Time (9 to 11 units)	
per unit	616.00
Part Time (½ to 8½ units)	
per unit	485.00
Excess units above 18 units,	
per unit	485.00
Engineering CO-OP (full-time)	
½ of the semester	
tuition rate	\$3,540.00

School of Pharmacy	
Full Time (12 to 19 units)	\$7,080.00
Part Time (9 to 11 units)	
per unit	616.00
Part Time (½ to 8½ units)	
per unit	485.00
Excess units above 19 units,	
per unit	485.00
Pharmacy Clerkship Rotation (full-time)	
¾ of the term	
tuition fee	\$5,310.00

General Fees

Fee for Auditors\$50.00 per class, subject to the instructor's permission. Auditing is not available in participation courses such as applied music, physical education, art courses of an applied nature, etc. The student must indicate a desire to audit the course at the time of registration on the registration forms.

Health Fee (income tax deductible as health insurance).....\$97.50
Required of all students who room or board on campus. Also required of all others, both graduate and undergraduate, taking 9 units or more, and optional for students taking ½ to 8½ units.

Student Activity Fee\$52.50
Required of all students who live in University residence halls and all undergraduates taking 9 units or more; optional for students with ½ to 8½ units.

McCaffrey Center Fee\$10.00
Required of all students taking 9 units or more.

Applied Music Fees

Private lessons* in piano, organ, harpsichord, voice, violin, viola, cello, string bass, guitar, flute, clarinet, oboe, bassoon, trumpet/cornet, tuba, trombone, French horn:
One ½-hour lesson per week\$ 70.00
Two ½-hour lessons per week\$140.00
Three ½-hour lessons per week\$210.00

Harp:
One ½-hour lesson per week\$100.00
Two ½-hour lessons per week\$200.00
Three or more lessons
per week\$300.00

Applied class lessons* in piano, harpsichord, harp, guitar: One unit applied music class lessons\$ 35.00

Applied music lessons must be arranged through the Conservatory Office. No refunds will be given for occasional absences due to sickness or other causes. Any appropriate refund of applied music fees will be considered from the date the student notifies the Conservatory Office that he/she is dropping. Such refunds will be granted on the pro-rated basis as determined by the Dean of the Conservatory to students who have withdrawn from such classes before the deadline as established in the

current schedule of classes. Practice room fees may be considered for a refund at the discretion of the Dean of the Conservatory.

Charges for Practice Rooms and Instrument Rental:

Practice room rental (required of all students taking applied music)\$10.00
Organ practice in auditorium, one hour per week (For advanced students only)\$ 7.50
Organ practice room rental\$15.00
Harpsichord practice room rental\$15.00
Bass, string, and woodwind rental, each\$15.00

*Private lessons and applied class lessons for non-music majors are available only if faculty loads will permit and must be arranged through the Conservatory Office.

Special Fees

(Partial List)

Matriculation Fee\$100.00
Transcript Fee\$ 2.00
Thesis Binding Fee,
per volume\$ 6.00
Late Petition Fee\$ 20.00
Late Registration Fee
1st & 2nd calendar dayNo charge
3rd & 4th calendar day\$ 15.00
5th through 10th
calendar day\$ 25.00
11th through 15th
calendar day\$ 50.00
After 15th calendar day\$100.00

Confirmation Deposit

A deposit of \$200 should be sent with student's confirming letter after having been notified of acceptance by the University. The deposit will be applied toward the student's tuition and is non-refundable.

Payment of Bills

Registration, when accepted by the University of the Pacific, constitutes a financial agreement between the student and the school. Tuition and fees of all students, including those whose tuition payments are on the monthly payment basis, become an obligation which is payable on the due dates as specified. Students failing to make payment as required will be unable to attend classes or use dining or dormitory facilities and are subject to late fees. No diploma or transcript of credit will be issued until the University bills have been paid in full.

Tuition and fees are payable at the time of registration. As a convenience, students may, if approved by the Business Office, pay tuition in monthly installments. Details of the monthly payment plan will be furnished by the Business Office on request. If a student withdraws or is

dismissed during the semester, all outstanding obligations become due and are payable on the termination date. Foreign students do not have the privilege of using the monthly payment plans during their first semester at school.

Refunds

Since faculty engagements and other commitments are made by the University for the entire year in advance, the following schedule has been established in order that the University and the student may share the cost equitably when it is necessary for a student to withdraw or to make a change in program:

Tuition: (Stockton Campus)

Withdrawals before classes begin No charge

Within first seven calendar days
of a semester \$100.00
(or 10%, whichever is less)

8th through 14th calendar day 80% refund

15th through 25th calendar day 60% refund

26th through 35th calendar day 40% refund

36th through 45th calendar day 20% refund

After 45th calendar day No refund

Board: 100% refund,
less daily charge for meals eaten.
No refunds after end of classes.

Room: No refund

Refer to School of Dentistry and School of Law for appropriate information.

Deferred Payment of Education Costs

For students and parents desiring to pay education expenses in monthly installments, low-cost deferred payment programs are available through nationwide organizations specializing in education financing, and statewide and local banks.

These plans include insurance on the life of the parent, total and permanent disability insurance on the parent, plus trust administration in event of the parent's death or disability. Agreements may be written to cover all costs payable to the school over a four-year period.

Parents desiring further information concerning these deferred payment plans should consult the Financial Aid Office or the Business Office.

Academic Regulations (Stockton Campus)

General Academic Procedures

Every student, in order to receive credit for coursework taken during a particular term, must be properly registered during that term. It is the student's responsibility to comply with this regulation.

The registration procedures are indicated in the time schedule which is available from the Office of the Registrar prior to the beginning of each term.

Student Programs of Study

Study Loads

Twelve units constitute a minimum full-time program of studies for the regular undergraduate and first professional level student and is the minimum required for participation in intercollegiate activities. If a student registers for less than 12 units or drops below 12 units, financial aid may be reduced. (Students who are less than half-time are not eligible for financial aid.)

The maximum study load for undergraduates and first professional level students without special permission is 18 units, (19 units for Pharmacy). Students who wish to enroll for units in excess of the maximum study load must petition for approval in advance. Approval is based to a great extent upon the student's past academic record and will result in additional fees.

Minimum and maximum study loads for graduate students are defined in the Graduate School Catalog.

Concurrent Registration

A. Concurrent enrollment in classes at the University of the Pacific and another institution is permitted only with the concurring approval of both institutions.

No such enrollment will be accepted during the session in which the student plans to complete the degree requirements.

B. Concurrent enrollment in a University of the Pacific undergraduate degree program and the Graduate School is permitted providing the undergraduate student accepts the following conditions:

- is in the last semester before receiving the bachelor's degree;
- has six or less required undergraduate units of work to complete for the bachelor's degree in that semester of concurrency;
- has applied to the Graduate School for concurrent status before entry into this last semester;
- has been recommended by the adviser and the Chairman of the graduate department in which graduate work is to be taken;

- has been approved before the term opens by the Dean of the Graduate School;
- enrolls in a combined undergraduate-graduate load of no more than a normal graduate study load;
- the privileges accruing from concurrent enrollment are null and void if the student does not graduate at the end of the specified term of concurrency;
- once a student has graduated, a retroactive request that units in excess of those needed for the bachelor's degree be counted as post-baccalaureate work will not be granted. Arrangements must be made prior to the term of concurrency and not during or after;
- the arrangements must be made in a written form through both the Graduate School and the Registrar's Office and have completed application procedures to the Graduate School for the degree and/or credential program prior to the opening of the concurrent term.

Students should understand that units earned during concurrent status and counted for post-baccalaureate credit here at the University may not necessarily be so counted by other universities or educational or industrial institutions.

Limitations on Credit

The maximum number of units accepted from a junior college is 64; however, no junior college credit will be accepted after a student has completed 64 units from all institutions attended, except possibly under the following conditions:

- that the courses are specifically required for the student's academic program;
- that the course to be taken in the junior college is not offered at the University of the Pacific or there is such an irreconcilable conflict that it cannot be taken at the University. Primary examples of the latter would be in the case of students who are enrolled in the University but working in an intern program in another city;
- that the number of units to be taken under these provisions should not exceed eight; and
- that a petition be submitted and approved by the Academic Regulations Committee prior to enrolling for these units.

A total of no more than eight units in physical education activity courses and intercollegiate athletic courses may be applied toward a degree, of which no more than four units may be in intercollegiate athletics.

A total of no more than 20 units may be applied toward a degree from any or all of the following: courses taken in accredited correspondence schools, extension correspondence schools, extension courses, and/or courses taken by examination. None of these credits, except extension courses taken at the University, will be accepted during the session in which the student is completing requirements for graduation in this University.

A total of no more than 30 units of course-work in business administration may be applied towards a degree, except in the case of students majoring in business administration who may apply up to 76 units of business courses toward the degree.

Bachelor's Degrees

To be eligible for graduation, candidates must have:

1. completed the major requirements specified by the school/college/departments with a minimum grade point average of 2.0. At least 16 units of the major requirements must be completed at UOP with a minimum grade point average of 2.0;
2. completed a minimum of 30 units with a minimum of three approved liberal learning courses in each category, with at least one course in each area;
3. met both entrance skills requirements;
4. achieved a grade point average of at least 2.0 on all letter-graded work completed at the University of the Pacific. On non-letter-graded work, the faculty will determine the equivalency;
5. fulfilled the minimum residence requirement of 32 out of the last 40 semester units of registration with UOP just prior to receiving the degree; and
6. accumulated the appropriate number of units specified by the particular school or college.

Any candidate for a bachelor's degree who has not completed work within seven years must

reapply and be subject to any new requirements in effect at that time. If a student holds a baccalaureate degree from the University of the Pacific and wishes to pursue a second bachelor's degree in a different specialty, a minimum of 32 semester units of work must be completed between receipt of the first and second degrees.

Withdrawals

An "official" withdrawal is normally granted to students who complete the withdrawal petition properly and turn it in to the Student Life Office prior to the last day for dropping classes for the term. Prorata refunds will be based upon the information indicated in the petition. Students who withdraw without filing such petition will jeopardize the prospects of receiving a refund as well as incur possible academic penalties. If a student wishes to withdraw from a term after the deadline for dropping classes the withdrawal must be approved by the Academic Regulations Committee. If approved, the courses the student was registered for will appear on that student's transcript with the notation "W" but will not count in the units attempted nor in calculation of the grade point average.

Changes in the Study Program

If the student desires to drop or add a course after filing registration material, a drop/add form must be completed, approved by the adviser and instructor, and filed in the Registrar's Office immediately. Such requests are usually

granted provided they neither increase nor decrease the number of units beyond the prescribed limits. Deadlines for dropping or adding courses are announced in the class schedule each term.

After the deadline dates have passed, requests to add or drop courses must be made by special petition and normally will be approved only if it can be shown that the request is warranted due to some special situation or hardship. Courses which a student is allowed to drop after the deadline will appear on the student's transcript with the notation "W" but will not count in the units attempted nor in the calculation of the grade point average.

Any petitions approved after the deadline dates will be subject to a clerical service fee. The date on which the petition is filed with the Registrar is the effective date for financial and academic adjustments.

Repetition of a Course

Only a course in which the student receives an "F," "D" or "D+" may be repeated. When such repeats occur, both the original grade and the repeat grade are averaged in the GPA although the student receives credit for the units of the course only once.

Credit by Examination

An undergraduate student in good standing and currently enrolled for four or more units may "challenge" by examination certain courses offered in the current term by the University.



Departments have the right to designate which of their courses are appropriate for credit by examination. This policy is subject to the following restrictions.

1. A student may challenge a course covering material in which, because of independent study since high school graduation or because of work at another college or university which was not accepted for transfer credit, the student feels prepared. It is the responsibility of the student to explain how the material was mastered.
2. A student wishing to challenge a course should not expect the instructor of the course to provide assistance beyond an explanation of the scope of the examination.
3. A student wishing to challenge a course may not attend the class meetings of the course.
4. A student may not receive credit by examination in the semester in which the student intends to receive his or her baccalaureate degree.
5. A student may not get credit by examination for a course which the student has already audited or failed with a grade of "F" or "NC".
6. A student may not get credit by examination for a course in a structured sequence if the student has received credit for a higher level course in the sequence.
7. Credit earned by a challenge examination may not be used to meet the University residency requirement.

A student wishing to pursue the credit by examination option must:

1. obtain the appropriate form from the Registrar's Office;
2. obtain approval from his or her adviser, the instructor offering the course, and the dean of the school or college offering the course, and
3. pay the scheduled service fee.

Successful completion of the examination will be recorded on the transcript with a grade of "Pass" and will be made a part of the student's academic record in the term in which the examination is requested. Appropriate tuition fees will be assessed.

Change of Degree Objective

A student who has been admitted to one degree program and who later desires to change the objective to another degree or to another college or school of the University must submit the appropriate request to the Registrar's Office.

Change of Major

A student who decides to change a major or to declare one must obtain the appropriate form from the office of the appropriate dean or from the Registrar's Office. Requests for these changes are routinely approved and are needed to assure the assignment of an adviser.

Class Attendance

Students are expected to attend classes regularly. Specific attendance policies are, however,

determined by individual instructors who will provide students with a written statement of such policies at the beginning of the semester.

At the request of a student, his/her instructors will be notified of absences due to illness, University related activities, or other conditions beyond the control of the student.

Grading Policies

Symbols and Definitions

Undergraduate and first professional level students will be assigned grades in keeping with the following provisions. (Grading policies for graduate students are defined in the Graduate School Catalog.)

A	= outstanding work, highly meritorious	4.0
A-		3.7
B+		3.3
B	= very good but not outstanding, better than average.	3.0
B-		2.7
C+		2.3
C	= average, standard performance	2.0
C-		1.7
D+		1.3
D	= barely passing but counts toward graduation	1.0
F	= failure. Will count in the grade point average. Must be repeated with a satisfactory grade to receive credit toward graduation.	0.0
I	= incomplete work due to extenuating and hardship circumstances which prevent the completion of the work assigned within the regular time of the term. Each incomplete grade assigned must be accompanied with a contract statement agreed to by both instructor and student as to:	
	a. what work remains to be completed	
	b. how it is to be evaluated	
	c. a time indicated for completion within but no later than the following deadlines:	
	for fall semester, by July 1 following;	
	for spring semester, by November 1 following;	
	for summer term, by January 1 following.	
	If work is not completed within these stipulated times, the instructor may wish to indicate a grade in lieu of the "F" or "NC" which automatically would be imposed with failure to complete the work. All incompletes must be made up before graduation if the student intends to complete the course.	
P	= passing work on the Pass/No Credit system. Approved only for certain courses and programs of a college or school.	
NC	= no credit recognition. Represents unsatisfactory work under Pass/NC option. Not assignable in the Conservatory of Music.	

Pass/No Credit Grading System

Depending upon the regulation of a particular college or school, students may request to receive pass or no credit grades rather than the

traditional letter grades. This is available to encourage enrollments in courses outside the student's area of major or specialization and thus to help broaden the student's general education.

Normally this freedom is limited to one course per student per term and does not include courses within a student's major field. Forms are available in the Registrar's Office and must be submitted prior to the deadline for adding classes.

Scholastic Actions

Dean's Honor Roll

Each undergraduate student currently enrolled in the University of the Pacific who achieves a 3.5 grade point average at the close of a term in which twelve or more units of letter-graded ("A" through "F") work have been completed will be declared as being on the Dean's Honor Roll for that term. A notation will be indicated on the student's academic record of this achievement.

Graduation Honors

The determination of Honors at Graduation will be made by each college or school in conjunction with the approval of the Committee on Academic Affairs.

Probation and Disqualification

In order to remain in good academic standing, students must maintain a "C" average (a grade point average of 2.0 on a four-point scale) in all letter-graded college work attempted at the University of the Pacific. This means that the student must at all times have a total number of earned "grade points" equal to at least twice the number of letter-graded units attempted while at UOP. Several professional schools on campus have the further requirement that the student must maintain a 2.0 average or higher on courses required in the major program.

Whenever a student drops below a 2.0 on either of these GPAs, the student will be placed on academic probation for the following term and will be notified of this deficiency and its academic consequences. Probation is a warning of academic difficulty but does not interfere with a student's pursuit of future studies at the University. However, students may not register for Independent study while on academic probation.

A student whose grade point balance falls to -10.00 or below will be subject to being disqualified from further study at the University. Disqualification decisions usually will be made at the end of the spring semester, but a student who begins the fall semester already on probation with a grade point deficiency of -10.00 or more may be disqualified at the end of the fall term if still at -10.00 or below at the end of that term. A student who has been disqualified will not be allowed to register for further study at the University during a regular term while in disqualified status, but may attend the "open enrollment" summer sessions.

A student who has been disqualified may appeal immediately for reconsideration and possible reinstatement on probation within the same school or college or in another school or college of the University. A disqualified student who has been out of the University for one semester or more may apply for readmission to the University through the Admissions Office. If readmitted, such a student would enter on academic probation and would need to make up the earlier deficiency in order to attain good academic standing.

Residence Requirement

The minimum residence requirement for a bachelor's degree program is 32 out of the last 40 units of registration in the University of the Pacific just prior to receiving the degree. Normally these 32 units must be taken on the Stockton campus, but study in UOP-affiliated programs elsewhere in the United States or abroad may count toward the residency requirement if the student has taken at least 32 units on the Stockton campus at the time of graduation. The school or college from which the student is to graduate may stipulate that the units in residence must include certain specific requirements in the major program and/or a certain minimum of units within the school or department of the major.

Application for Graduation

An application for graduation activates a student's file for graduation evaluation. It should be filed with the Registrar's Office no later than October 1 by any student expecting to fulfill degree requirements in any session prior to September 1 of the next calendar year. This allows time for a review of studies completed and to enable the students to enroll for any requirements not yet completed. Certification for actual graduation will be by the adviser and the faculty of the college or school.

Students may graduate at the end of the fall semester, end of the spring semester, or end of the summer sessions, but graduation ceremonies are held only once a year in May. Students who will complete their baccalaureate degree requirements during the following summer may request by petition to participate in the May commencement ceremonies.

Records and Transcripts

An academic record for each student is maintained in the Registrar's Office. This official record is considered to be both private and confidential. It is used in the conduct of the student's personal and academic affairs.

Upon written request by the student, an official transcript of his or her academic record is issued to whomever he or she designates provided that all of the student's financial obligations to the University are in order. A service fee of \$2.00 per transcript is charged for processing the record.

Official transcripts of credit earned at other institutions which have been presented for admission or evaluation of credit become the property of the University and are not reissued or copied for distribution to other institutions. Copies of transcripts of work completed at other institutions must be obtained from the originating institution.

Class Standing

Undergraduate students will be designated freshmen, sophomores, juniors or seniors by the number of units which have been completed toward graduation as follows:

- 1 — 27½ units is a freshman.
- 28 — 55½ units is a sophomore.
- 56 — 91½ units is a junior.
- 92 — up units is a senior.

Student Life

Of a university student's education, much can take place outside the classroom. For this reason, the University of the Pacific has made a commitment to the education of the whole person — the student's intellect, emotions, values and ethics. The implementation of this philosophy manifests itself in a wide variety of services and programs which are designed to assist the student in achieving educational and personal goals.

Division of Student Life

The fundamental responsibility of the Division of Student Life is student development. The Division is under the direction of the Vice President for Student Life. Through its departments, programs and services, its purpose is to address the education of the whole person and to augment and enrich university life. The Office of Student Life serves as the central office for the Division. The resources of this Office as well as all other departments in the Student Life area have a staff that is concerned and interested in students and are an accessible and ready means of assistance and support for all UOP students.

Residential Life

Central to student life at UOP is the University residence system. Consisting of 12 residence halls, five fraternities, four sororities, and three apartment facilities, the residence system provides living accommodations for approximately 2,200 students.

University residence halls are coeducational, where men and women reside within the same facility. One area is reserved for restricted housing for women students who desire that option. All students living in the residence halls and some fraternities are required to purchase a meal plan.

Some residence halls as well as the University apartments are reserved for students of a particular standing. For example, Ritter House and the University Townhouse Apartments are limited to sophomores and above, and the McCaffrey Center Apartments, located in the heart of the campus, are reserved for students of junior, senior or graduate standing. Residence within the fraternity and sorority system, with some exceptions, is limited to the membership of the organization. All University-operated residence communities are staffed by and responsible to the Residential Life and Housing Program.

Housing assignments to the residence halls and the apartments are made by the Office of Residential Life and Housing. Students already enrolled apply directly to the office. Upon acceptance to the University, an applicant will be sent a housing application and more detailed information. Any confirmation of housing is dependent upon an applicant's prior approval for admission.

The University does have a residential living requirement for freshmen and sophomore students. Please refer to the policy statement on page 23.

Health Services

The Cowell Health Center is a large modern facility with a professional staff of physicians and nurses.

Students are provided with wellness care and health education in addition to complete health care during illness.

Twenty-four hour infirmary care is also available with nurse clinicians on duty 24 hours a day, 7 days a week, during regular semesters.

Physicians from the community are scheduled on a regular basis by appointment, including internal medicine, gynecology, orthopedics, podiatry, dermatology and family practice specialists.

Following the approval of a student's application for admission, a health form is sent which must be completed and returned by the applicant. A medical history, physical exam, and immunization record of the student must be on file with the Health Center. In accordance with California State law, this information is confidential.

The Cowell Student Health Center is supported through the payment of a student health fee which is required of all students enrolled for 8½ units or more.

A low-cost "group accident and sickness" insurance program is available to all students on the Stockton campus. This covers all types of activity both on and off campus and during vacation periods in addition to when the University is in session. Unless covered by another health insurance program, it is strongly recommended that students subscribe to this program. Details of cost and coverage are available at the Finance Center.

A non-profit clinical pharmacy is operated in conjunction with the School of Pharmacy

under the supervision of registered pharmacists. Doctors' prescriptions are filled, and various medical preparations and supplies are available for the students and faculty members.

Counseling Services

The Counseling Center provides individual and group counseling and support to students who may be experiencing situational, psychological or interpersonal difficulties. As well as identifying and working with students personal concerns and problems, support group and special topic workshops are offered. Personality and vocational testing is available as well as substance abuse education and counseling, premarital/marital counseling, relationship counseling, vocational counseling, stress/time management and crisis intervention. Psychiatric consultations can be arranged as well as limited medical management of psychotropic medications.

Career Planning and Placement Service

The Career Planning and Placement Center provides services that facilitate career decision-making and goal-setting for students at all academic levels. The process begins with students seeking career planning information. Career Planning and Placement provides one-on-one and group counseling through the Career Focus Program. As students progress, Career Planning and Placement assists with the development of skills required to obtain co-op, intern, part-time or summer jobs. When senior year arrives, Career Planning and Placement assists those seeking to attain post-graduation education and employment goals. Career Planning and Placement annually sponsors and coordinates an on-campus recruiting program with over 100 companies visiting the University each year, a career faire, a regional pharmacy employment interview program, and an educators recruitment day in addition to a variety of workshops, seminars, and special programs.

International Services

The Office of International Services provides support, assistance and oversight to a foreign student population of over 250 from 50 countries. Foreign student advising in areas of personal and cross-cultural adjustment, immigration regulations, financial exigencies and problem solving within the context of the University and the community is available on an individual basis. In addition, the office holds a special foreign student orientation program at the beginning of each semester and sponsors a variety of information sessions, intercultural educational programs, language assistance programs and social activities throughout the year. The director also serves as adviser to the International Students Association and liaison to community organizations interested in meeting with foreign students.

McCaffrey Center

The Stanley E. McCaffrey Center, completed in 1975 and named after the University's 21st President, Stanley E. McCaffrey, is the focal point for student activities programming on the campus, as well as a meeting place for students, faculty and staff. It's a place to enjoy a meal, see an art show, or attend a lecture.

Facilities of the McCaffrey Center include a theatre, a lounge/games room, meeting rooms, photocopy center, a gallery, the University Bookstore and Computer Store, three separate dining facilities, a grocery store and the offices of the ASUOP and UPBEAT (the Associated Students Board).

Programs in the McCaffrey Center are sponsored by UPBEAT, a group of students who develop programming in such diverse areas as nightclub entertainment, outdoor programs, the arts and recreation. These programs, together with other student activities and events, add to the co-curricular needs of Pacific students.

Art Galleries

The U.O.P. Gallery, located on the second level of the McCaffrey Center, is used to exhibit work of prominent Northern California artists and exhibitions of special interest. The Gallery is supported by the McCaffrey Center. Hours for the Gallery are Monday through Friday, 9:00 a.m. to 8:00 p.m., Saturday and Sunday hours are 2:00 p.m. to 8:00 p.m.

The Richard H. Reynolds Art Gallery — A professional art exhibition gallery featuring noted regional and national artists. The exhibition program is closely correlated with the Art Department's academic goals and features guest artist lectures/demonstrations. The gallery is located in the Art Center, Quonset 6.

Disabled Student Enabling Services

An enabling service is administered through the Office of Student Life. Any disabled applicant for admission or disabled student is encouraged to discuss his/her needs for accommodation that will make it possible to participate in programs offered by the University.

The University has some disabled student housing and will arrange for the reasonable modification of facilities, programs or scheduling that will facilitate a disabled student's participation in academic and social programs. Other forms of assistance will also be provided, including referrals to local agencies that serve the disabled.

Information is available upon request from the Office of Student Life.

Religious Life

The University offers students a variety of opportunities to deepen knowledge and under-

standing of their faith and to express commitment through worship and service. The University Chaplain guides religious life at UOP and serves as celebrant of Protestant worship in Morris Chapel. Denominational and other religious groups active on campus include Christian Science Organization, Hillel Jewish Students' Organization, Inter-Varsity Christian Fellowship (Methodist, Presbyterian, American Baptist, and United Church of Christ Ministries).

In greater Stockton itself, over 160 different churches, synagogues and other religious organizations can be found. Many offer classes and activities especially oriented to the student.

Campus Safety

The University is policed by the Department of Public Safety. The campus police are dedicated to the goal of maintaining the excellent academic environment that the University provides the student. The department provides many services which are designed to make the time spent on campus a pleasant and rewarding experience. Students are encouraged to avail themselves of these services.

Activities and Organizations

While giving primary emphasis to the goal of academic excellence, the University recognizes and encourages the role of extracurricular activities in the physical, social and spiritual growth of its students. There are a wide variety of religious, social, cultural and recreational activities.

Student Government. Students of the University are members of the Associated Students of the University of the Pacific (ASUOP). As the major student governance body, ASUOP is responsible for administering the Student Senate and student activities fees, providing social, cultural, and informational programs and activities, representing students on all major University committees, and managing a variety of student-run services such as the grocery store, annex, travel bureau and "Static Attic" Nightclub.

In addition to ASUOP, each school and college is separately organized into constituent school organizations, oriented to the pursuits and interests of their particular academic areas.

Intercollegiate Athletics, Intramurals and Physical Recreation. In addition to physical education activity courses, the University offers a broad range of athletic and recreational opportunities and facilities for both team and individual sports. Notable among the facilities are an Olympic-size swimming pool and the 6,000-seat Alex G. Spanos Center.

Students with athletic ability may participate in intercollegiate athletics. The University is a member of the Pacific Coast Athletic Association (men) and Northern California Athletic Conference (women). Men's sports include baseball, basketball, football, golf, swimming, tennis and water polo. Women's sports include basketball, field hockey, softball, swimming, cross country, tennis and volleyball.

The University offers a diverse program of competitive individual and team sports as well as organized recreational clubs. Participation in these intramural club sports and recreational activities is open to all students, faculty and staff. Many of the activities offered have coed participation. For further information concerning intercollegiate athletics, intramural activities and sports clubs, turn to the description in this catalog of the Department of Sport Sciences in the College of the Pacific.

Broadcasting. The University of the Pacific operates radio station KUOP-FM, the first West Coast university station to broadcast with multiplex stereo. With a 7,000 watt transmitter and master control atop Robert E. Burns Tower, KUOP-FM, at 91.3 megacycles, reaches Central Valley communities from Napa to Bakersfield. Through this broadcast operation, students have an opportunity to be "on the air" providing music, entertainment, information and news.

Drama and Dance. Highly rated among college production groups, University Theatre contributes to the cultural and entertainment life of the campus and community by presenting a regular season of plays and dance concerts in the Long Theatre and the DeMarcus Brown Studio Theatre.

The theatres are a laboratory for drama and dance majors but are open to all others by try-out. Credits applicable to degree requirements may be earned by approved participation.

Since 1949 the Department of Drama and Dance has operated the UOP Fallon House Summer Theatre at Columbia State Historic Park in the gold-rush region of Tuolumne County. A specially selected company is in residence for ten weeks and presents five shows in repertory. Audiences are drawn from throughout the West.

Forensics. Debate and other forms of competitive speaking are traditions at Pacific and are fields in which the University has attained national recognition.

In addition to attending the tournaments and conventions of speech organizations, forensics students make public appearances throughout the country. These speech experiences include debate, discussion-forum, extempore and impromptu speaking, after-dinner speaking, oratory, student legislative assemblies, and adaptation of these forms to radio.

Orchestra. The University Symphony Orchestra presents a full series of concerts each year on campus, performing with the Opera

Theatre and University Chorus and presenting a concert program with student artists. Orchestral performers may audition for membership in the Stockton Symphony Orchestra, one of Northern California's outstanding civic orchestras.

Band. Three bands are maintained during the school year. The Marching Band performs at football games; the Concert Band presents a yearly campus concert series; and the Varsity Band performs at home basketball games. A Wind Ensemble, the Conservatory's touring wind group, is comprised of students from the Concert Band to give advanced players an opportunity to perform challenging literature. In addition, the UOP Jazz Band performs several concerts throughout the year.

A Cappella Choir. As one of Pacific's most esteemed student organizations, the choir performs unaccompanied choir music, either secular or sacred in character. It maintains a campus concert series and travels for an extended tour throughout the West Coast each year. Membership is open to all students on campus by audition.

Publications. The *Pacifican* is an independent weekly newspaper, published by the Pacifician Publication Board. It is financed by student fees and advertising. Student-managed, this publication serves as a laboratory for those interested in journalism. The *Epoch* is a student-produced yearbook.

The major publications of the University include the *Pacific Review* and the *Pacific Historian*. The *Pacific Review* is published bi-monthly by the Office of Public Relations and is designed to inform alumni, parents, students and friends about the University, its people and its events. The *Pacific Historian* is a quarterly devoted to the studies of the American West and published by the Holt-Atherton Pacific Center for Western Studies.

Anderson Y. The Anderson Y Center has been with the University since its days in San Jose, California in the late 1800s. Today, the Anderson Y Center continues to provide an arena for the development and community service programs. Recognized as a leader in innovative programs on campus and in the community, the Anderson Y Center provides tutoring, mentoring and group recreation programs for younger students, Environmental Programs, Outreach, Training and Development as well as numerous special events and projects.

The executive director oversees the student manager and works with campus and community volunteers and the board of directors to provide continuity and professional resources to student-led programs.

The Anderson Y Center is a participating agency of the United Way and receives support from the City of Stockton, the Associated Students, the College of the Pacific Association and Campus Compact, the Carnegie Corporation, and the Napoleon Hill Foundation.

National Honor Societies

Alpha Epsilon Delta. Pre-medical honor society. Established 1960; reestablished 1981.

Alpha Lambda Delta. For freshmen with an academic average of 3.50 or more; local chapter established in 1960.

Beta Gamma Sigma. Honor society, established in 1986 recognizing outstanding scholarly accomplishment of those receiving their professional training in business.

Eta Kappa Nu. Established in 1982 for honor students in electrical engineering.

Mortar Board. For seniors winning recognition for scholarship and campus leadership. Founded as Knolens in 1949; nationalized in 1967.

Omicron Delta Epsilon. Honor society in economics. Established in 1977.

Phi Kappa Phi. Scholarship honor society for the upper tenth of each graduating class who have distinguished themselves, and for outstanding graduate students, alumni and faculty. Established locally in 1951.

Pi Delta Phi. Theta Chi Chapter, established in 1978 for honor students in French.

Pi Kappa Lambda. Delta Chapter, established in 1921 for honor students in music.

Rho Chi. Beta Omega Chapter, started in 1964 to promote pharmaceutical sciences.

Sigma Delta Pi. Delta Zeta Chapter, established in 1966 to promote interest in Spanish language.

Sigma Tau Delta. Phi Chi Chapter, established in 1988 to recognize and encourage outstanding achievement in English language and literature.

Tau Beta Pi. Engineering Honor Society — all engineering majors.

Recognition Societies

Alpha Phi Gamma. Alpha Delta chapter, chartered in 1931, for students displaying journalistic ability and achievement and meeting certain scholastic requirements.

Alpha Phi Omega. National service organization.

Beta Beta Beta. Omicron Chapter, established in 1931 for students meeting specific scholastic standards and completing a required amount of work in biology.

Delta Phi Alpha. Iota Iota Chapter, established in 1980 for honor students in German.

Order of Omega - Eta Omicron Chapter. Founded 1986. National society to recognize Fraternity and Sorority leadership.

Pi Alpha Alpha. National society for honor students in public affairs and administration.

Phi Kappa Delta. California Delta Chapter, established in 1922 for students in forensics.

Theta Alpha Phi. California Gamma Chapter, established in 1922 for students in theatre arts; recently re-activated.

National Professional Organizations

Alpha Chi Sigma. Chapter established in 1960 for chemistry students who intend to make some phase of chemistry their life work.

Delta Sigma Pi. Lambda Mu Chapter, established in 1984 for business majors.

Kappa Psi. Gamma Nu chapter, established in 1960 for male pharmacy students.

Lambda Kappa Sigma. Alpha Xi Chapter, established in 1959 for female pharmacy students.

Mu Phi Epsilon. Mu Eta Chapter, established in 1920 for students majoring in music.

Phi Delta Chi. Alpha Psi Chapter, established in 1956 for male pharmacy students.

Phi Delta Kappa. University of the Pacific Chapter, established in 1951 for persons in the teaching profession.

Phi Epsilon Kappa. Alpha Sigma Chapter, established in 1952 for men engaged in teaching, supervision and administration in health, physical education and recreation.

Phi Mu Alpha Sinfonia. Beta Pi Chapter, established in 1931 for male musicians.

Sigma Alpha Eta. Established in 1963 for students in speech and hearing therapy.

Student Affiliates of Professional Organizations

AIIESEC - International Association of Students in Economics and Commerce. Established in 1985 for students in International Management.

American Society of Civil Engineers Student Chapter. Open to all civil engineering majors, established in 1948.

American String Teachers' Association Student Chapter. Open to all students in string playing and teaching.

Institute of Electrical and Electronic Engineers Student Branch. Membership open to all majors in electrical engineering.

Public Relations Student Society of America. Open to students interested in public relations.

Society of Women Engineers. Open to both sexes but designed to encourage women in engineering.

Student Affiliates of American Chemical Society. Founded in 1954 for chemistry students.

Student Branch of American Pharmaceutical Association. University of the Pacific branch established in 1957 for pharmacy students.

Student Branch of California State Teachers Association. University of the Pacific Chapter founded in 1936 for students interested in teaching and other positions in education.

Student Chapter of American Marketing Association. Open to students interested in marketing and marketing problems and research.

Student Chapter of American Society of Personnel Administration. Open to students



who have had a class in organizational behavior.

The Guild Student Group of the American Guild of Organists. The University of the Pacific group chartered December 3, 1953.

The Student Member Chapter of Music Educators National Conference. Established in 1966 for students interested in teaching music.

Social Fraternities

Alpha Kappa Lambda. Omicron Chapter, founded in 1954.

Alpha Phi Alpha. Established in spring 1978.

Archania (Alpha Kappa Phi). Founded in 1854 as Archania Literary Society. Established as Gamma Upsilon Chapter of Phi Kappa Tau in 1961; reestablished as Archania in 1978.

Omega Phi Alpha. Organized in 1921; changed to Pacific Chapter of Delta Upsilon in 1959; changed back to Omega Phi Alpha in 1972.

Phi Delta Theta. University chapter established in fall of 1985.

Omega Psi Phi. University chapter established spring 1983.

Sigma Alpha Epsilon. Organized as Theta Tau in 1967; became Phi Alpha in 1968; established as California Rho Chapter in 1970.

Social Sororities

Alpha Kappa Alpha. Organized in 1978 as Mu Nu Chapter.

Alpha Chi Omega (Zeta Phi). Founded in 1936 as the Zetagean Club; established as Delta Sigma Chapter in 1961.

Delta Delta Delta. (Tau Kappa Kappa). Founded as Athenaea Literary Society in 1917; nationalized in 1959 as Phi Rho Chapter.

Delta Gamma (Epsilon Lambda Sigma). Founded as Emendia Literary Society in 1858; nationalized in 1959 as Delta Epsilon Chapter.

Delta Sigma Theta. Organized in 1974 as Lambda Tau Chapter.

Kappa Alpha Theta (Alpha Theta Tau). Founded as Sophotetica Literary Society in 1881; nationalized in 1959 as Phi Chapter.

Student Governance and Programming

Associated Students of the University of the Pacific (ASUOP). Associated Students of the School of Education (ASSE). Association of Engineering Students (ASE). Association of Pharmacy Students (ASP). College of the Pacific Student Association (COPA). Conservatory Student Senate (CSS). Interfraternity Council (IFC). Open Assembly of the School of International Studies (OASIS). Panhellenic Council (Panhell). Residence Hall Association (RHA). Student Association of the School of Business and Public Administration (SASBP). University College Student Association (UCSA). University Program Board for Educational and Amusing Times (UPBEAT).

Clubs and Organizations

Accounting Society. African-American Student Union. American Society of Civil Engineers (ASCE). Anderson Y. Asian Alliance. Association for Computing Machinery. Association for International Chinese Students (AICS). Association of International Management Students (AIMS). Associated Student of Engineering Management (ASEM). Badminton Club. Best Buddies. Beyond War. Cercle Francais. Christian Science Organization. Classical Connection. Community Involvement Program Student Association (CIPSA). College Life Christian Fellowship. Crew Club. Delta Sigma Pi. Drama and Dance Club of the University of the Pacific. Earth Now. English as a Second Language Organization. Gulf Students' Club. Hawaiian Club. Hillel Foundation - Jewish Students Association. Indonesian Club. International Association of Students in Economics and Commerce (AIESEC). International Student Association (ISA). Inter-Varsity Christian Fellowship (IVCF). Japanese Club. Korean Students Association. LaCrosse Club. Lambda Kappa Sigma. Malaysian Associated Students (MAS). Mortar Board, Inc.; Knolen's Chapter. M.E.Ch.A. - UOP. Men's Volleyball Club. Music Educators National Conference (MENC). Newman House. Pacific Council for Exceptional Children. Pacific Finance Association. Pacific Graphic Designers' and Artist Club. Pacific Model United Nations. Pacific Music Therapy. Phi Mu Alpha Sinfonia Fraternity. Public Relations Student Society of America. Radical Reality Christian Fellowship. Ski Club. Spanish Club. Society of Hispanic Professional Engineers. Society of Physics. University Macintosh User's Group (UMUG). Vietnamese Student Association. Weightlifting Club. Women's Soccer Club. Young Democrats.

Community Service

In addition to campus programs and activities, UOP students are also active volunteers for community agencies. They provide a variety of services to the community-at-large, coordinated by the Community Service and Volunteerism Coalition.

Pacific students tutor minority and culturally disadvantaged children in Stockton and surrounding communities. Some assist with and counsel for delinquent youths at nearby CYA institutions. Pharmacy students maintain a speaker's program on drugs and drug abuse for local schools and organizations.

Law students at McGeorge School of Law help working lawyers prepare defenses for indigent clients. Physical education majors teach swimming to the handicapped and work as recreational aides in institutions for the blind and mentally disturbed. Music students, too, use their special talents as therapy for mental patients, and Spanish-speaking students teach adult Mexican-Americans to read English.

Over the years, UOP students have been responsive to the needs of the individuals and communities around them. The focus of the service and interest may change, but the involvement will continue.

Traditional Events During the University Year

Homecoming. A day devoted to welcoming alumni back to the campus. Activities include a parade, football game and dance.

Band Frolic. For one weekend each year, skits, musical entertainment and talent acts by various living groups and individuals are presented. The event is held in the Spanos Center and has been organized on a competitive basis.

Honor System

All students on the Stockton campus will be expected, on applying for enrollment, to sign an honor pledge appropriate to the objectives and relationships of the University. Reconstituted by the Pacific Student Association in 1959, the Honor System calls each student "to exhibit in his or her university life a high degree of maturity and personal integrity." While the Honor System recognizes that its vitality "rests with each individual student as he or she chooses to be true to the honor spirit," a structure of controls and judiciary procedures to make the Honor Code effective is outlined in the Student Handbook.

Academic Standards for Holding Student Office

In order to hold either an elected or appointed office in the Associated Students of the University of the Pacific (ASUOP), the constituent schools, fraternal societies, residence halls, the UPBEAT Programs Council and the editorial staff of the *Pacifican*, a student must be registered for a full-time course of study (twelve units undergraduate, eight units graduate) each semester during which he/she holds office and must successfully complete the above minimum units each semester in order to continue in the position. Exceptions to this may be made for seniors in the final semester prior to graduation. Also, a student must maintain a minimum of a 2.0 GPA in all letter-graded course work attempted at the University of the Pacific as well as a 2.0 GPA cumulative minimum in all college work. In addition, specific policies of professional schools may stipulate that in order to hold student office, a student must maintain a 2.0 GPA minimum in the required courses of the major program. Major leadership positions in ASUOP requires a 2.5 GPA. Finally, a student may not be on disciplinary probation during the period of time which he/she holds office. Except for any professional school policy, exceptions to these standards may be considered by the Office of Student Life.

Residential Living Requirement

In keeping with its educational goals, the University considers the residential living experience as an important part of its educational opportunities. Fundamental to this is the knowledge that such an experience can contribute significantly to a student's development and to the learning process. The University, then, requires all students, with some exceptions, of freshman or sophomore class standing to live on campus. Information on exceptions, and the procedures for applying for exceptions to this policy, is available in the Tiger Lore, the Student Handbook.

General Campus Regulations

Rather than publish in this catalog a complete and detailed code of the laws, rules and regulations that students are required to follow, the University declares its intention to uphold all federal, state and municipal laws applicable and expects all students to maintain accepted standards of good citizenship. At the time of admission each student agrees to follow such standards. Accordingly, any conduct not consistent with responsible and/or lawful behavior may be considered cause for the University to take appropriate administrative, disciplinary or legal action.

In addition, the University acknowledges and actively upholds the adult status of each student with all the rights pertaining thereto and, in accordance with that status, considers each student responsible for his/her own actions.

Basic University policies and regulations are published in the student handbook and distributed to all new students. Statements pertaining to or clarification of student rights can be obtained through the Office of Student Life.

There are, however, five University regulations which should be noted here. They are as follows:

Alcoholic Beverages. The University reminds students that California law stipulates that only persons twenty-one years of age or older may possess and consume alcoholic beverages. This is State law and compliance with it is the student's obligation. Possession and consumption of alcoholic beverages on the campus is permitted provided that (a) it occurs in the privacy of the student's own living space (as determined by contract) or (b) at an activity which has been registered as a "student event at which alcohol will be served." Student events which include alcoholic beverages must be registered with the Office of Student Life unless the event occurs in a private living space and is limited to the contractees of that particular living space. Students may not possess or consume alcoholic beverage in any public University area, including the grounds. The sale or distribution of alcoholic beverages on University premises for money, for token in lieu of money, or by any other device which in fact constitutes sale is not permitted. Drunk and disorderly behavior is prohibited. The off

campus use of alcoholic beverages by individuals, groups or University organizations renders the individual or individuals involved responsible under local and state laws.

Drugs. The sale or distribution on or off University premises of drugs or other similar substances designated as illegal by state or federal law and the possession and use of such drugs on University property is prohibited and may be considered sufficient cause for dismissal.

Dangerous Weapons. The possession of firearms of all descriptions, including air powered weapons; firecrackers and any other exploding devices; and any instruments that can be construed as dangerous weapons is not permitted on University premises. The brandishment or use of such weapons on University premises shall be considered sufficient cause for immediate suspension pending an investigation. Residential students must arrange for off-campus storage of firearms intended for hunting or target practice purposes.

Pets. No pet of any kind may be kept or maintained on University grounds, with the exception of aquarium fish. Guide dogs are also excepted and must be on a leash. Animals for use in projects pertaining to academic programs must be kept and maintained in the appropriate designated areas.

Automobiles and Parking. Automobiles are permitted on the campus where their use is regulated by the Department of Public Safety as fully authorized peace officers and auxiliary members of the Stockton Police Department. All citations issued are adjudicated through the Stockton Municipal Court. Parking on the University premises is by permit only, and all cars must be registered at the University Finance Center.

University Programs and Services

Academic Computing

Extensive and varied computer facilities are available to students at the University of the Pacific. Students work with computers in many courses across a variety of academic fields, and for those who wish to specialize in this area, there are degree programs in Computer Science and in Computer Engineering. (Descriptions of these degree programs can be found under the College of the Pacific and the School of Engineering.)

The University's main academic computer is a Digital Equipment Corporation VAX 785. Students have access to this powerful computer through a number of microcomputers and CRT terminals, and a line printer. This peripheral equipment is located in an academic user area at the computer center which is open during

extensive daytime, evening and weekend hours and is staffed with teaching assistants. In addition to the main computer, the University has several microcomputer laboratories at various locations on campus equipped primarily with IBM PCs and Apple MacIntoshes.

Academic Skills Center

The Academic Skills Center conducts individual and group programs for students who desire to refine essential learning skills. The Center has organized classes for credit in reading and study efficiency and writing for college. In addition, the Center offers personal programs in specific skill areas, such as note-taking, test-taking, vocabulary and studying for graduate entrance exams. The Center's programs are college-level and available to all students regularly enrolled in the University. Some remedial instruction is available for students with minor deficiencies. Description of organized classes can be found under the School of Education.

Air Force ROTC

Through an arrangement with California State University in Sacramento, interested and qualified University of the Pacific students are able to participate in an ROTC program leading toward a commission in the U.S. Air Force. Except for a four- or six-week training camp at an Air Force base between the sophomore and junior years, all ROTC classes are taught on the campus of CSU in Sacramento. Lower division courses are designed to meet once a week for one hour; upper division courses meet twice a week for a total of three hours per week. Students are responsible for arranging their own transportation to Sacramento.

In addition to the Aerospace Studies courses taught in Sacramento, Air Force ROTC students may be directed into certain regular UOP offerings on either a required or recommended basis. Although the ROTC program is designed to be compatible with any academic major along with the general education program, certain subjects are deemed to be of special value to the future Air Force officer. Thus, irrespective of academic major, the ROTC student will be required to take courses in communication skills (written and oral), mathematical reasoning (mathematics, computer science or statistics), and foreign language (scholarship recipients only).

A certain number of Air Force ROTC scholarships are available on a competitive basis, with particular emphasis given to engineering students and navigator candidates. Except for scholarship recipients, students come under no obligation to serve in the Air Force until after field training just prior to their junior year. Upon entering the final two years of the ROTC program, each cadet incurs an Air Force commitment and also begins receiving monthly payments.

Although designed as a four-year program, students may complete Air Force ROTC in as

little as two years. This option may be particularly attractive to UOP students because of the commuting distance to Sacramento. Special scheduling consideration in ROTC classes will be given to UOP students commuting to Sacramento.

For further information or to apply for the Air Force ROTC program individuals should contact the Department of Aerospace Studies, California State University, 6000 "J" Street, Sacramento, CA 95919, (916) 278-7315.

Clinical Services

Clinics on the campus offer specialized training at an advanced level with services and therapies available to the University's own students and to the community at large in music therapy, reading, speech and hearing, behavior observation, and psychological testing and counseling. Members of the Clinical Services staff are on the University faculty in the areas of music therapy, curriculum and instruction, educational and counseling psychology, and speech. A psychiatric social worker is also a member of the staff. A consulting psychiatrist and an otologist are available for case conferences.

Cooperative Education, Internships

The Cooperative Education/Internship Program, offers students in the liberal arts, sciences and business an opportunity for constructive work experiences related to their field of study and/or career objectives. Working closely with faculty members, the CO-OP/Internship Program assists interested and qualified students in obtaining suitable CO-OP/Internship assignments. These work-learning experiences (which may be in a variety of business, government, industrial and social services settings) are available in both paid and non-paid positions and may be either full or part-time. A specified amount of academic credit is earned as students demonstrate to their faculty sponsors the extent of the learning achieved in the work setting by means of term papers, technical reports, or other projects. Internships and co-ops are taken on a Pass/No Credit grading basis. Students interested in this program should contact the CO-OP/Internship Program.

In addition to the CO-OP/Internship Program, some departments offer specialized Internship (generally off-campus) and Practicum (generally on-campus) opportunities related to the major programs. Through these experiences, students participate in a variety of community organizations in Stockton such as migrant worker camps, public schools, correctional institutions and hospitals. In these settings students face social and educational problems to which they can relate their academic programs. Through study, observation and participation in a variety of experiential settings, students are better able to see how theoretical learning is applied in real situations, to define

their educational and career goals, and to develop increased motivation toward the attainment of these goals.

Library Services

At the heart of the ivy-covered halls of the Stockton campus, is the William Knox Holt Memorial Library which houses a growing collection of over 400,000 volumes in social sciences, business, education, humanities, engineering and life sciences. Currently, the library subscribes to over 3,000 periodicals and newspapers.

The William Knox Holt Memorial Library offers a variety of study settings, including individually lighted study carrels, large tables, lounge areas and group study rooms. Large windows overlooking the center of campus, excellent lighting, air conditioning, and electronic security are features of this contemporary, spacious building.

The Library is a member of OCLC (Online Computer Library Center, Inc.), an online union catalog with more than 10,000 member libraries who share over 14 million bibliographic records for the purposes of cataloging and interlibrary loan. In addition, the Library uses the INNOVACQ automated acquisitions and serials check-in system to provide up-to-date information on new books, current periodical subscriptions (including latest issues received), and the library materials budget.

A staff of twelve librarians are available to assist students and faculty with their research needs. This library offers student access to materials 96 hours a week, extended during final exam periods. Instruction in library use is available through printed materials, classroom lectures, special seminars and a credit course.

The Holt-Atherton Department of Special Collections, located on the lower level, contains a valuable collection of photographs, books, maps, manuscripts and other resources related to the Trans-Mississippi West. The personal book collection and furnishings belonging to naturalist and conservationist John Muir as well as a number of other rare and valuable collections are housed in the Department. University Archives are also contained in this modern facility.

A newly remodeled Music/Audio Visual area is located on the third floor of the main library. Equipment for listening to records, tapes, and compact disks and VCRs for viewing video cassettes are available. The Library has just added one MacIntosh SE and six IBM ATs for student use.

The Science Library provides materials and service for chemistry, pharmacy, and physical therapy.

Computer-based literature searches (for a fee), interlibrary lending service, and photocopy machines for paper and microformats, are services offered at campus libraries. Modern technological advances are being integrated to ensure quality library services.

The focal point for study, reading and research at the University of the Pacific is the Library System, comprising the Stockton campus libraries, the Pacific Medical Center Health Sciences Library in San Francisco, and the McGeorge School of Law Library in Sacramento.

Course Offerings

ILB 11. Introduction to Library Resources and Research Methods (2) Designed for students at all levels who wish to improve their ability to use libraries in general and the UOP library in particular. Emphasizes major types of material and the use of catalogs, reference books, indexes, periodicals and other study aids. Inquire at the University Library Reference Desk for further information.

Lifelong Learning

The Office of Lifelong Learning offers extension and continuing education courses designed to assist residents of San Joaquin County and the surrounding region in improving their professional skills, updating their knowledge, developing new personal or professional expertise, or participating in avocational or personal development activities.

Courses offered may fall into one or more of the following categories: extended education courses offered for the professional development of educators and others in professions where these credits are utilized to measure continuing education; Continuing Education Unit (CEU) courses offered for individuals in professions where the CEU has been accepted as the measure of continuing professional development or is required for recertification or relicensure; and enrichment courses awarding no credit.

Conferences, seminars, symposiums and workshops are held throughout the year or can be arranged for businesses, organizations or institutions. Travel programs for credit and non-credit and children's courses also are offered throughout the year.

For a current listing of courses, contact the Office of Lifelong Learning, University of the Pacific, Stockton, CA 95211, (209) 946-2424.

Mathematics Resource Center

The Center provides diagnostic testing to insure prerequisite skill levels in college mathematics and science courses. All incoming students are tested for the general education basic quantitative skills requirement. Support tutoring for students enrolled in mathematics courses is also provided. For students requiring additional preparation in mathematics, the Center offers courses in pre-algebra, elementary algebra, intermediate algebra and trigonometry. These courses are taught using a personalized system of instruction (PSI) which provides for individual tutoring and self-pacing. These courses are listed under College of the Pacific, Department of Mathematics. For fur-

ther information about the Mathematics Resource Center, contact the Department of Mathematics.

Pacific Alumni Association

The Pacific Alumni Association is made up of more than 26,000 living graduates and former students. Membership is free. The Association sponsors several campus gatherings during the year: Pacific Parents Weekend and Homecoming in the fall, and Alumni Fellows Day and Half Century Weekend in the spring, all of which are designed to enable alumni to continue their friendships with each other and with the University. Alumni are also kept in touch with the University through regional alumni clubs and the *Pacific Review*. Activities and programs of the Association are organized and coordinated by the Office of Alumni and Parent Programs. For more information call (209) 946-2391.

Study Abroad Programs

The University of the Pacific offers its students the opportunity to study abroad for a semester or an academic year in one of nearly 200 programs on six continents around the globe. Students are encouraged to consider this option that will enrich their lives, add an exciting dimension to study at UOP, and further career preparation in an increasingly interdependent world. These programs are administered through the Office of International Programs, Bechtel International Center, (209) 946-2591.

In addition to sponsoring its own academic programs abroad, UOP is affiliated with the Institute of European Studies, the School for International Training's College Semester Abroad Programs, the International Student Exchange Program, the Council on International Educational Exchange and other universities and consortia. Credit earned in these affiliated programs is awarded through UOP. Costs for overseas study are about the same as an equivalent period on campus and most scholarships and federal loans apply.

Requirements for the various study-abroad programs vary, but viable options exist for every major on campus. Most students choose to participate in their junior or senior years. However, interested students should investigate study abroad choices as early as possible in their academic careers to insure eligibility. Many programs require prerequisite courses (e.g., a certain level of language proficiency) and all require a minimum grade-point average. Group programs and one-to-one exchanges are available. In addition, some programs incorporate homestays with local families and some the opportunity for independent study and/or travel.

Many study-abroad sites offer a broad liberal arts curriculum, although some have a specific academic focus, and some internships also are available. Students may opt for a business program in Singapore, Copenhagen, or Nijmegen; study international organizations in

Geneva; or learn about rural life and culture in Kenya, India, or Mexico. All programs offer UOP students the challenge of living and studying in a culture very different from their own.

The Office of International Programs provides an orientation course, SIS 151 Cross-Cultural Orientation, to students prior to their departure, and the opportunity to reflect critically on their experiences in SIS 161 Analysis of the Overseas Experience, upon their return. Both credit courses are two-unit offerings.

The following opportunities to study abroad are currently offered:

Europe. UOP has, or is associated with, programs in Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Malta, the Netherlands, Norway, the Soviet Union, Spain, Sweden, Switzerland, and the United Kingdom.

Asia. Students may study in China, Hong Kong, India, Indonesia, Japan, Korea, Nepal, the Philippines, Singapore, Taiwan, Thailand or Viet-Nam.

Africa. Offerings are available in Cameroon, Ivory Coast, Kenya, Madagascar, Morocco, Nigeria, Tanzania, Togo, Zambia, and Zimbabwe.

North and Central America and the Caribbean. Choices include Canada, Costa Rica, The Dominican Republic, Honduras, and Mexico.

Middle East. There are programs in Egypt and Israel.

Oceania. Students may select programs in Australia and Fiji.

South America. Current options include Argentina, Brazil, Colombia, Ecuador, Peru, and Uruguay.

The Office of International Programs maintains a library on these and hundreds of other possibilities to study, work and/or travel abroad, as well as for cross-cultural study. The office staff is available to counsel all students planning to go abroad. The goal of the Office of International Programs is to assist all students to maximize the benefits of their international experiences.

The following programs are administered under the Department of Political Science, (209) 946-2524:

United Nations Semester. Through an affiliation with Drew University in Madison, New Jersey, Pacific students may participate in the United Nations Semester conducted on the Drew campus and at U.N. Headquarters. This is of interest to students majoring in international relations and related areas.

Semester on the European Community. In cooperation with Drew University, Pacific students may participate in a unique opportunity to study and experience the movement towards European political and economic integration at the headquarters of the European Economic Community in Brussels, Belgium.

Information regarding the following programs may be obtained from the School of Education:

Teaching in Mexico. The School of Education offers this program to students enrolled in the University's directed teaching program. This student teaching experience is based at an American School Foundation campus in Mexico. These private bilingual schools offer the student teacher an opportunity to be involved in numerous innovative educational experiences, teaching, open area classrooms, departmental programming, and individualized instruction. Student teaching is conducted in English. This option is not open to students in the Multiple Subjects Bilingual Emphasis Program.

Summer Sessions

The University offers a varied summer program which allows people from all walks of life an excellent opportunity to fulfill degree requirements or for self-improvement. Students may register by mail or in person. Special programs for varying lengths of times are also available. Summer sessions are divided among two five-week sessions and a four-week inter-session immediately following the end of the Spring semester. For information on summer sessions and description of courses to be offered, address the Director of Summer Sessions, University of the Pacific, Stockton, California 95211.

Pacific Folk Dance Camp. Started in 1948, Pacific's Folk Dance Camp each year, early in the second summer session, offers an opportunity for teachers, recreational leaders and therapists, folklorists, and dance enthusiasts to study intensively with a large staff of nationally recruited specialists. The curriculum includes various types of folk emphasis and about eight hours of dancing each day. The registrants come from all parts of the United States and many foreign countries. One unit of Lifelong Learning credit per week is available on a pass/no credit basis. For further information, write to the Folk Dance Camp director.

Pacific Summer Music Institute. This is a summer program of music study and performance for talented high school and junior high school students with a serious interest in music. The program is designed to develop students' talents in large ensemble and chamber music performance. Elective studies including theory, composition, conducting, jazz and improvisation are offered to enhance the performance emphasis of the Institute. Four one-week sessions are offered each summer, usually the last two weeks in June and the first two weeks of July. Students rehearse and perform with nationally known conductors and experienced teachers in the ensemble of their choice: Orchestra, Concert Band, Chorus. Public performances are presented weekly. Also offered as part of the Pacific Summer Music Institute is a one-week session with the Jazz Experience, and a two-week Piano Masterclass. For further information and a Pacific Summer Music Institute schedule, write to Pacific Summer Music

Institute, Conservatory of Music, University of the Pacific, Stockton, CA 95211. Telephone: (209) 946-2416.

Summer Pre-Law Program. A five-week pre-law program is offered each summer at the University's McGeorge School of Law in Sacramento. Students complete three courses for six units of undergraduate credit. Students also participate in general guidance sessions about law study and legal careers. Housing is available on the Sacramento campus. Past course offerings have included:

UPL 93. The Adversarial Process (2) The role, nature, and sources of law in the United States; major legal ideas and legal processes characteristic of the adversary system; emphasis on the evolution through judicial opinions of concepts of justice.

UPL 193A. Individual Rights and the Criminal Process (2) Formation and development of the constitutional framework of the criminal trial; analysis of competing values of maximum personal freedom and a safe society; trends in the administration of criminal justice.

UPL 193B. Procedural Aspects of Judicial Systems (2) Procedural aspects of resolving civil disputes; choice of forum; power and competence of courts; constitutional guarantees of notice and right to be heard.

UPL 193C. The Child, the Family and the State (2) Society's regulation through legal

rules and procedures of relationships among family members and between the family, as a basic socio-economic unit, and the larger society of which it is a part.

UPL 193D. Creation of Enforceable Obligations (2) Historical requirements of contract formation; modern statutory enactments; socio-economic principles influencing whether a particular promise should be enforced.

For further information contact Director, Summer Pre-law Program, University of the Pacific, McGeorge School of Law, Sacramento, California 95817.

The Holt-Atherton Department of Special Collections

The Holt-Atherton Department of Special Collections is the University Library's special collections department. Its primary purpose is to collect, maintain, and provide access to the Western Americana collection and the University Archives. The department's materials do not circulate.

The Stuart Library of Western Americana is a collection of 45,000 volumes dealing with all aspects of the Trans-Mississippi West with special emphasis on California in the San Joaquin Valley.

Also located in the Holt-Atherton Department are over 230 manuscript collections,

foremost among them being the John Muir Collection containing Muir's original journals and sketch books, correspondence, and drafts of his books and articles.

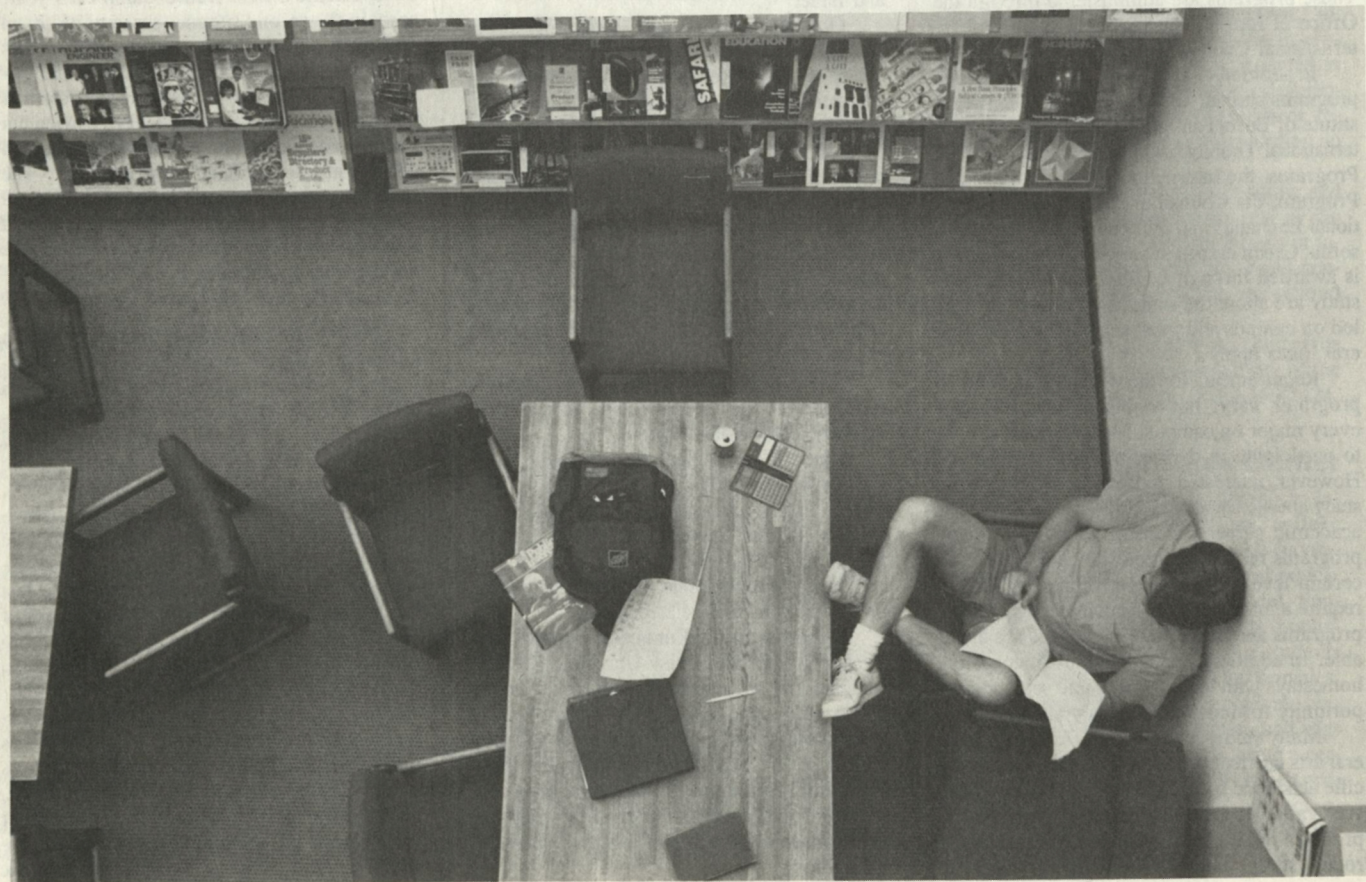
The Holt-Atherton Department also houses rare books, 30,000 historic photographs, and UOP archival material such as yearbooks, catalogs, newspapers, programs, and records of the administration, faculty, and student groups, some dating back to 1851, UOP's founding year.

University Bookstore

Students will find the University Bookstore an excellent source for living and learning needs.

It provides students with a wide range of products and services for classroom and extra-curricular activities. In addition to required and recommended textbooks, a selection of over 14,000 titles is maintained in both academic and general subject areas.

The bookstore offers a complete line of school supplies. It also carries personal hygiene supplies, art supplies, computers, electronics, an assortment of UOP emblematic clothing and gift items, magazines, greeting cards, films, office products, and much more. Other services offered include a complete special order service for books, supply items, and film processing.



UNIVERSITY GENERAL EDUCATION PROGRAM

The University General Education Program introduces the student to a tradition of learning and study in a variety of areas or disciplines and provides the student with the opportunity to develop basic intellectual attitudes and skills. It prepares the student for a lifetime of continual learning in the application of knowledge to personal life and career. This program is based, in part, on the belief that a broad education liberates men and women and prepares them to be effective citizens. There is no single avenue to a liberal education. Each student, along with an adviser, will select those general education courses which most nearly fit the student's needs and aspirations.

The University is currently revising the General Education Program. Freshmen entering in the Fall 1991 and Spring 1992 semesters will be required to take Mentor's Seminar I and Mentor's Seminar III. Mentor's Seminar I will be offered in the Spring 1992 semester. They may also be required to meet other requirements mandated by changes in the General Education Program. Students entering in 1991-92 should check with their school or college dean's office for general education requirements.

Fundamental Learning Skills

The General Education program is divided into two components, Fundamental Learning Skills and the Liberal Learning Program. Entering students' writing and quantitative skills are assessed either during the summer orientation or early in their first semester. Students not passing the writing examination must pass with a grade of "C-" or higher Principles of

Writing (AEN 7) or Writing for College (FSC 21). Students not passing an intermediate algebra test must pass with a grade of "C-" or higher Intermediate Algebra (AMA 5) or an Elementary Statistics course (AMA 31 or 35). Reading skills are also assessed on entrance. Students are encouraged to take courses designed to improve their ability to read and study college level, assigned texts. Because these skills are essential foundations for most college courses, students are expected to develop them during their first year. A student, freshman or transfer, who has not met both the writing and the quantitative skills requirements by the end of the first year will be subject to academic probation, and any one who has not fulfilled both requirements at the end of two years will be subject to disqualification from further study at the University. In any case, a student must have met both skills requirements prior to graduation.

Liberal Learning Program

Liberal learning remains timeless because it addresses the never ending challenges of preparation for life and learning and the demands and issues of the given moment. Students taking liberal learning courses can discover new areas of knowledge and methods of study. These may lead to new career and professional choices and to academic and intellectual enjoyment. In this spirit, the student's liberal learning will be, ideally, a four-year experience both influencing and reflecting each individual's intellectual and personal development.

The liberal learning requirement and courses provide the student with a flexible structure within which he or she can achieve these

goals. While many courses cover topics and methods of study which are representative of several areas of human endeavor, the courses in the Liberal Learning Program have been selected because they emphasize a particular field and illustrate its relation to other disciplines and fields. In consultation with her or his adviser, the student selects from courses which are organized into three categories, each of which is further subdivided as follows:

- I. The Individual and Society
(Three courses required, one from each area below.)
 - A. Individual and Interpersonal Behavior
 - B. Society and Culture in the United States
 - C. International or Intercultural Studies
- II. Human Heritage
(Three courses required, one from each area below.)
 - A. Literature, Letters and Language
 - B. Fundamental Human Concerns
 - C. Practice and Perspective in the Visual and Performing Arts
- III. Natural World and Formal Systems of Thought
(Three courses required, at least one from each area or two courses from IIIA and one course from IIIB.)
 - A. Life and Physical Laboratory Sciences
 - B. Formal Systems of Thought
 - C. Science, Technology and Society

Category I: The Individual and Society

Courses in this category will introduce the student to the theories and concepts used to explain individual and interpersonal behavior. Such courses will also help the student develop an understanding of the structure and function of society and how various social forces contribute to both continuity and change in institutions and social systems. Moreover, through courses which deal with societies or cultures other than the student's own, the interaction of cultures, beliefs, attitudes and behaviors will be examined. There are three areas of study in this category:

- A. **Individual and Interpersonal Behavior**
In this area of study, the student will have the opportunity to:
 1. Understand individual human behavior.
 2. Understand interpersonal behavior.
 3. Understand the theories of individual and interpersonal behavior from a historical and/or contemporary perspective.
- B. **Society and Culture in the United States**
In this area of study, the student will have the opportunity to:
 1. Understand the society and culture of the United States.



2. Understand the growth and development of political, social, economic and/or intellectual institutions of the United States.
3. Understand how change in United States society and culture may over time influence human behavior.

C. International or Intercultural Studies

In this area of study, the student will have the opportunity to:

1. Understand that human values and behaviors differ in time and/or place, and gain an insight into the reasons for these differences.
2. Appreciate the growth, development, or nature of cultures or societies that are based on values and behaviors different from those basic to the culture and society of the United States.
3. Understand how and why cultures and societies can change, interact, or remain stable.

Category II: Human Heritage

Study in this category provides an understanding and appreciation of how people in diverse cultures, past and present, have expressed their spiritual, rational and artistic perspectives of human experiences. Courses in this category involve reflections on the human condition and investigations of distinctive modes of aesthetic expression including the literary, visual and performing arts. The educational goals are informed perspective, individual insight, creative expression, and critical assessment. There are three areas of study in this category:

A. Literature, Letters and Language

In this area of study, the student will have the opportunity to:

1. Learn how to interpret and understand literary works.
2. Learn about the structure, function and use of language, spoken or written.
3. Enhance the student's capacity for written and/or oral expression.

B. Fundamental Human Concerns

In this area of study, the student will have the opportunity to:

1. Investigate and develop an informed perspective on issues that have been of perennial concern to humankind.
2. Reflect on and assess philosophical, religious or historical perspectives on these issues.
3. Enhance the student's ability to demonstrate, in writing, one's knowledge and understanding of these issues.

C. Practice and Perspective in the Visual and Performing Arts

In this area of study, the student will have the opportunity to:

1. Understand the theories, history and trends of the visual and performing arts, including the fine arts, dance, music, and theatre.

2. Learn how to analyze and interpret works of art.
3. Develop a deeper appreciation of the visual and performing arts by applying the theories and techniques of aesthetic expression in practice.
4. Enhance the student's ability to demonstrate, in writing, one's knowledge, understanding or ability to analyze and interpret works of art.

Category III: Natural World and Formal Systems of Thought

Study in this category will provide the student with knowledge of the natural and physical world. These courses are designed to enhance the student's ability to comprehend and interpret scientific concepts. The interaction of science, technology and society will be explored. Study in this category will also introduce formal systems of thought which provide frameworks for interpreting phenomena and solving problems in a wide variety of disciplines in both the social and natural sciences. There are three areas of study in this category:

A. Life and Physical Laboratory Sciences

In this area of study, the student will have the opportunity to:

1. Learn basic content and theoretical concepts of a scientific discipline.
2. Use scientific methods of experiment and observation in either the laboratory and/or the field.
3. Examine and practice the application of models and theories to the solution of problems within the scientific disciplines.

B. Formal Systems of Thought

In this area of study, the student will have the opportunity to:

1. Study the principles and procedures of disciplines which use symbolic abstraction to solve problems.
2. Practice the application of these principles and procedures in solving problems from several different disciplines.
3. Gain insight into the rational or logical basis for these procedures.

C. Science, Technology and Society

In this area of study, the student will have the opportunity to:

1. Gain historical or philosophical perspective on science as a human enterprise and/or study the content of a scientific area.
2. Understand the effects of science and technology on society.
3. Study the application of scientific models, theories and/or technology to the solution of problems facing society.

Liberal Learning Requirements

All bachelor degree or first professional degree students must complete the University-wide

liberal learning requirement of three courses from each of the three categories and at least one course from each of the nine areas described in the preceding section for a minimum of nine courses and 30 units. In Category III, students may take two courses from Area A and one course from Area B. Courses approved as satisfying the liberal learning requirements are listed in this catalog. With the exception of certain courses in the Practice and Perspective in the Visual and Performing Arts area, all approved courses are worth at least three semester units. One- and two-unit courses in the Practice and Perspective in the Visual and Performing Arts area have been approved for applied music and dance. Students wishing to fulfill liberal learning requirements with applied music courses must take three successive semesters of applied music on the same instrument or in the same ensemble.

The individual colleges and schools of the University may have requirements in addition to the University-wide requirements. These are described in this catalog under the programs of each college or school.

Requirements for Transfer Students

Transfer students are expected to meet the equivalent of the University-wide general education requirements and the requirements of the individual college or school in which the student is matriculated. The student must consult with the college or school general education coordinator regarding the assessment of courses from other colleges and universities and to determine applicable transfer credit for both the Fundamental Learning Skills and the Liberal Learning components of General Education. Variations or exceptions from the University-wide requirements can be made only through consultation with the college or school coordinator.

Course Lists for Each Liberal Learning Area

The courses listed below are approved as counting toward the liberal learning requirement in each of the nine areas of the program. Courses marked with an asterisk are one- or two-unit courses and will count toward General Education only if taken in connection with one or more other specified courses. Although not listed here, some "special topics" courses taught during a particular term may also be approved for general education. Some professional schools on campus have more restrictive requirements under which only some of the courses listed in each area will count for students pursuing those professional programs.

The listing of general education courses being taught during a particular term, can be found in each term's Schedule of Classes.

I-A. Individual and Interpersonal Behavior

ACD	51	Communicative Disorders: An Overview
ACO	43	Intro to Interpersonal Communication
AEC	53	Introductory Microeconomics
AEN	122	Literature and Psychology
AID	55	Intro to Human Development
APY	29	Child Development
APY	31	Intro to Psychology
APY	66	Sex Roles and Sexuality
APY	110	Psychoactive Drugs and Behavior
APY	111	Abnormal Psychology
APY	131	Adolescence and Young Adulthood
APY	164	Freudian Psychology
APY	165	Humanistic Psychology
APY	177	Psychological Stress
ASO	133	Criminology
ASO	135	Deviant Behavior
FEG	115	Intro to Language
FEP	105	Human Sexuality

I-B. Society and Culture in the United States

ACO	31	Intro to Mass Communication
AEC	51	Economic Principles and Problems
AEC	55	Introductory Macroeconomics
AHI	61	U.S. History I
AHI	63	U.S. History II
AHI	120	The Civil War Era
AHI	124	Jazz Age to Cold War (1920-48)
AHI	126	U.S. in the 50s, 60s and 70s
AHI	160	History of American Business
AHI	162	Social History of Agrarian America
AHI	164	Social History of Industrial America
AHI	182	Women in U.S. History
AHI	184	African-American History
APO	31	American Democracy
APO	41	U.S. National Government
APO	116	Mass Media and Political Participation
ASO	51	Intro to Sociology
ASO	61	Social Problems and Policy
ASO	104	Sociology of Sport
ASO	127	Family and Marriage
ASP	141	Sports in America
ASP	163	Recreation and American Society
EMB	11	Intro to the Business of Music
FEG	152	Mexican-American in Contemporary Society
LBA	53	Business Law
LBA	82	Public Management

I-C. International or Intercultural Studies

ACL	100	History of Ancient Greece and Rome
ACL	115	Classical Mythology
ACO	143	Intercultural Communication
AGE	116	Western Europe
AGE	118	Canada: Land, Resources and People
AGE	128	Political Geography
AGE	138	Agriculture, Food and Famine
AHI	108	Absolutism and Enlightenment
AHI	114	Europe in Turmoil, 1900-1945
AHI	115	Europe Since 1945
AHI	125	East Asian Civilization I
AHI	127	East Asian Civilization II
AHI	128	The Hispanic World: Spain and the Americas
AHI	129	The Roots of Russian History
AHI	130	Shaping of Modern Latin America
AHI	131	History of Modern Russia

AHI	140	History of Soviet Foreign Policy
AHI	146	History of Mexico
AHI	149	Southeast Asia and the West
AHI	150	Japan to 1868
AHI	151	Modernization of Japan
AHI	152	China to 1800
AHI	153	China in Transition
AHI	176	History of American Immigration
AML	73	Russian Culture and Civilization
AML	112	Civilisation Francaise A
AML	114	Civilisation Francaise B
AML	172	Japanese Culture and Civilization
APO	11	Introduction to Political Science
APO	146	Latin American Politics
APO	148	Politics of the Middle East and North Africa
APO	150	Politics in Africa
APO	152	Politics of Asia
ARS	132	Judaism
ARS	134	World Religions
ARS	136	Japanese Religious Thought
ASO	53	Cultural Anthropology
ASO	106	Popular Culture
ASO	108	Food, Culture and Society
EHI	6	Introduction to the Music of the World's People
EHI	141	Opera Literature
FEG	195	Women Across Cultures
SGE	138	Agriculture, Food & Famine
SPO	152	Politics of Asia
SRS	134	World Religions

II-A. Literature, Letters and Language

ACD	53	Beginning Sign Language
ACL	11	First Year Ancient Greek, 1st Semester
ACL	11	First Year Ancient Greek, 2nd Semester
ACL	11	First Year Latin, 1st Semester
ACL	11	First Year Latin, 2nd Semester
ACL	13	Beginning Scientific Latin, 1st Semester
ACL	13	Beginning Scientific Latin, 2nd Semester
ACL	23	Intermediate Greek, 3rd Semester
ACL	23	Intermediate Latin, 3rd Semester
ACL	25	Intermediate Greek, 4th Semester
ACL	25	Intermediate Latin, 4th Semester
ACL	31	English Vocabulary Building
ACL	33	Bioscientific Terminology
ACL	127	Advanced Greek
ACL	127	Advanced Latin
ACL	151	Intensive Latin for Language Students
ACO	27	Public Speaking
ACO	29	Intro to Argumentation
ACO	116	Development of Rhetorical Thought
ADR	137	World Drama
AEN	25	English 25
AEN	41	Major British Authors I
AEN	43	Major British Authors II
AEN	51	Major American Authors I
AEN	53	Major American Authors II
AEN	77	Children's Literature
AEN	130	Chaucer and His Age
AEN	131	Shakespeare
AEN	140	The English Renaissance
AEN	154	20th Century American Novel
AHI	166	U.S. Intellectual History I
AML	11	First Year Chinese, 1st Semester
AML	11	First Year Chinese, 2nd Semester
AML	11	First Year French, 1st Semester
AML	11	First Year French, 2nd Semester
AML	11	First Year German, 1st Semester

AML	11	First Year German, 2nd Semester
AML	11	First Year Japanese, 1st Semester
AML	11	First Year Japanese, 2nd Semester
AML	11	First Year Russian, 1st Semester
AML	11	First Year Russian, 2nd Semester
AML	11	First Year Spanish, 1st Semester
AML	11	First Year Spanish, 2nd Semester
AML	19	French Individualized Instruction, 1st Year
AML	19	German Individualized Instruction, 1st Year
AML	23	Intermediate Chinese, 3rd Semester
AML	23	Intermediate French, 3rd Semester
AML	23	Intermediate German, 3rd Semester
AML	23	Intermediate Japanese, 3rd Semester
AML	25	Intermediate Chinese, 4th Semester
AML	25	Intermediate French, 4th Semester
AML	25	Intermediate German, 4th Semester
AML	25	Intermediate Japanese, 4th Semester
AML	29	Spoken and Written French
AML	101	Literatura Espanola Hasta 1800
AML	101	Literatura Espanola Desde 1800
AML	103	Literature Hispanoamericana Hasta Siglo XX
AML	105	Literature Hispanoamericana del Siglo XX
AML	116	Litterature Francaise A
AML	118	Litterature Francaise B
AML	120	Moyen Age
AML	122	Seizieme Siecle
AML	122	Siglo de Oro
AML	124	Intensive Portuguese
AML	124	German Writers of the 19th Century
AML	128	German Poetry
AML	130	Vingtieme Siecle
AML	132	Goethe and Schiller
AML	136	Modern German Drama
AML	170	Japanese Literature in Translation
AML	174	Modern Japanese Theatre
AML	176	Meiji Literature
AML	180	Modern Japanese Fiction
ARS	25	Key Ideas of the New Testament
EMP*	20	Intro to Lyric Diction
EMP*	21	Intro to Lyric Diction
FEG	133	Syntax and Semantics

II-B. Fundamental Human Concerns

ACL	112	Literature of Ancient Greece and Rome
AEN	128	The Medieval Mind
AHI	51	History of Western Civilization I
AHI	53	History of Western Civilization II
AHI	104	Medieval History
AHI	106	Renaissance and Reformation
AHI	178	European Intellectual History since 1789
APH	11	Intro to Philosophy
APH	21	Moral Problems
APH	23	Philosophy of Human Existence
APH	27	Fundamentals of Ethics
APH	35	Environmental Ethics
APH	39	Dimensions of Freedom
APH	53	History of Ancient and Medieval Philosophy
APH	55	History of Modern Philosophy
APH	102	Existentialism
APH	106	Philosophy of Law
APH	124	Philosophy of Religion
APH	135	Political Philosophy
APH	180	Metaphysics
APH	182	Theory of Knowledge
ARS	23	Key Ideas of the Old Testament
ARS	27	Life and Teaching of Jesus
ARS	30	Nature of the Christian Faith

ARS	32	Religion and American Culture
ARS	33	Intro to Religion
ARS	40	Church in the Modern World
ARS	44	Human Sexuality and Christianity
ARS	72	Biblical Themes in Western Literature
ARS	74	Autobiography and Religion
ARS	142	Christianity and Communism
ARS	143	Social Ethics
ARS	145	Biomedical Ethics
ARS	150	The Loving Relationship
ARS	151	Psychology and Religion
ARS	156	Religion of the Body
ARS	170	Religion and Modern Literature
ASO	110	Religion and Society
SHI	81	Perspectives on World History
SRS	74	Autobiography and Religion

II-C. Practice and Perspective in the Visual and Performing Arts

AAR	3	Visual Arts Exploration
AAR	7	Survey of Western Art to 1400
AAR	9	Survey of Western Art after 1400
AAR	25	Drawing I
AAR	31	Design and Color
AAR	41	Ceramics I
AAR	47	Sculpture I
AAR	50	Figure Sculpture I
AAR	83	Computer Art I
AAR	108	High Renaissance and Mannerism
AAR	110	17th Century Art-Age of Rembrandt
AAR	112	19th Century European Art
AAR	114	20th Century European Art
AAR	116	American Art Before 1900
AAR	118	Contemporary Art
AAR	120	Chinese Art History
AAR	122	Japanese Art History
AAR	124	Women and The Arts
AAR	131	Visual Arts Education
AAR	145	Photography I
AAR	147	Photography II
ADR	10	Intro to the Theatre
ADR	12	Expression Through Movement
ADR*	13a	Ballet: Beg. I
ADR*	13b	Ballet: Beg. II
ADR*	13c	Jazz: Beg. I
ADR*	13d	Jazz: Beg. II
ADR*	13e	Modern: Beg. I
ADR*	13f	Modern: Beg. II
ADR*	13g	Tap: Beg. I
ADR*	13i	Folk Dance
ADR	15	Oral Interpretation
ADR	17	Beginning Acting
ADR	26	Readers Theatre
ADR	43	Stage Costuming
ADR	44	Make-up for the Theatre
ADR	55	Puppetry
ADR	96	History of the Theatre
ADR	127	Storytelling and Creative Drama
AEN	31	Aesthetics of Film
AEN	121	Major Filmmakers
AEN	123	Film, Literature and the Arts
ARS	70	Religion and Cinema
EAP*	1	Applied Music Class Lessons
EAP*	5	Applied Music
EAP*	10	Applied Music
EHI	5	Music Appreciation
EHI	11	Survey of Music History I

EH1	141	Opera Literature
ETC	2	Fundamental Structures of Music

III-A. Life and Physical Laboratory Science

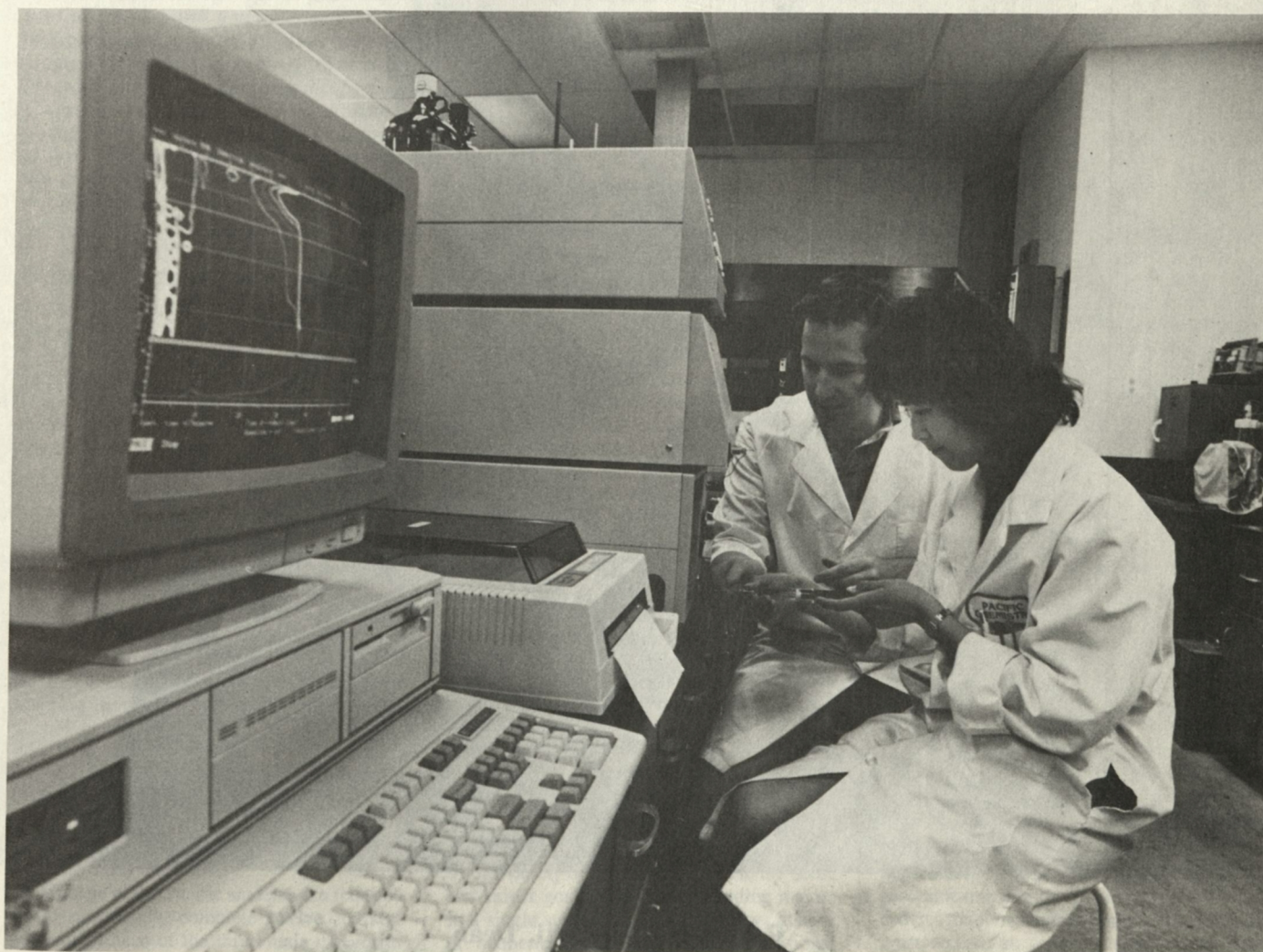
ABS	11	Human Anatomy and Physiology
ABS	31	Animal Societies
ABS	39	Intro to Botany
ABS	41	Intro to Biology
ABS	51/61	Principles of Biology
ABS	74	Biology of Insects
ABS	76	Marine Biology
ABS	110	Natural Environments of California
ACH	23	Elements of Chemistry
ACH	25/27	General Chemistry
AGE	83	Physical Geology
AGE	95	Geologic Evolution of the Earth
AGE	99	Physical Geography
AGE	103	Geology of California
APS	17	Concepts of Physics
APS	23/25	General Physics
APS	39	Physics of Music
APS	41	Astronomy
APS	53/55	Principles of Physics

III-B. Formal Systems of Thought

ACS	25	Computers/Information Processing
ACS	47	Fundamentals of Math. and Comp. Sci.
ACS	51	Intro to Computer Science
AMA	31	Elementary Probability and Statistics
AMA	33	Calculus for Decision Making
AMA	35	Elementary Statistical Inference
AMA	37	Probability and Statistics
AMA	39	Probability with Applications to Statistics
AMA	41	Elementary Functions
AMA	51	Calculus I
AMA	73	Operations Research Models
APH	37	Intro to Logic

III-C. Science, Technology and Society

ABS	22	Biology, Medicine and the Citizen
ABS	35	Environmental Problems and Perspectives
ABS	45	Basic Nutrition
ABS	47	AIDS and Sexually Transmitted Diseases
ACH	22	Science: Controversy and Consensus
AGE	85	The Changing Environment
APR	41	Heart, Exercise and Nutrition
ASO	112	Physical Anthropology
SBS	35	Environmental Problems and Perspectives



“Following academic traditions stretching to antiquity, we reveal those ideas, theories and values by which men and women explain and control their environment.”



**Robert R. Benedetti, Dean
College of the Pacific**

COLLEGE OF THE PACIFIC

A liberal arts and sciences college of the University of the Pacific featuring fifty-nine undergraduate major programs with opportunities for international, interdisciplinary and experiential study.

The College of the Pacific offers students a strong liberal arts education including opportunities for self-discovery, intellectual development and a large measure of freedom in selecting an academic program which meets their needs and interests. Within a context of high academic expectations and a commitment to excellent teaching, students are encouraged to develop and refine the attributes of self-discipline, rigor, persistence and a willingness to explore as fundamental characteristics of the educated person.

Students, with the assistance of their advisers, plan their academic programs in accordance with the direction provided by the College general education program, in response to their need to explore career interests, and to provide enjoyment, self-discovery and skill enhancement.

When students begin specialized study in the College, they will find an extensive array of departmental and inter-departmental major programs from which to choose. With academic programs incorporating the breadth of general education and the depth and specialization of a major, the College of the Pacific provides students with pathways toward useful and fulfilling careers and the means to appreciate the world in which they live.

General Education Program

College of the Pacific students, as all University of the Pacific students, participate in the University General Education Program. The curricular emphasis of the College of the Pacific is upon liberal arts study, and participation in the program is considered to be a vital part of the student's academic program. Most of the courses offered by the program are offered through College departments. The University is currently revising the General Education Program. Freshmen entering in the Fall 1991 and Spring 1992 semesters will be required to take Mentor's Seminar I and Mentor's Seminar III. Mentor's Seminar I will be offered in the Spring 1992 semester. They may also be required to meet other requirements mandated by changes in the General Education Program. Students entering in 1991-92 should check with their school or college dean's office for general education requirements.

Because the faculty of the College believe that general education is important, they have chosen to enhance the students' liberal arts education with the following modifications of the University Program:

1. College of the Pacific students are required to successfully complete **twelve** courses, **four** in each of the three main categories

of the University General Education Program, totaling a minimum of 42 units. Students must take one course in each of the three areas listed under category I, Individual and Society, **plus one additional course** drawn from any one of the areas in the category, and one course from each of the three areas listed under category II, Human Heritage, **plus one additional course** drawn from any one of the areas in the category. In the third category, The Natural World and Formal Systems of Thought, students have the option of taking one course from each of the three areas, **plus one additional course** drawn from any one of the areas in the category or two courses from area A, Life and Physical Laboratory Sciences and one course from area B, Formal Systems of Thought, **plus one additional course** drawn from any of the areas in the category.

2. Students may take no more than three courses on a pass/no credit basis, one in each of the three main categories.
3. Students may take no more than two courses from a single department, or school or college in any one main category.
4. No more than three courses from a single department or other school or college may be applied to meet the requirements of the general education program.
5. Credit earned through advanced placement or "challenge" tests cannot be used to meet general education requirements.
6. Coursework in independent or directed study, field experience or similar activities such as internships, practicums and cooperative education cannot be used to meet general education requirements.

Information about the University General Education Program as modified by the College of the Pacific may be obtained in the College of the Pacific Office of the Dean. Students who are transferring into the College as internal transfers or from another institution will have a general education analysis made of their transcripts at the time of matriculation into the College to determine what requirements remain to be completed.

The Major Program

The College of the Pacific provides students with opportunities for specialized study in a major through an unusually varied and flexible arrangement of courses. The College has designed a wide variety of majors to respond to the needs and career goals of students including majors in a single subject such as chemistry, history or mathematics; majors in pre-professional

studies, such as pre-law or pre-ministerial; and majors in professional studies, such as communicative disorders.

The College of the Pacific also has cross-disciplinary majors combining two areas of study, such as political economy, mathematics-economics or chemistry-biology. There are multidisciplinary majors which combine the resources of several departments, such as human development or liberal studies.

A special opportunity for students who have a special academic or career objective not directly met by existing majors is the "self-designed" interdisciplinary major. In this program a student will work with several faculty members from two or more academic areas to construct a major organized around a particular theme or interdisciplinary course of study. This option is offered under the direction and guidance of the Center for Integrated Studies.

In addition, students may take advantage of the courses and programs offered by the other schools on the University campus. Students working toward a teaching credential take professional coursework in the School of Education. There are several programs in the College which include coursework from the School of Business and Public Administration. Many students take elective coursework in the Conservatory of Music. In fact, a student may elect to take any undergraduate course in the University provided that the course prerequisites are met.

The result of this diversity and openness of curricular offerings and programs is that students receive the benefits normally associated with a large university while experiencing the close personal relationship between students and faculty which is a hallmark of the College of the Pacific.

Minors

Minors consist of a coherent set of related courses in a particular disciplinary or interdisciplinary area. Programs include twenty units or more, and where possible, advanced level courses. Ten units or more, depending on the specific program, must be taken at the University of the Pacific. Courses that count towards a minor cannot be taken on a "Pass/No Credit" basis. Students must maintain a minimum GPA of 2.0 in a minor program. Students may not take a major and a minor in the same discipline.

To complete a minor, a student should obtain a minor work sheet from the appropriate department or program. The work sheet will give information on requirements and procedures for completing the minor. The Registrar must receive an approved copy of the work

sheet before a notation of completion of a minor can be placed on the student's transcript.

For a complete description of approved minors, see the appropriate department or program description in this catalog.

The Center for Integrated Studies

The Center for Integrated Studies fosters and supports a variety of interdisciplinary programs relevant to the changing social, cultural and technological conditions facing today's world. Activities and programs of the Center are designed to enhance the intellectual spirit of the University and to expand the dialogue between students, faculty, and other members of the campus community. Programs of study offered through the Center typically combine interdisciplinary courses with independent study and experiential learning.

Interdisciplinary major programs affiliated with the Center include the Human Development program (see page 96), the program in Social Policy and Urban Affairs (see page 92) and Entertainment Management (see page 95). Non-major programs include the following:

The RUSSIAN AREA STUDIES MINOR offers students a framework for multidisciplinary and comprehensive study of the Soviet Union.

Completion of six courses (24 units) as follows:

Required courses (12 units):

Two courses (8 units) of Russian language, and AML 73-Russian Culture and Civilization.

At the discretion of the minor adviser, students may substitute an approved Special Topics course in the departments of Modern Language and Literature and/or English for AML 73.

Elective courses (12 units):

One course from each of the following pairs: AHI 129-Roots of Russian History or AHI 131-History of Modern Russia; APO 142-Comparative Communist Systems or APO 144-Soviet and East European Politics; and One of the following:

Four additional units of Russian language; AHI 138-French and Russian Revolutions, AHI 140-Soviet Foreign Policy, AEC 127-Comparative Economic Systems, or an alternate course selected from those listed above, or a summer or semester of study in the Soviet Union on a program approved by the Office of International Programs.

A minimum of twelve units must be completed at the University of the Pacific.

A THEMATIC MINOR designed to fit student interests is available to all students in the University under certain conditions. The student with a declared major and a minimum 2.65 grade point average may select the Thematic Minor so long as it does not duplicate or closely parallel an existing major or minor. At least one year before graduation the student shall submit to the Director of the Center for Integrated

Studies for approval a proposal which will include both the rationale for the Thematic Minor and the specific courses for its completion. Two faculty members must act as sponsors for the minor. The Thematic Minor must contain at least 20 units, normally 5 courses, of which not more than 2 may be used to complete the General Education requirement. No course may count for both the student's major and the Thematic Minor, and no more than 2 courses may be completed outside the University. Some advanced courses must be included.

The WOMEN'S STUDIES MINOR includes courses which help students to understand the changing expectations and roles of women and, consequently, to develop a better understanding of society. Five courses (20 units) are required for completion of a minor in this field. The student must take the core course, Women in Time and Place (AHI 93), and two of the following three courses: Women in U.S. History (AHI 182), Women Across Cultures (FEG 195) or Sexuality and Sex Roles (APY 66). The program of courses, chosen in consultation with a Women's Studies adviser, requires that at least one course be taken in each of the three divisions of the program, History, Social Sciences and Humanities. Women's Studies is an active sponsor of films, lectures, workshops and conferences focusing on women.

The ORGANIZATIONAL STUDIES MINOR introduces students to the relations between organizations and society, the varieties of modern organizational form and the social and interpersonal processes shaping the behavior and career experiences of individuals in organizations. Students take 24 units of approved study to complete the minor, including Organizations and the Individual (ASO 162), an introductory core course. Students take one course in each of three areas of study, Organizations and Society, Organizational Form and Structure, and The Individual in the Organization; one additional approved elective; and a capstone internship or field project.

HONORS PROGRAMS within the Center include the Freshman Honors Program for entering freshmen with outstanding records of high school achievement and the University Scholars program for students of sophomore standing or better who maintain records of outstanding academic accomplishment. Honors study through the Center encourages students to combine honors courses with honors work in independent study, research, internships and self-designed majors. An appropriate transcript notation signifies completion of honors program objectives.

The WASHINGTON CENTER INTERNSHIP allows students to work full-time in the nation's Capitol while receiving full credit toward graduation. The Washington Center coordinates a program of work-experience in a variety of governmental, not-for-profit and private enterprises; these are supplemented with academic seminars and lectures. A full-time student will also take an independent study super-

vised by a UOP faculty member. Full financial aid will apply for the full-time student. The Center for Integrated Studies coordinates all academic work and conducts workshops both before and after the semester in Washington, D.C.

Special Off-Campus Study Programs

College of the Pacific students have the opportunity to study abroad in their sophomore, junior or senior years in more than 180 locations. Some programs are for an academic year, some for only a semester. The countries include Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Malta, Netherlands, Norway, Soviet Union, Spain, Sweden, Switzerland and the United Kingdom in Europe; China, Hong Kong, India, Indonesia, Japan, Korea, Nepal, Philippines, Singapore, Sri Lanka and Thailand in Asia; Australia and Fiji, in the South Pacific; Cameroon, Egypt, Ivory Coast, Kenya, Morocco, Nigeria, Senegal, Tanzania, Togo, Zambia and Zimbabwe in Africa; Argentina, Brazil, Canada, Colombia, Costa Rica, Dominican Republic, Ecuador, Mexico, Peru and Uruguay in the Americas. For information about study abroad opportunities contact the Office of International Programs in the Bechtel International Center.

The Washington Semester Program, conducted by American University in Washington, D.C., is open to academically qualified juniors and seniors. Students live on campus in Washington, attend seminars with government officials and take part in internships. Special topics include foreign policy, economic policy, justice and journalism.

Students interested in California State Government are invited to apply for the Capitol Campus program in which they attend seminars at the University of California at Davis, visit capitol offices of lawmakers and participate in internships with state agencies, legislators and lobbying groups during the spring semester.

More information about the Washington Semester or Capitol Campus may be obtained from the Political Science Department.

The COP Student in UOP

The cooperative relationship between the College of the Pacific and other schools and colleges on the Stockton campus offers the COP student opportunities for personal and intellectual enrichment. Students from COP who meet the appropriate prerequisites may take courses in any other unit on the campus. Activities such as athletics, music, forensics and drama are University-wide and bring students with various interests and objectives together in common endeavors. The University newspaper, the *Pacifican*, is student edited and published. The radio station, KUOP-FM, is also a medium for student expression and creativity. Students play

responsible roles in the creation and production of publications and broadcasts.

Most students live on campus in residences which are close to classrooms and laboratories. Students govern their own resident halls through student house councils. Thus, all students are responsible for their own conduct and have a voice in determining their standards of behavior. There are, however, a number of students in COP who are residents of the Stockton area. At the University Center, students living on or off campus are drawn together by special educational and entertainment programs. Students living on or off campus may also come together in a great variety of organizations such as Le Cercle Francais, the Pacific Model United Nations Association, or the Public Relations Society of America.

Student Government in COP

Students have a responsible role in the total life of the College and the University. Students participate in determining the academic and social policies of COP. They are voting members of virtually all college and department committees and serve to keep avenues of communication open between students, faculty and administration as important questions of policy and practice are discussed.

The Associated Students of the University of the Pacific (ASUOP) represents all students on a University-wide basis. Within COP, the College of the Pacific Association (COPA) provides students with an opportunity to become involved in a variety of College activities and service. COPA is organized to foster identity among College of the Pacific students, to enhance student-faculty relationships, to enable students to obtain a better understanding of the College and University academic and administrative operations, and to develop programs which integrate academic and residential life. Its activities include the funding of student groups which benefit COP students and the appointment of representatives to College and University committees.

At the College of the Pacific, students are provided with the opportunity to learn more about themselves and their world, to define personal and professional goals, and to acquire the knowledge and skills necessary to fulfill a role of service to others. In the classroom, in residential life and through their contributions to the College and University, students ask and discover answers to important questions related to their careers and their own identities.

Majors and Specialized Programs Offered In and Through College of the Pacific

Applied Mathematics-Physics (B.S.)
Art (B.A.)
Art History (B.A.)
Biochemistry (B.S.)
Biological Sciences (B.S., M.S.)

Black Studies (B.A.)
Chemistry (B.A., B.S., M.S., Ph.D.)
Chemistry-Biology (B.S.)
Classics (B.A.)
Communication (B.A., M.A.)
Communicative Disorders (B.A., M.A.)
Computer Science (B.S.)
Cultural Anthropology (B.A.)
Dramatic Arts (B.A.)
Economics (B.A., B.S.)
English (B.A., M.A.)
French (B.A.)
Geology (B.A., B.S.)
Geophysics (B.S.)
German (B.A.)
Graphic Design (B.F.A.)
Greek (B.A.)
History (B.A., M.A.)
Human Development (B.A.)
Information Systems (B.S.)
Inter-American Studies (M.A.)
Japanese (B.A.)
Latin (B.A.)
Liberal Studies (B.A.)
Life Sciences (B.A.)
Linguistics (B.A.)
Mathematics (B.A., B.S.)
Mathematics-Economics (B.S.)
Medicinal Chemistry (B.S.)
Music (B.A.)
Philosophy (B.A.)
Physical Sciences (B.A.)
Physics (B.A., B.S., M.S.)
Political Economy (B.A.)
Political Science (B.A.)
Pre-Dance Therapy (B.A.)
Pre-Law (B.A.)
Pre-Ministerial (B.A.)
Psychology (B.A., M.A.)
Religious Studies (B.A., M.A.)
Social Policy and Urban Affairs (B.A.)
Social Sciences (B.A.)
Sociology (B.A., M.A.)
Spanish (B.A.)
Sport Sciences (B.A., M.A.)
Studio Art (B.F.A.)

Minors Offered In and Through College of the Pacific

Anthropology
Art History
Biological Sciences
Chemistry
Chinese
Classical Languages
Classics
Communicative Disorders
Computer Science
Dance
Drama
Economics
English
French
Geography
Geology
German

Greek
History
Information Systems
Japanese
Latin
Mathematics
Modern Languages
Organizational Studies
Philosophy
Political Science
Religious Studies
Russian Area Studies
Sociology
Spanish
Studio Art
Thematic Minor
Women's Studies

General Academic Regulations

Requirements for Graduation

A. To receive a baccalaureate degree in the College of the Pacific, students must complete at least 124 units with a minimum grade point average of 2.0 in all college-level work completed, all work completed at the University of the Pacific and all courses taken as part of the major program.

B. In order to complete the requirements for a baccalaureate degree, at least 32 of the last 40 units must be earned at the University of the Pacific. To obtain a second baccalaureate degree from the College, the candidate must complete at least 32 units at the University of the Pacific after the awarding of the first degree.

C. Students must complete a major program of studies prescribed by the College to fulfill the requirements for a baccalaureate degree. For courses in the major (including cognate courses) students must achieve a grade point average of 2.0 or better. The maximum number of units a student may take for graduation credit in any department is 60 including transfer courses.

D. Students must complete the University of the Pacific and College of the Pacific General Education Program to fulfill the requirements for a baccalaureate degree. Please refer to the University General Education Program statement on page 28 and the statement on College of the Pacific General Education Modifications on page 35 for the requirements of the program. Students are encouraged to consult with their advisers or the Office of the Dean if they have any questions or problems.

E. Effective with the May 1995 commencement, the College will not hood at graduation ceremonies any student who does not meet all requirements for graduation.

Special Requirements for Transfer Students

A. All students must fulfill the requirements of the University of the Pacific and College of the Pacific General Education Program. Courses taken at other institutions will be evaluated by the Office of the Dean to determine which will fulfill the General Education

mine which will fulfill the General Education Program requirements. Only courses carrying three or more semester units, or four or more quarter units, of credit will be accepted.

B. For College of the Pacific students a minimum of 124 units are required for graduation. (Certain major programs may require additional units.)

C. Each academic program adviser evaluates transfer courses to determine if they satisfy any of the major or minor course requirements. Transfer courses with content similar to courses required for major and minor programs at the College of the Pacific may be applied with departmental approval. Some departments limit the number of courses they will accept for the major or minor from other institutions.

D. Transfer courses are given departmental designations at the time of transfer. No more than 60 units of course work, including transfer courses, may be taken for graduation credit in any one department.

Academic Honors

Honors at graduation are awarded upon the recommendation of the faculty to students achieving a grade point average, appropriately computed, of: honors, 3.50; high honors, 3.70; highest honors, 3.90. Each semester students earning a grade point average of 3.50 or higher in twelve or more letter graded units are named to the Dean's list.

Class Attendance

Students are expected to attend classes regularly. Specific attendance policies are, however, determined by individual instructors who will provide students with a written statement of such policies at the beginning of the semester.

At the request of a student through the Student Life Office, his/her instructors will be notified of absences due to illness, University related activities, or other conditions beyond the control of the student.

Policies and Grading in the College of the Pacific

A. With few exceptions, courses taken in the major must be on a letter grade basis. Students are permitted to take courses on a Pass/No Credit basis in general education or in electives in order to encourage enrollment in courses outside their areas of specialization. Normally this option is limited to one course per student per semester. No more than three general education courses may be taken on a Pass/No Credit basis, one in each of the three main categories of the program. The student must declare the intention to enroll in a course on the Pass/No Credit basis with the instructor by completing a form available from the Office of the Registrar prior to the deadline established for adding classes.

In cooperation with the Office of the Dean, departments may designate certain courses to be graded only on the Pass/No Credit basis. In such courses the nature of the learning does not

provide an adequate basis for meaningful rank ordering of student performance and under no circumstances shall the students' work be evaluated on a letter-graded system.

B. Courses numbered 87/187 (internship), 89/189 (practicum) and 92/192 (cooperative education) must be graded on a Pass/No Credit basis only. Courses numbered APR 11 and APR 13 in the Department of Physical Education and Recreation, and ADR 13 in the Department of Drama and Dance are physical education activity, intercollegiate athletics classes and dance activity classes, respectively, and are graded on a Pass/No Credit basis only. Fieldwork courses are normally graded on a Pass/No Credit basis also.

C. The grade "P" is given for courses passed by examination, by the College Level Equivalency Program examinations, or by advanced placement.

Course Numbering Policies and Restrictions

A. Courses numbered 1 to 199 are undergraduate courses, certain of which may be accepted toward graduate degrees when taken in the graduate year. Courses numbered 1 to 99 are lower-level courses designed primarily for freshman/sophomore students and/or for students with little or no prerequisite training. Courses numbered 100 to 199 are upper-level courses designed primarily for junior/senior students and/or for students with appropriate prerequisite training.

B. Courses numbered 92/192 indicate cooperative education study and may be offered by departments or on a college-wide basis (ACC) without specific departmental designation. Courses carrying the 92/192 designation indicate work experiences on a full-time or parallel (part-time) basis which are coordinated by the Office of Cooperative Education and a faculty supervisor from an appropriate department of the College. Students from other schools and colleges on the Stockton campus may also participate in the Cooperative Education Program. Students who elect 92/192 normally are expected to undertake at least two work experiences (the equivalent of two semesters or six months in total) separated by at least one period of full-time academic study. Students may earn two to four units of academic credit for each working period for a total of eight units. Students on a part-time (parallel) basis are encouraged to register for additional coursework on campus providing that the total combination of units does not exceed a normal load. In the first of two work experiences students will enroll in 92; in the second, 192. Students may not exceed the 20-unit limitation stipulated in "F" below.

C. Courses numbered 87/187 and 89/189 indicate internship and practicum study when included in the course number of departments in the College of the Pacific. Courses numbered 87/187 designate work experiences that usually are conducted off-campus, primarily under the supervision of someone not holding a full-time appointment on the faculty of the College

of the Pacific. Courses numbered 89/189 designate work experiences conducted usually on campus, under the direct supervision of a College of the Pacific faculty member. Courses numbered 87/187 and 89/189 may be taken for two, three or four units of credit. Except in the Department of Communicative Disorders, internship and practicum courses must be evaluated on a Pass/No Credit basis only. If a department's 87/187 and/or 89/189 courses carry alphabetic subscripts designating different categories of study experiences, then the 87/187 or 89/189 course may be repeated for credit as long as the student does not repeat a category (sub-script) or exceed the 20-unit limitation (see "F" below). In some cases, the department may indicate special restrictions.

D. Courses numbered APR 11 in the Department of Physical Education and Recreation and ADR 13 in the Department of Drama and Dance are activity courses. Courses numbered APR 13 are intercollegiate athletics courses. Students will be able to apply no more than a total of eight units in activity and intercollegiate athletics courses toward graduation. Only four of the eight units can be in intercollegiate athletics. A one-unit activity class can be repeated only once. No two-unit activity class may be repeated for credit. All activity and intercollegiate athletics classes will be evaluated on the Pass/No Credit basis.

E. A total of no more than eight units of extension credit offered by the University of the Pacific may be applied to the units required for a baccalaureate degree. Regularly enrolled students (full- or part-time) may not receive more than two units of extension credit in any given semester. Extension courses may not be repeated for credit.

F. No more than 20 units of Cooperative Education (92/192), internship (87/187), practicum (89/189), physical education activity (APR 11), dance activity (ADR 13) and intercollegiate athletics (APR 13) courses in any combination may be applied to the units required for a baccalaureate degree.

G. Courses numbered 201 to 299 carry credit for graduate degrees.

H. Courses numbered above 300 are exclusively for students admitted to a doctoral program.

I. Courses numbered 193: Each department of the College of the Pacific may offer on occasion special topics courses (193). Some departments also offer lower-level special topics courses numbered 93 and/or graduate-level courses numbered 293. The material of the special topics courses may reflect the current research of the instructor or the needs and interests of a group of students. Detailed descriptions of these courses may be obtained from the chair of the department in which the courses are offered or in a publication prepared each semester by the Office of the Dean.

J. The following sets of course numbers designate a similar function in each department of the College of the Pacific: 191 and 291, independent study, undergraduate and graduate;

195, 295 and 395, seminar, undergraduate, graduate and doctoral; 197, 297 and 397, independent research, undergraduate, graduate and doctoral; 299, Master's thesis; 399, doctoral dissertation. Courses numbered 191 or 197 may be offered for two, three or four units of credit only.

K. When two course numbers are separated by a comma, the first is a prerequisite to the second; when they are separated by a semicolon, either course may be taken independently of the other. Course numbers separated by a hyphen indicate no credit is given until both courses have been completed in proper sequence. Course numbers separated by a slash or virgule indicate that both courses are simultaneously offered by the same instructor but are available for upper and lower division, or upper division and graduate enrollment.

L. Normally, odd-numbered courses are offered every year; even-numbered courses are offered every other year.

Art

Professors: Dellinger (Chair), Pecchenino, VarnBuhler

Associate Professors: D. Kakuda, D. Kasser, Schleier
Assistant Professor: Flaherty
Lecturers: S. Kakuda, L. Kasser

The study of art involves learning about the cultural and historical significance of the visual arts as well as developing an understanding of, and individual approaches to, human expression and the creative process. The department provides an undergraduate curriculum that is equally appropriate for students who plan careers in art as well as one responsive to the needs of those who seek to expand their knowledge and understanding of the visual arts.

To meet these goals the department offers two coherent programs of study. One leads to the Bachelor of Arts Degree program, a "liberal arts" degree with an art curriculum which expands perception of the many directions an artist may take in his/her career as well as the establishment of the interrelationship of the study of the visual arts with other academic disciplines. Majors in the B.A. degree program are as follows: Art, Art History or Art History (Emphasis: Arts Administration).

The other program of study leads to the Bachelor of Fine Arts degree. It is a "professional" degree with majors in either Studio Art or Graphic Design. While the many opportunities for an art career are perceived in conjunction with the liberal arts offered in the College, a selection of one of these majors indicates a more particularly defined career goal, generally leading to graduate study.

Admission to the B.A. program of the department requires the filing of a declaration of major form and consultation with a department adviser.

To be admitted to the B.F.A. programs, students must obtain application forms from the

department office and submit the completed forms plus a portfolio of work for department review and approval. See Requirements for Bachelor of Fine Arts Degree listing in this section.

The Department of Art offers two minor programs. One program emphasizes the Studio Arts and the other Art History. Each minor requires a minimum of 20 units. (No more than ten transfer units will count toward a minor.) Students interested in working toward a minor should contact the Chair of the Department of Art.

Some studio courses require nominal laboratory fees.

Requirements for the B.A. Degree (124 Units)

I. Successful completion of the General Education Program of the College of the Pacific.

II. Successful completion of selected major and electives.

A. Major in Art

Students are required to take a minimum of 56 units in art courses.

1. Introductory Program — 16 units:
AAR 3-Visual Arts Exploration;
AAR 7-Survey of Western Art to 1400; AAR 9-Survey of Western Art after 1400; and one additional art history course.

2. Major Program — 40 units: AAR 25-Drawing I; six units of additional drawing; AAR 31-Design and Color; AAR 41-Ceramics I; AAR 47-Sculpture I; AAR 63-Introduction to Print-making; AAR 145-Photography I; AAR 181-Senior Studio/Seminar; six units in painting; and an additional six units in other art studios or art history courses to be elected.

B. Major in Art History

Students are required to take a minimum of 58 units in art courses. It is recommended that students planning to do graduate studies in Art History take an appropriate modern language (consult adviser).

1. Introductory Program — 16 units:
AAR 3-Visual Arts Exploration;
AAR 7-Survey of Western Art to 1400; AAR 9-Survey of Western Art after 1400; and AAR 116-Contemporary Art.

2. Major Program — 42 units: AAR 108-High Renaissance and Mannerism; AAR 110-17th Century Art-Age of Rembrandt; AAR 112-19th Century European Art; and either AAR 114-20th Century European Art or AAR 118-20th Century American Art and either AAR 120-Chinese Art or AAR 122-Japanese Art; AAR 181-Senior Studio/

Seminar; and twelve units in other selected art history courses. In addition AAR 145-Photography I and one other art studio are required.

C. Major in Art History (Emphasis: Arts Administration)

Students are required to take a minimum of 45 units in art courses, 24 units in courses in the School of Business and Public Administration (this meets the requirements for a Minor in Management in the School of Business and Public Administration) as well as AEC 53-Introductory Microeconomics: Theory and Policy and AMA 31-Elementary Probability and Statistics.

1. Introductory Program — 16 units:

AAR 3-Visual Arts Exploration;
AAR 7-Survey of Western Art to 1400; AAR 9-Survey of Western Art after 1400; and AAR 116-Contemporary Art.

2. Major Program, Art — 29 units:

Studios, AAR 31-Design and Color; AAR 75-Graphic Design I; AAR 136-Visual Arts Management; AAR 145-Photography I; and AAR 181-Senior Studio/Seminar. Art History, either AAR 114-20th Century European Art or AAR 118-20th Century American Art; one Art History elective; and Internship or Practicum.

3. Major Program, Business and Public Administration — 24 units:

LBA 31-Principles of Financial Accounting; LBA 81-Introduction to Business; LBA 107-Marketing Management; LBA 109-Management and Organizational Behavior; LPA 81-Public Management; and one additional course in SBPA (consult adviser).

Students seeking the B.A. degree in Art or Art History may elect additional art courses but may not exceed 60 units within the department.

III. Electives — Course offerings from throughout the University to complete the 124-unit graduation requirement. Transfer credit courses taken outside the Department must have the approval of the Department to be counted as part of the courses required for the major.

Teacher Credential Candidates. Single-Subject credential candidates who are seeking either the B.A. or the B.F.A. degree with a major in art should include AAR 131-Visual Arts in Education as a departmental elective. AAR 136-Visual Arts Management is highly recommended. Close contact with the department adviser regarding appropriate courses in the School of Education is advised.

Prerequisite Courses. Students majoring in any art degree program should complete the introductory program before proceeding to other departmental courses. Non-art majors who wish to enroll in courses where prerequisite experi-

ences are expected should contact the Department of Art. The following non-prerequisite courses are normally available to all students: Studios — AAR 3, 25, 31, 41, 47, 50, 83, 131, 136, 145. Art History — AAR 7, 9, 108, 110, 112, 114, 116, 118, 120, 122, 124.

Requirements for the B.F.A. Degree (136 Units)

The Department of Art offers a four-year program of studies leading to the awarding of a B.F.A. degree in either Studio Art or Graphic Design. For students seeking an intensive education in the visual arts, the B.F.A. programs are designed with a professional orientation. This approach permits the development of special abilities in advanced studies in art, becoming preparation for graduate study and for career opportunities. Admission to the B.F.A. degree program requires approval of a departmental committee whose decision is based on a college-level art portfolio, college courses and grades, and a statement of professional goals. The B.F.A. Review Committee normally meets to consider the portfolio and other application materials once during the fall semester, and once during the spring semester. Contact the department for the exact dates. Students entering the University who are interested in art usually enroll in the B.A. degree program on matriculation and at a later date submit an application for a B.F.A. review of their college-level portfolio.

I. Successful completion of the General Education Program of the College of the Pacific.

II. Successful completion of selected major and electives.

A. Major in Studio Art

Students are required to take a minimum of 83 units in studio and art history courses.

1. Introductory Program — 16 units:
AAR 3-Visual Arts Exploration;
AAR 7-Survey of Western Art to 1400; AAR 9-Survey of Western Art after 1400; AAR 116-Contemporary Art.

2. Concentration, Studios — 67 units:
AAR 25-Drawing I; AAR 31-Design and Color; AAR 33-Life Drawing I; Drawing electives-six units; Painting electives-nine units; AAR 41 and 43-Ceramics I and II; AAR 47-Sculpture I; Sculpture elective-three units; AAR 63-Introduction to Printmaking; either AAR 61-Silk Screen Process or AAR 65-Printmaking II; AAR 83-Computer Art I; AAR 145-Photography I; AAR 171-Fine Arts Studio/Seminar; AAR 181-Senior Studio/Seminar; and required additional studio electives-12 units.

B. Major in Graphic Design

Students are required to take a minimum of 83 units in studio and art

history courses.

1. Introductory Program — 16 units:
AAR 3-Visual Arts Exploration;
AAR 7-Survey of Western Art to 1400; AAR 9-Survey of Western Art after 1400; AAR 116-Contemporary Art.

2. Concentration, Studios — 67 units:
AAR 25-Drawing I; AAR 31-Design and Color; AAR 33-Life Drawing I; Drawing elective-three units; Sculpture or Ceramics elective-three units; Painting elective-three units; AAR 61-Silk Screen Process; AAR 75-Graphic Design I; AAR 77-Graphic Design II; AAR 78-Lettering and Typography; AAR 80-Illustration I; AAR 83-Computer Art I; AAR 84-Graphic Production; AAR 145-Photography I; AAR 147-Photography II; AAR 162-Graphic Design III; AAR 173-Graphic Design Studio/Seminar; AAR 181-Senior Studio/Seminar; and required additional studio electives-12 units.

III. Electives — Course offerings from throughout the University to complete the 136 unit graduation requirement.

Art History Course Offerings

AAR 7. **Survey of Western Art to 1400** (4) A basic art history course exploring the major periods and movements in western art up to 1400. A lecture course with visual support to document the characteristics and styles of each period.

AAR 9. **Survey of Western Art After 1400** (4) A continuation of AAR 7, examining painting, sculpture, architecture and the variety of artistic directions from 1400 to the present. Areas to be covered include: Renaissance, Baroque, Neoclassicism, Impressionism, Abstract Expressionism, Pop Art and Conceptual Art.

AAR 108. **High Renaissance and Mannerism** (4) The examination of the art (painting, sculpture and architecture) of the 16th century in Italy and Northern Europe, focusing on the major artists of the period including Leonardo, Michaelangelo, Raphael, Bramante and Titian. The works of art will be discussed in the contexts of their artistic, historical and cultural milieu.

AAR 110. **17th Century Art-Age of Rembrandt** (4) The exploration of the art of the 17th century, focusing on the masters including Rembrandt, Vermeer, Hals, Rubens, Velasquez, Caravaggio and Bernini. The central concerns of the period will be introduced: the development of naturalism; new interests in space, time and light; the relationship to tradition, examined in the context of the historical and cultural milieu of the period.

AAR 112. **19th Century European Art** (4) Major artists and artistic movements of the period. Examined will be painting and sculpture

from Neo-Classicism through Post-Impressionism. Major artists to be studied include David, Delacroix, Courbet, Monet, Manet, Degas, Van Gogh and Cezanne.

AAR 114. **20th Century European Art** (4) Introduction of major artists and artistic movements of 20th century European art. There will be examinations of paintings and sculpture from Cubism through the contemporary scene and architecture from the Bauhaus through the International Style and its influences.

AAR 116. **Contemporary Art** (4) European and American art from World War II until the present day will be explored. Gestural abstraction, Pop, Photorealism, Happenings, Video, Performance, Conceptual and political art are a few of the trends that will be considered. Ever-expanding notions of what constitutes art in this pluralistic era will be examined.

AAR 118. **20th Century American Art** (4) A study of the major developments in painting and sculpture and photography from the early days of this century to World War II. The Ashcan School, Stieglitz Circle, the Armory Show, Precisionism, New Deal Art, the New York School and other significant trends will be examined.

AAR 120. **Chinese Art History** (4) Designed as an introduction to the arts of China, from pottery of the Stone Age to paintings of the present day. Works of art are analyzed stylistically and their meaning examined within the original political and social setting. The enduring art tradition of China will be emphasized.

AAR 122. **Japanese Art History** (4) Designed as an introduction to the arts of Japan, from prehistoric Jomon pottery to present day Westernized painting. Works of art are analyzed stylistically and their meaning examined within the original political and social setting. Emphasis will be given to the Japanese art tradition of absorbing and adapting influences from abroad.

AAR 124. **Women and the Arts** (4) Designed to provide a cross-disciplinary view of women and the arts. Women visual artists, writers, film makers, choreographers, musicians and playwrights of the last two centuries will be studied. The instructor will be assisted by guest lecturers from the University and the community. Field trips will be organized to galleries, studios, and theatrical presentations.

Studio Course Offerings

AAR 3. **Visual Arts Exploration** (4) Designed as a studio-discussion experience with emphasis on providing an opportunity to understand the practical as well as the theoretical aspects of the creative process. Included will be participation in two-dimensional and three-dimensional activities such as drawing, painting, printmaking, sculpture and ceramics.

AAR 25. **Drawing I** (3) Designed to challenge the emotional, intellectual and artistic natures of an individual so that his/her own abilities to communicate visually will increase through the development of the creative process.

AAR 27. Drawing II (3) Designed to afford the student an opportunity to build on the experiences realized in AAR 25. Focuses on greater depth, understanding and expression through a minimum of media and techniques. Prerequisite: AAR 25 or permission of the instructor.

AAR 29. Introduction to Painting (3) Explores the fundamental elements of painting involving color, texture, line and value to create form and imagery. Discussions and critiques of works as appropriate. Prerequisite: AAR 25 or permission of the instructor.

AAR 31. Design and Color (3) Initial fundamental experiences focusing on design principles and color theory.

AAR 33. Life Drawing I (3) Primary emphasis is placed on the development of visual and perceptual skills relative to drawing the human body exclusively. Covered are structural, anatomical, formal and expressive factors of the figure. Prerequisite: AAR 25 or permission of the instructor.

AAR 35. Life Drawing II (3) Designed to afford the student an opportunity to build on the experiences realized in AAR 33. Focuses on the extension of the personal expression of the nude figure. Prerequisite: AAR 33 or permission of the instructor.

AAR 41. Ceramics I (3) Basic studio course working with clay, coloring oxides, glazes, textures and fire to discover the expressive potential in ceramics. Beginning wheel-throwing as well as hand-building techniques.

AAR 43. Ceramics II (3) Develops naturally on AAR 41 with increased focus on formulation of glazes, oxidation/reduction firing effects, and demonstrated wheel-throwing ability. Special attention to an awareness of rhythm, proportion, texture, scale, appropriate glazing and unity of design. Prerequisite: AAR 41 or an equivalent course.

AAR 47. Sculpture I (3) An introduction to the three-dimensional process through a series of studio problems. A variety of sculptural concepts and media will be explored. Students will be introduced to and expected to use appropriate hand and power tools for assigned projects.

AAR 49. Sculpture II (3) Designed to afford the student an opportunity to build on the principles introduced in AAR 47. An additional variety of media such as construction, welding, carving, fiber, earth works, kinetic and electric will be employed. Individual directions, with the instructor's acceptance, will characterize the course. Prerequisite: AAR 47 or permission of the instructor.

AAR 50. Figure Sculpture I (3) An introduction to human anatomy through a series of studio problems using clay primarily. A nude model may be used occasionally. Recommended that AAR 47 be taken prior to this course.

AAR 52. Figure Sculpture II (3) An extension of the research of AAR 50. The creative use of expression, abstraction and realism through the controlled use of distortion and anatomy will comprise the major purpose of the course. A nude model may be used occasionally. Prerequisite: AAR 50 or permission of the

instructor.

AAR 60. Relief Printmaking (3) Through demonstrations, readings, discussions and studio performance the student will develop his own understanding of the woodcut, linoleum block, collagraph and other printmaking processes. Special attention to composition, effective use of value, texture and color. Prerequisite: AAR 25 or permission of the instructor.

AAR 61. Silk Screen Process (3) An introductory level course emphasizing the fundamental theory and techniques of the medium and their application in contemporary expression as both a commercial and fine art. Prerequisite: AAR 31.

AAR 63. Introduction to Printmaking (3) Introductory level course with an emphasis upon the history of the graphic arts and the fundamentals of relief, intaglio and planographic printmaking. Prerequisite: AAR 25 recommended.

AAR 65. Printmaking II (3) Intermediate level course with an emphasis on an assigned problem and a concentration upon a specific printing process. Prerequisite: AAR 63 or portfolio submission.

AAR 67. Watercolor Painting (3) A studio performance course designed to explore painting concepts and techniques through the use of water based media such as watercolor and acrylic paint. Prerequisite: AAR 29 or permission of the instructor.

AAR 69. Intermediate Painting (3) A practicing course covering fundamental aspects of painting. Problem-solving assignments relative to color, composition and technique with an emphasis on creative visual imagery. Prerequisite: AAR 29 or permission of the instructor.

AAR 75. Graphic Design I (3) Designed as a beginning course introducing a broad and thorough exposure to the graphic design field. Prerequisites: AAR 25 and 31 or permission of the instructor.

AAR 77. Graphic Design II (3) Designed to

further and expand the skills and knowledge incorporated in AAR 75. More advanced problems with the attendant upgrading of professional competency and solutions. Prerequisites: AAR 75 and 78 or permission of the instructor.

AAR 78. Lettering and Typography (3) Designed to assist the student in a deeper understanding of the art of typography. To extend the student's knowledge of its use and application in graphic design, and its use as a creative, illustrative tool. Prerequisite: AAR 31, AAR 84 or permission of the instructor.

AAR 80. Illustration I (3) Designed to expose the student to illustration as applied to the commercial field. A variety of media will be employed in rendering specific assignments. Prerequisite: AAR 25 or permission of the instructor.

AAR 82. Illustration II (3) Designed to afford the student an opportunity to build on the experiences realized in AAR 80. Prerequisite: AAR 80 or permission of the instructor.

AAR 83. Computer Art I (3) Designed to assist students in learning to create art on a full-color computer graphics system. Through lectures, demonstrations and hands-on experiences, students will explore graphic and artistic potential of the computer. Other subjects: terminology, saving and recalling images on disk, digitizing photographic images, producing "hard copy" with a film recorder.

AAR 84. Graphic Production (3) Presentation of the production methods of printing, typesetting and photographic technologies as they relate to the graphic designer. An introduction to the basics of typography, graphic design, and various presentation techniques. Prerequisite: AAR 31 or permission of the instructor.

AAR 85. Computer Art II (3) Introduction to new software (animation, business graphics, and others), expansion of skills developed in Computer Art I. Research on other graphics systems as well as the technical side of com-



puter graphics. Prerequisite: AAR 83.

AAR 87, 187. **Internship** (2-4, 2-4) Off campus, non-classroom experiences in activities related to visual arts.

AAR 89, 189. **Practicum** (2-4, 2-4) On campus, non-classroom experiences in activities related to visual arts.

AAR 131. **Visual Arts in Education I** (4) Designed to assist the student in developing an understanding of the visual arts and the way in which they interface with children's development. Concepts and processes, suitable for children through age 14, in the areas of aesthetic perception, creative expression, visual arts heritage, and aesthetic valuing, will be explored.

AAR 136. **Visual Arts Management** (4) Designed as an experiential as well as a seminar/discussion course leading to the understanding of practical experiences with a number of concepts and situations related to organizing and managing visual arts agencies and facilities.

AAR 145. **Photography I** (3) Introductory level course with an emphasis on the history of photography and the fundamentals of camerawork and black and white photography. No prerequisite.

AAR 147. **Photography II** (3) Intermediate level course with an emphasis upon darkroom and studio work and the fundamentals of color photography. Prerequisite: AAR 145 or permission of the instructor.

AAR 151. **Ceramics - Advanced Studio** (3) Open to the advanced ceramic student with the content developed by the student and instructor in a written statement and a high quality visual presentation of the stated goal. Prerequisite: AAR 43.

AAR 153. **Sculpture - Advanced Studio** (3) Open to the advanced sculpture student with the direction developed by the student and instructor with a high quality visual presentation fulfilling set goals. Prerequisite: AAR 49 or 52.

AAR 155. **Painting - Advanced Studio** (3) Open to the advanced painting student with the direction developed by the student and instructor with a high quality visual presentation fulfilling set goals. Prerequisites: AAR 67 or 69, both recommended.

AAR 157. **Printmaking - Advanced Studio** (3) Designed to provide foundational work for students considering graduate level work in printmaking or entry-level positions. Emphasis will be placed upon studio management and portfolio development. Prerequisite: AAR 63 and 65.

AAR 159. **Photography - Advanced Studio** (3) Designed to provide students with the foundational work necessary for graduate work in photography or entry level positions. Emphasis upon studio management and portfolio development. Prerequisites: AAR 145, 147 or portfolio submission.

AAR 162. **Graphic Design III** (3) An intensive individual studio involvement. Full concentration is brought to bear on the design processes, concepts and professional presentation of work. Prerequisites: AAR 77, 78 and 84.

AAR 171. **Fine Arts Studio/Seminar** (3) Designed to provide a variety of experiences

for students who are pursuing the B.F.A. degree in the areas of drawing, painting, sculpture, ceramics and/or other studies in the fine arts. Open only to B.F.A. majors in Studio Art with junior standing.

AAR 173. **Graphic Design Studio/Seminar** (3) Designed to provide a variety of in-depth experiences for students who are pursuing the B.F.A. degree in the area of graphic design. Open only to B.F.A. majors in Graphic Art with junior standing.

AAR 181. **Senior/Studio Seminar** (4) The culminating experience for all department majors in both the B.A. and B.F.A. degrees. Designed to encourage the student to build upon all previous experiences and to focus on an intensive involvement in a selected area of study. Open only to seniors.

AAR 191. **Independent Study** (2-4 units) Enrollment by permission of faculty only. Unless indicated, independent study courses may be counted only as electives.

AAR 193. **Special Topics** (3-4 units)

The privilege is reserved to hold any student work permanently. Student property left on the premises after year's end will be subject to disposal.

Biological Sciences

Professors: Anderson, L. Christianson (Chair), Hunter, McNeal, Nahhas, Richmond, Tenaza
Assistant Professor: K. Chaubal

The Department of Biological Sciences provides curricula leading to a Bachelor of Sciences or a Bachelor of Arts in Life Sciences. In addition, the Department cooperates with the Department of Chemistry in offering a Bachelor of Science degree in Chemistry-Biology. The program of studies is sufficiently flexible to prepare students to pursue careers in botany, microbiology, physiology or zoology as graduate students. Programs in the department also prepare students for professional fields such as dentistry, medicine, medical technology, nursing or physical therapy. No matter what career objective, the student will be exposed to major areas of the biological sciences, and thus will be able to make an intelligent choice of specialization in postbaccalaureate study.

Preparation for admission to the undergraduate program should include high school work in algebra, geometry, trigonometry, biology, chemistry and physics.

Candidates for the degree of Bachelor of Science in Biological Sciences must complete a minimum of 10 courses and a minimum of 38 units in Biological Sciences including: Principles of Biology (ABS 51, 61), Genetics (ABS 101), Ecology (ABS 175), Evolution (ABS 179), five electives chosen from within the offerings of the Department and above the level of ABS 61, (four units of ABS 197 may be included; four units of ABS 191 may be included only with faculty approval; ABS 89 and 93 may not be included). In addition, the follow-

ing courses are required outside of the Department: two courses in Mathematics (numbered AMA 31 or higher, statistics strongly recommended), General Physics (APS 23, 25), Inorganic Chemistry (ACH 25, 27), Organic Chemistry (one semester is required, but one year is recommended). Students are also encouraged to participate in Co-Op Internship experiences at Micke Grove Zoo, dental offices, medical clinics, and others.

A minor in Biological Sciences can be granted after the completion of five courses and twenty units of course work in Biological Sciences including the following: ABS 51, 61 or the equivalent, three additional courses in Biological Sciences chosen from those designated to count toward a major. At least three of the above courses must be taken at UOP and all of the courses counted for the minor must have the approval of the minor adviser in the Department of Biological Sciences. A student majoring in Biological Sciences, Life Sciences, Chemistry/Biology, Biochemistry or in Liberal Studies with a Biology concentration may not minor in Biological Sciences.

The Departments of Biological Sciences and Chemistry offer an interdepartmental program leading to the Bachelor of Science degree. This major is especially recommended for students with interest in medicine and graduate work in molecular biology and biological chemistry. The major is described in the cross-disciplinary majors section of the program listings.

Life Sciences Major (B.A.)

A student desiring a single subject teaching credential may elect a course of study leading to a B.A. in Life Sciences. The common requirement, at least 30 units in biology, physiology, ecology, botany, marine biology and zoology, can be met by taking the following pattern of courses: Biology (three courses: Principles of Biology [ABS 51, 61], Genetics [ABS 101]); Physiology (one course chosen from Human Anatomy and Physiology [ABS 11] or Human Physiology [ABS 81]); Ecology (one course chosen from Environmental Problems and Perspectives [ABS 35] or Natural Environments of California [ABS 110] or Ecology [ABS 175]); Botany (one course chosen from Plant Kingdom [ABS 130] or California Flora [ABS 135]); Marine Biology (one course chosen from Marine Biology [ABS 76] or Marine Birds and Mammals [ABS 122]); Zoology (one course chosen from Biology of Insects [ABS 74] or Vertebrate Biology [ABS 172]). In addition the student must meet a breadth requirement consisting of at least 20 units chosen with the approval of a faculty Life Sciences adviser and including a minimum of 15 units of General Chemistry, General Physics and Geology (AGE 83 or above), and additional units from the following areas to bring the total to at least 20 units: Chemistry (General Chemistry or above), Physics (General Physics or above), Geology (AGE 83 or above), Physical Geography, Mathematics (at the level of AMA 31 or above).

Course Offerings

ABS 11. Human Anatomy and Physiology (4) A lecture and laboratory introduction to the structure and function of the various systems of the human body. Intended primarily for non-science majors; not open to biology majors. No prerequisites.

ABS 22. Biology, Medicine and the Citizen (4) Current topics in medicine along with biological background material. Topics popularized by the press will be emphasized. Examples include "test tube" babies, cloning, herpes, AIDS and genetic engineering. Recommended for non-biology majors; not open to biology majors. No prerequisites.

ABS 31. Animal Societies (4) A lecture and laboratory study of how animal societies are organized and their relevance to understanding human social behavior. Topics covered in the course include mating systems, communication, coloration, aggression, cooperation and parental care. This course is recommended for non-biology majors at any level; not open to biology majors. No prerequisites.

ABS 35. Environmental Problems and Perspectives (4) Introduction to principles of ecology as they bear on world environmental problems. Emphasis is on biological aspects of world problems and on the interrelationships between culture and environment. Global dimension of population, resources, food, energy and environmental impact are considered. Course does not count toward biology major. No prerequisites.

ABS 39. Introduction to Botany (4) The study of plants, their diversity, structure and physiological processes. Lecture topics include metabolism, structure and development at the cellular and subcellular level, ecology, classification and diversity. Laboratory topics include microscopy, tissue structure, fossil plants and plant propagation. Recommended for non-majors. Course does not count toward a biology major. No prerequisites.

ABS 41. Introduction to Biology (4) A lecture and laboratory introduction to the concepts of biology. Physical structure, physiology, nutrition, reproduction, growth and behavior examined from the perspective of adaptation and interaction with the environment. Recommended for non-majors. Course does not count toward the biology major. No prerequisites.

ABS 45. Basic Nutrition (4) Aspects of nutrition relative to food components, nutritional practices, and the physiological, metabolic use of food by the body. Brief survey of availability, production of food and fads, fancies of human nutrition. Course does not count toward a biology major. No prerequisites.

ABS 47. AIDS and Sexually Transmitted Diseases (4) A survey of bacterial, viral, fungal and protozoan diseases of the reproductive system. About one-third of the course will concentrate on Acquired Immune Deficiency Syndrome (AIDS), emphasizing the medicobiological aspects and the ethical socio-economical problems associated with it and

other sexually transmitted diseases. Guest speakers. Recommended for non-majors. Course does not count toward a biology major. No prerequisites.

ABS 51. Principles of Biology (4) A lecture and laboratory introduction to molecular and cellular biology, cell physiology, reproductive biology, genetics, and plant diversity. Preparation for continued studies in biological science. Prerequisite: a score of 47 or higher on the UOP Basic Reading Test or completion of the recommended reading course.

ABS 61. Principles of Biology (4) A lecture and laboratory introduction to vertebrate anatomy and physiology, ecology, evolution, and animal diversity. Preparation for continued studies in biological science. Prerequisite: ABS 51 or permission of instructor.

ABS 71. Human Anatomy (4) A study of the structure of the organ systems of humans which will be illustrated in the laboratory by dissection of a cat. Prerequisites: ABS 51, 61.

ABS 74. Biology of Insects (4) A broad study of the structure and function of this class of over 700,000 different species. It includes a study of their morphogenesis, reproduction, behavior and relation to humans. The laboratory work will include at least three field trips on Saturdays in addition to the preparation of 50-75 classified insects. Both anatomy and physiology of insects will be covered in the two weekly laboratories. No prerequisites.

ABS 76. Marine Biology (4) Introduction to general concepts of community ecology, taxonomy and phylogeny, anatomical and physiological adaptations of marine organisms, and their interaction with the physical environment. Emphasis on natural history and identification of marine organisms of the Central California intertidal and subtidal environment. Lecture and film topics include: adaptation, physical factors controlling plant and animal distribution, energy flow, symbiotic interactions; physiology of diving mammals (including humans); environmental problems. Laboratory and field trip activities stress structure, taxonomy, and phylogeny. Labs involve observation of live animals, dissection of preserved specimens and field trips to the intertidal environments and to aquarium collections. No prerequisites.

ABS 81. Human Physiology (3) A review of the functions of the major organ systems of vertebrates with emphasis on the human body. Prerequisites: one year of college-level general biology; one semester of genetics suggested.

ABS 81L. Human Physiology Lab (1) Demonstration of basic physiological processes in the human body. Must be taken concurrently with ABS 81.

ABS 89. Practicum: Laboratory Assistant in Biology (2 or 4) Students attend organizational meetings during which laboratory material is discussed and then assist in the laboratory answering student questions, doing dissections, etc. Attendance at class lectures is recommended and students are expected to take lecture and laboratory examinations. Usually one laboratory meeting per week will earn two units

credit; two laboratory meetings per week will earn four units credit. Pass/No Credit grading only.

ABS 93. Special Topics (3 or 4)

ABS 101. Genetics (4) Heritable variations and their relation to structure, behavior and function of genetic material. A basic course for students concentrating on biological sciences, medical sciences and liberal arts. Recommended for the sophomore year. Prerequisites: ABS 51, 61.

ABS 110. Natural Environments of California (4) An introduction to principles of ecological geography through field experiences in selected natural environments of California and Western Nevada. Lectures, readings and discussions deal with the geological evolution of the landscape, the biological evolution of ecosystems, elementary principles of physical geography, climatology, and ecology. The course seeks to provide an ecological and geographical framework for understanding human events. No prerequisites.

ABS 122. Marine Birds and Mammals (4) An introduction to the ecology, behavior, economic importance and conservation of cetaceans, pinnipeds, otters, sirenians, seabirds and shorebirds. Physical and biological oceanography are considered as they relate to distribution and abundance of marine birds and mammals. Prerequisite: Junior standing. Open to non-majors as well as majors.

ABS 128. Animal Histology (4) A study of the tissues which comprise the organs of the body. This course is limited to animal, and specifically human, tissues. Thin sections of organs will be studied and their structure related to function. Prerequisites: ABS 51, 61.

ABS 130. Plant Kingdom (4) The five-kingdom system of classifying living organisms will be used as the framework for a survey of organisms which have classically been considered plants. Through lectures, labs and field trips students will be introduced to the morphology, reproduction and environmental requirements of all major groups of plants. Included will be material bearing on the evolutionary relationships in each group and their similarities and differences when compared to related groups. Prerequisite: ABS 51.

ABS 135. California Flora (4) The identification and classification of flowering plants, gymnosperms, ferns and fern allies as represented in Northern California. No prerequisites.

ABS 145. Microbiology (4) The biology of microorganisms with emphasis on viruses, bacteria and fungi including techniques of cultivation and identification. Prerequisite: ABS 51, 61 or equivalent and ACH 25, 27.

ABS 147. Medical Microbiology (3) A survey of microorganisms implicated in human disease; emphasis on characteristics and properties of microorganisms, chiefly bacteria viruses and fungi, responsible for pathogenesis. Prerequisites: ABS 145; ACH 121, 123 or ACH 135, 137 or permission of instructor.

ABS 147L. Medical Microbiology Laboratory (1) Methods of isolation, characterization and

identification of bacteria and fungi responsible for human disease. Must be taken concurrently with ABS 147.

ABS 151. Parasitology (4) Principles of parasitism. Biology of animal parasites with special emphasis on the protozoa, platyhelminthes, nematodes, acanthocephala and arthropods. Techniques of recovery of parasites from various vertebrate hosts; staining, mounting and identification. Prerequisites: ABS 51, 61.

ABS 153. Cell Biology (4) Cell structure and function with emphasis on the dynamic nature of the cellular environment and the methodologies of cell biology. The experimental basis of our present understanding of the cell is also stressed. Prerequisites: ABS 51, 61 and one year of college chemistry. Organic chemistry is recommended.

ABS 155. Biological Electron Microscopy (4) The processes and techniques involved in examining biological specimens with the transmission electron microscope will be covered in detail. Specimens will also be examined by scanning electron microscopy. When competence in specimen processing is achieved, each student will perform an original experiment as a term project. Prerequisites: ABS 51, 61 and one year of college chemistry.

ABS 157. Topics in Biomedical Research (4) Basic research in the areas of cell biology, biochemistry, molecular biology and physiology will be examined in their applications to current problems in medicine. Topics covered will include genetic engineering, gene therapy, transplants and AIDS. Prerequisites: ABS 51, 61; ACH 121 or 135; minimum of two of ABS 71, 81, 101, 128, 145, 153, 221 or ACH 151.

ABS 162. Comparative Vertebrate Anatomy (4) The evolution of vertebrate organ systems as revealed by comparative morphology. Prerequisites: ABS 51, 61.

ABS 166. Comparative Vertebrate Embryology (4) Representative vertebrate embryos, with emphasis on early development, and the origin and establishment of organs and organ systems. Prerequisites: ABS 51, 61.

ABS 172. Vertebrate Biology (4) Taxonomy, life history, ecology and evolutionary histories of the vertebrates. Prerequisites: ABS 51, 61.

ABS 175. Ecology (3) The structure and dynamics of populations, biotic communities and ecosystems, with emphasis upon relationships of organisms to their environments. Prerequisites: ABS 51, 61, 101.

ABS 179. Evolution (4) Lectures and readings on the mechanisms of evolutionary change in organisms. Prerequisites: ABS 51, 61, 101.

ABS 185. Comparative Animal Behavior (Ethology) (4) The ecology, evolution and motivation of animal behavior. Laboratory involves a quantitative study of animal behavior at Micke Grove Zoo. Prerequisites: junior standing in biology or psychology.

ABS 191. Independent Study (2 or 4)

ABS 193. Special Topics (3 or 4)

ABS 197. Undergraduate Research (2 or 4)

ABS 216. Advanced Microbiology (4) Introduction to virology. Recent advances in micro-

bial physiology, biochemistry and genetics. Prerequisites: ABS 145, ACH 121, 123 or ACH 135, 137 and permission of instructor.

ABS 221. Immunology (3) The nature of antigens and antibodies and their interactions. Theories of antibody formation; mechanisms of natural and acquired immunity; autoimmune diseases; transplantation immunity; tumor and cancer immunity; and allergies. Prerequisites: ABS 145, ACH 121, 123 or ACH 135, 137 and permission of instructor.

ABS 221L. Serology and Immunological Procedures (1) Laboratory procedures in immunology and serology. Prerequisites: ABS 145, ACH 121, 123 or ACH 135, 137 and permission of instructor.

ABS 234. Comparative Physiology (4) A detailed review of organ function in diverse groups of organisms. Emphasis on physiological adaptation to the environment. Prerequisite: ABS 153 or permission of the instructor.

ABS 244. Developmental Biology (4) Same as ABS 144. Special project required. Prerequisite: graduate standing.

ABS 247. Medical Microbiology (4) Same as ABS 147 and 147L. Three additional hours per week of seminar and/or special project.

ABS 251. Parasitology (4) Same as ABS 151. Special project required. Prerequisite: graduate standing.

ABS 253. Cell Biology (4) Same as ABS 153. Special project required. Prerequisite: graduate standing.

ABS 255. Biological Electron Microscopy (4) Same as ABS 155. Prerequisite: graduate standing.

ABS 268. Entomology (4) Systematics of the Class Insecta is the major study of this course. The insects as research tools in fields of physiology, behavior and cytology will also be considered. In addition to scheduled lab work students are expected to prepare a collection of 75-100 insects and conduct an individual research project. Prerequisite: an undergraduate course in the study of invertebrates or insects, or the equivalent.

ABS 272. Mammalogy (4) Biology of mammals with emphasis on systematics, ecology and morphology. Prerequisites: ABS 162 172, 175 or permission of instructor.

ABS 279. Evolution (4) Same as ABS 153. Special project required. Prerequisite: graduate standing.

ABS 291. Independent Study (2 or 4)

ABS 293. Special Topics (3 or 4)

ABS 295. Graduate Seminar (4)

ABS 297. Graduate Research (1-6)

ABS 299. Thesis (2 or 4)

Black Studies

The Black Studies major is inter-departmental and inter-collegiate, and it has four basic objectives which undergird the curriculum of its majors. First, it provides a perspective and experience by which students may understand and appreciate the social, political, economic and artistic impact of African Americans upon American culture. Second, it studies the influence of the physical and social environment of the United States on the lives of African Americans. Third, it provides a stimulus for improved communication between Black and non-Black America. And fourth, it offers students planning to work with ethnic minorities an opportunity to acquire human relationship theory and skills.

Candidates for the Bachelor of Arts degree majoring in Black Studies must complete the following courses: Prejudice and Racism, Implementation for Social Change, Ghetto Life, Cultural Contributions of the Black American and History of the Black American. Two additional courses are to be selected from throughout the University. These two courses must treat subject matter substantively relating to one or more ethnic groups.

Course Offerings

ABL 51. Introduction to Black Studies (4) This is a survey course exploring several aspects of the growing field of Black Studies. What are the principles, the philosophy, and — in short — the general substance that support the existence of Black Studies as a separate area of study? Of what importance is Black history, Black literature or Black culture, in general, and how do these subjects relate to or mesh with a liberal arts curriculum? And what of intercultural relationships between Black Americans and others; how might a consideration of this affect campus and post-campus social functioning?

ABL 97. Prejudice and Racism (4) A brief examination of the development of prejudice and racism in individuals and social groups, and a more extensive investigation into the subject matter as it affects personal and inter-group relationships.

ABL 142. Implementation for Social Change (4) A course designed to encourage students to examine their own readiness for social change, to inform them of past and current efforts of social groups to effect change and to prepare them for beginning roles as leaders or consultants in social change activities.

ABL 146. Cultural Contributions of the Black American (4) An analysis of the cultural contributions of Blacks to American societies, with a special emphasis on their influence and significance upon the current mores of social change.

ABL 164. Ghetto Life (4) The psychological, economic, religious and educational aspects of urban ghetto existence, with special reference to Black people.

Chemistry

Professors: Dodge, Gross, Jones, Matuszak, Minch (Chair), S. Rodriguez, Spreer, Wedegaertner, Whiteker

Chemistry is the scientific study of the composition, properties and transformations of matter. The emphasis in all courses offered by the Department of Chemistry is on the scientific approach to the solution of problems. A wide variety of degree programs designed to meet a range of career goals is offered. The Bachelor of Science in Chemistry degree recipients are certified by the American Chemical Society.

The Bachelor of Arts Degree is designed to give the student a broad understanding of chemistry. The B.A. degree serves as a preparation for careers in medicine, dentistry, and teaching. The candidate for the Bachelor of Arts degree must complete eight courses in chemistry, two in physics and two in calculus. The more rigorous Bachelor of Science degree prepares students for a variety of options including advanced degree studies in chemistry and biochemistry, work in the chemical industry and professional schools of medicine and dentistry. The Bachelor of Science candidate must complete twelve courses in chemistry, two in physics and four in mathematics. Virtually all Bachelor of Science and many Bachelor of Arts candidates choose undergraduate research as one of their chemistry electives. In this course the student has the opportunity to use the modern instrumentation available in the department and to work closely with faculty and graduate students on an original research project.

The following courses are required for the Bachelor of Arts degree: General Chemistry ACH 25, 27 (two semesters), Organic Chemistry ACH 121, 123 (two semesters), Analytical Chemistry ACH 141, Physical Chemistry ACH 169 or ACH 161, two chemistry electives, Physics APS 53, 55 or APS 23, 25 (two semesters) and Calculus AMA 51, 53 (two semesters).

The following courses are required for the Bachelor of Science degree: General Chemistry ACH 25, 27 (two semesters), Organic Chemistry (ACH 121, 123), Physical Chemistry (three semesters), Inorganic Chemistry ACH 171, Analytical Chemistry ACH 141, Instrumental Analysis Laboratory ACH 143, two chemistry electives, Principles of Physics APS 53, 55 (two semesters) and Calculus AMA 51, 53, 55, 57 (four semesters).

The candidates for the Bachelor of Science degree in Biochemistry will complete nine courses in chemistry, including the following: General Chemistry ACH 25, 27 (two semesters), Organic Chemistry ACH 121, 123 (two semesters), Analytical Chemistry ACH 141, Physical Chemistry (two semesters) and Biochemistry ACH 151, 153 (two semesters). Other requirements are: Principles of Physics APS 23, 25 (two semesters), General Biology (two semesters), Microbiology ABS 145, Cell

Biology ABS 153, Genetics ABS 101, one Biology elective and Calculus AMA 51, 53 (two semesters).

The Departments of Chemistry and Biological Sciences offer an interdepartmental program leading to the Bachelor of Science degree in Chemistry-Biology. This major is recommended to students interested in medicine and graduate work in molecular biology and biological chemistry.

A Bachelor of Science degree in Medicinal Chemistry is also offered in cooperation with the School of Pharmacy for students desiring this program emphasis. The latter majors are described in the cross-disciplinary majors section of the program listings.

The Department of Chemistry offers a minor in chemistry. The minor requires a minimum of 23 units and five courses including ACH 25, 27, 121 and two courses selected from ACH 123, 141, 151 and 161 or 169. Students interested in working toward the minor should contact the Chair of the Chemistry Department and file an application in the department office.

The Chemistry Department will determine the acceptability of courses taken at other institutions as satisfying departmental major and minor requirements. Transfer students are required to take at least four of their major required courses in the COP Chemistry Department.

The department requires a refundable deposit to cover laboratory equipment loss as well as a small non-refundable laboratory registration fee to cover, in part, usage of expendable materials. The amount of the deposit varies with the level of the laboratory class.

Course Offerings

ACH 22. Science: Controversy and Consensus (3) The course examines the historical development of several key ideas in science and addresses the evidence for and against the views that ultimately prevailed as the modern scientific consensus. The Copernican, Newtonian, and Darwinian scientific revolutions, as well as the rise of the atomic theory of chemical reactions and the Huttonian view of the earth, are discussed in detail. The history of science is traced from its roots in Greek and Arabic science to the rise of modern biology and chemistry in the late nineteenth century.

ACH 23. Elements of Chemistry (4) A course designed for general interest in physical science and for preparation for further study in chemistry. Three class periods and one three-hour laboratory period a week are required.

ACH 25, 27. General Chemistry (5, 5) The important general principles, theories and concepts of chemistry are studied. Three class periods and two three-hour laboratory periods a week are required. Prerequisite: high school algebra or the equivalent. High school chemistry is recommended.

ACH 93. Special Topics (3, 4)

ACH 121, 123. Organic Chemistry (5, 5) The fundamental principles of the chemistry of car-

bon compounds are systematically presented with an emphasis given to biologically important reactions and classes of compounds. The course includes functional group chemistry, nomenclature, physical properties of compounds, synthesis, stereochemistry, mechanisms and spectroscopy. Three class periods and two three-hour laboratory periods a week are required. Prerequisite: grade of "C minus" or better in ACH 27.

ACH 141. Analytical Chemistry (4) Introduces analytical methods including classical techniques, separations and selected instrumental procedures. Prerequisite: ACH 27.

ACH 143. Instrumental Analysis Laboratory (4) Advanced analytical methodology involving electronic instrumentation is offered with emphasis on practical application and "hands-on" experience, but elementary theory is introduced. Examples from spectrophotometry, chromatography and electrical methods of analysis are included. Prerequisite: ACH 141.

ACH 151. Biochemistry (5) Introduction to the biochemistry of proteins, carbohydrates, lipids, nucleic acids, metabolism and enzyme mechanisms. Three class periods and two four-hour laboratory periods a week are required. Prerequisite: ACH 123, 161 or 169, or permission of instructor.

ACH 153. Biochemistry (5) The biochemistry of replication, transcription, translation and the mechanisms of biological regulation. Includes lecture and lab. Graduating seniors and graduate students must present an original research proposal in a formal oral final examination. Prerequisite: ACH 151 or permission of instructor.

ACH 161. Physical Chemistry I (4) A classical course on equilibrium thermodynamics including the laws of thermodynamics, the Gibbs equations, the phase rule, solutions, chemical reactions, nonideal systems, multicomponent phase equilibrium and equilibrium electrochemistry. Three class periods a week are required. Prerequisites: ACH 27, APS 53, 55.

ACH 163. Physical Chemistry II (4) Quantum chemistry and applications, atomic spectra, bonding, symmetry and group theory, molecular spectra, statistical thermodynamics, transport theory of gases and ions, chemical kinetics and activated complex theory. Three class periods a week are required. Prerequisite: ACH 161 or permission of instructor.

ACH 167. Experimental Physical Chemistry (4) A laboratory course designed to illustrate experimentally the theoretical principles and methods of thermodynamics, quantum chemistry and kinetics. It provides a research orientation through the preparation of research manuscripts and oral presentations of results. Error analysis and statistical treatment of data are emphasized. Prerequisite: ACH 161 or 169.

ACH 169. Elements of Physical Chemistry (4) Principles of thermodynamics, kinetics and spectroscopy including transport phenomena, the thermodynamics of metabolism and electrochemistry. The emphasis is on applications to biological systems. Three class periods a

week are required. Recommended for pre-health science students. Prerequisites: AMA 51, ACH 27; two Physics courses (APS 53, 55 recommended).

ACH 171. **Inorganic Chemistry** (4) Ionic and covalent bonding: theory, energetics and reactivity; applications of acid-base concepts; aqueous and non-aqueous electrode potentials; coordination chemistry; theory, spectra, structure, reaction mechanisms and kinetics; introduction to organometallic chemistry; periodicity. Prerequisite: ACH 163 or permission of instructor.

ACH 191. **Independent Study** (2-4)

ACH 193. **Special Topics** (3, 4)

ACH 197. **Independent Research** (2-4) Prerequisite: ACH 25.

ACH 231. **Advanced Synthesis Laboratory** (4) Selected problems in synthesis. Prerequisite: ACH 137.

ACH 232. **Qualitative Organic Analysis** (4) One lecture period and two laboratory periods a week. Prerequisite: ACH 137.

ACH 233. **Advanced Organic Chemistry** (4) Synthetically useful organic reactions not normally covered in the introductory courses are emphasized. The reactions are grouped according to their mechanistic type and discussed in terms of their reaction mechanisms and synthetic utility. Prerequisite: ACH 123, 161 or 169.

ACH 234. **Selected Topics from Organic Chemistry** (4) Topics presented at various times under this course description include: physical organic, natural products and structure elucidation, stereochemistry, heterocycles, and carbohydrate chemistry.

ACH 243. **Advanced Instrumental Analysis Laboratory** (4) Comprehensive investigation of absorption, emission, partition and electrical methods of chemical analysis. Theoretical basis and practical experience are combined in a total course. Some background in elementary optics and electronics useful but not required. Permission of instructor required.

ACH 245. **Advanced Instrumental Methods Laboratory** (4) Team-taught course. Students select from a number of instrumental projects, including: FTNMR, GC-mass spectrometry, advanced electrochemical techniques, high pressure liquid chromatography, photochemistry, fluorescence and phosphorescence, and radioimmunoassay. Permission of instructor required.

ACH 251. **Biochemistry of Proteins and Nucleic Acids** (3) Chemical, physical and biological properties of the proteins and nucleic acids and their constituents; isolation, determination of composition, sequence, and structure; correlation of structure and biological properties. Prerequisite: ACH 151 or permission of instructor. (Cross-listed from School of Pharmacy.)

ACH 253. **Biochemistry of Enzymes** (3) The study of biological catalysis, including isolation, characterization in terms of composition and biological activity, of enzymes; mechanisms of biological catalysis; correlation of

structure and activity. Prerequisite: ACH 151 or permission of instructor. (Cross-listed from School of Pharmacy.)

ACH 264. **Selected Topics in Physical Chemistry** (4) Topics presented at various times under this course description include: advanced thermodynamics, statistical mechanics, physical chemistry of solutions, physical methods in chemistry, photoluminescence and molecular photochemistry, and advanced kinetics. Permission of instructor required.

ACH 265. **Advanced Physical Chemistry** (4) An advanced treatment of molecular structure, spectroscopy and photochemistry. Prerequisites: ACH 163 or equivalent, or permission of instructor.

ACH 271. **Advanced Inorganic Chemistry** (4) Review of basic concepts; descriptive transition metal chemistry; studies in main group and coordination chemistry; inorganic chemistry in biological systems; organometallic systems. Permission of instructor required.

ACH 274. **Selected Topics from Inorganic Chemistry** (4) Topics presented at various times under this course description include: mechanisms of inorganic reactions, bonding theory, physical methods, nuclear chemistry and geochemistry.

ACH 291. **Independent Study** (2 or 4)

ACH 293. **Special Topics** (3, 4)

ACH 295. **Graduate Seminar** (2)

ACH 297. **Graduate Research** (1-4)

ACH 299. **Thesis** (1-4)

ACH 381. **Apprentice Teaching** (1-4)

ACH 391. **Independent Study** (2 or 4)

ACH 395. **Seminar in the Teaching of College Chemistry** (2)

ACH 397. **Graduate Research** (1-6)

ACH 399. **Dissertation** (1-6)

Classics

Associate Professor: Bowsky (Chair)
Assistant Professor: Kraynak

The Department of Classics acquaints students with the cultures of Greece and Rome through the original languages as well as in English. The intention is that students be able to view their own culture in historical perspective and assess more knowledgeably the quality of contemporary life. Courses are designed to meet the needs of students preparing to teach or to pursue graduate study in classics or humanities, or who desire, for general cultural purposes, to deepen their acquaintance with the Greco-Roman origins of Western civilization.

Students seeking a Bachelor of Arts degree in Latin or Greek must complete six courses in Latin or Greek beyond the elementary level; two courses in the language not chosen as the major; and either the History of Ancient Greece and Rome or Greek and Roman Literature in English.

Students seeking a Bachelor of Arts degree in Classics must complete ten courses including the following: History of Ancient Greece and Rome, Greek and Roman Literature in English, Greek and Roman Myths, two elective courses in either Latin or Greek beyond the elementary level and two courses in the language not selected for emphasis.

The Department of Classics offers programs for four minors.

Students seeking a minor in Latin or Greek must complete four courses at the college level in the relevant language beyond the first semester and either the History of Ancient Greece and Rome or Greek and Roman Literature in English.

Students seeking a minor in Classical Languages must complete four courses at the college level in either Latin or Greek and two courses in the language not selected for emphasis.

Students seeking a minor in Classics must complete two courses at the college level in either Latin or Greek; History of Ancient Greece and Rome; Greek and Roman Literature in English; and one elective course in a classical or related subject chosen with the advice of the Classics Department or in a classical language.

Work in these minors is subject to certain restrictions for students also seeking one of the majors offered by the Department of Classics. A student seeking a Latin or Greek major cannot also seek a minor in either Classical Languages or Classics; a student seeking a Classics major cannot take a minor in either Classical Languages or in the language already selected for emphasis in the Classics major.

Course Offerings

Classics in English

ACL 31. **English Vocabulary Building** (4) Analysis of the Latin and Greek element in modern English and study of the influence of classical languages on English and modern European languages.

ACL 33. **Bioscientific Terminology** (4) Analysis of the Latin and Greek element in scientific English with special emphasis on the vocabulary of pharmacy and the life sciences.

ACL 100. **History of Ancient Greece and Rome** (4) A survey of the most significant events and movements of Greek and Roman history from the flowering of Mycenaean civilization to the death of Constantine the Great.

ACL 112. **Literature of Ancient Greece and Rome** (4) An introductory survey of the literature of ancient Greece and Rome, as represented by works of major classical authors read in English, from the epics of Homer to the poetry and prose of the Roman imperial period.

ACL 115. **Classical Mythology** (4) The Greek and Roman myths of major importance in Western literature, art and music.

ACL 193. **Special Topics** (4)

Greek

ACL 11a. First Year Ancient Greek, First Semester (4) Beginning training in the basic language skills of reading and writing, with attention to aspects of ancient Greek culture and the influence of ancient Greek on English vocabulary.

ACL 11b. First Year Ancient Greek, Second Semester (4) Continued training in reading and writing skills, study of ancient Greek culture and English vocabulary derived from Greek, with appropriate readings from classical Greek authors.

ACL 23. Intermediate Greek, Third Semester (4) Selected readings with attention to grammar as needed. Students have the option of reading in the Greek New Testament or in appropriate Classical authors. Prerequisite: second semester Greek, equivalent or permission.

ACL 25. Intermediate Greek, Fourth Semester (4) Selected readings with attention to grammar as needed. Students have the option of reading in Koine Greek or in appropriate Classical authors such as Homer, Plato or the Greek dramatists. Prerequisite: third semester Greek, equivalent or permission.

ACL 93. Special Topics (4)

ACL 127. Advanced Greek (4) Readings suited to the abilities and interests of the students. Attention to grammar and prose composition as needed. May be taken more than once with different content. Prerequisite: ACL 25 or equivalent.

ACL 191. Independent Study (2-4)

Latin

ACL 11a. First Year Latin, First Semester (4) Beginning training in the basic language skills of reading and writing, with attention to aspects of Roman culture and the influence of Latin on modern languages.

ACL 11b. First Year Latin, Second Semester (4) Continuation of training in the basic reading and writing skills; appropriate readings from Latin authors.

ACL 13a. Beginning Scientific Latin, First Semester (4) An introduction to Latin as the common language of science in the Western world until the eighteenth century. Grammar, vocabulary and forms restricted to those most frequently encountered in scientific subjects, especially the health sciences. Constant attention to etymological analysis and the development of scientific vocabulary. No prerequisites.

ACL 13b. Beginning Scientific Latin, Second Semester (4) Continuation of grammar and vocabulary study as in ACL 13a; reading of selected passages from ancient, medieval and early modern writers on medicine and related sciences. Prerequisite: ACL 13a, equivalent or permission of instructor.

ACL 23. Intermediate Latin, Third Semester (4) Selected readings from prose authors. Attention to grammar as needed; simple composition exercises. Prerequisite: second semester Latin, equivalent or permission.

ACL 25. Intermediate Latin, Fourth Semester (4) Selected readings from Vergil's *Aeneid* or other authors suited to the needs and interests of the students. Attention to grammar as needed. Prerequisite: third semester Latin, equivalent or permission.

ACL 93. Special Topics (4)

ACL 127. Advanced Latin (4) Readings suited to the abilities and interests of the students. Attention to grammar as needed; practice in prose composition. May be taken more than once with different content. Prerequisite: ACL 25 or equivalent.

ACL 151. Intensive Latin for Language Students (4) A comparative study of Latin and its relationship to modern European languages. Reading of selected texts. Prerequisite: Permission of instructor.

ACL 191. Independent Study (2-4)

Communication

Professors: Duns, Schamber, J. Timmons

Associate Professors: Day (Chair), Colbert, Hall, Koper, Nolan

Assistant Professors: Goff, R. A. Ray

The Department of Communication offers the student the opportunity to study human communication from a variety of perspectives. Coursework is offered which leads to emphases in Rhetoric and Public Address, Interpersonal Communication, Broadcast, Print, Public Relations, or Organizational Communication. Each of these provides the student with a specific approach to communication processes and includes both theoretical and applied learning experiences.

Coursework in the Department of Communication provides preparation for careers in teaching, speech writing, law, labor relations, personnel development, public relations, journalism, broadcasting, media management, international relations and many other professional areas.

Areas of major emphasis are as follows:

I. Rhetoric and Public Address

A traditional area in communication, rhetoric and public address courses stress the development of rhetorical thought from the classical period to the present as well as the historical and critical study of public speaking and speakers. Students are given first hand experiences in formulating their own thoughts into oral discourse. Courses in reasoning and argumentation are frequently taken by pre-law majors.

II. Interpersonal Communication

This area explores the nature and dynamics of human communication interaction. Emphasis is placed on communication in dyadic, group and intercultural contexts.

III. Broadcast

This area is designed to acquaint students

with the functional, operational and theoretical aspects of broadcast and mass communication. Coursework is supplemented by practical experience at radio station KUOP-FM, a National Public Radio station on campus or at other local radio or television stations.

IV. Print

Students concentrating in this area receive instruction on the nature and use of the print media and mass communication in general. Coursework focuses on news writing, reporting and editing in addition to practicum opportunities with the *Pacifican* (student newspaper) or student magazine or internships with local newspapers or magazines.

V. Public Relations

Public relations has become a highly professional field requiring knowledge and skills in all forms of communication. Courses in the area of public relations can be supplemented with internship positions. Students are provided with a broad background in both theoretical and applied areas of communication to permit application of creative solutions to public relations problems.

VI. Organizational Communication

Students concentrating in this area examine organizational structure and communication from a systems orientation. Coursework focuses on communication within an organization, conflict management and small group communication.

Internships and Practicums

The department believes that practicums and internships are an important adjunct to learning.

These experiences are available both on and off campus in the areas of radio, television, public relations, journalism, organizational communication and forensics.

Internships and practicums are available to students who meet the prerequisites. Internships and practicums are taken on a Pass/No Credit grading basis.

Internship Requirements

Students taking an internship through the Department must satisfy the following requirements: (1) The student must have a Department GPA of 3.0 and a cumulative UOP GPA of 2.5 and/or permission of the adviser to undertake an internship. (2) Four of the communication core courses (ACO 25, 27, 31 and 43) as well as appropriate emphasis area courses must be completed before the internship can be undertaken by the student. (3) The student must submit, under conditions specified by the faculty member supervising the internship, a writing or production sample appropriate to the area of the internship. (4) The internship should be taken by the student during the junior or senior year.

Independent Study and Independent Research Requirements

Students enrolling in independent study and/or independent research through the Department must satisfy the following requirements: (1) The student must have a Department GPA of 3.0 or higher and the permission of the instructor. (2) The student must have completed all category II courses for the particular emphasis area of the major.

Communication Major

The major in communication is designed to allow students to pursue an in-depth learning experience in their chosen area of emphasis while at the same time assuring that each student has experienced the discipline from each of its perspectives. Fundamental skills-building courses are built into the major program so that students work toward the improvement of their communication competencies while increasing their knowledge of the discipline.

To major in communication, students must complete the minimum requirements for one of the area emphases in the department. Each emphasis area requires completion of eleven courses. Five of the courses form the communication core, five center on the particular emphasis area and the eleventh is selected in consultation with the student's adviser. Practicums or internships do not satisfy department requirements unless specifically indicated below. No more than a total of four units of internship and practicum in any combination will count toward the major, nor may students in any case accumulate for credit more than eight units in any specific internship. (A total of four in an ACO 87 course and a total of four in an ACO 187 course.) A student may not accumulate more than four units in a specific practicum in the department.

Communication Core Courses

Each emphasis area of the department requires the completion of five courses which constitute the core of the major. The five courses are as follows: ACO 25-Foundations of Communication; ACO 27-Public Speaking; ACO 31-Introduction to Mass Communication; ACO 43-Introduction to Interpersonal Communication; and one research methods course to be selected from an approved departmental list. Communication majors are strongly encouraged to complete ACO 25, 27, 31 and 43 during their freshman and sophomore years and before undertaking advanced coursework in the Department.

The requirements for each major area emphasis are as follows:

Rhetoric and Public Address Emphasis

- I. Communication Core (5 courses).

- II. Take all of the following: Introduction to Argumentation; Development of Rhetorical Thought; Persuasion.
- III. Take two of the following: Argumentation Theory and Practice; Communication in Legal Settings; Forensic Practicum; British and American Public Address; 20th Century Speakers and Issues; Semantics and Culture; Communication in Learning Settings; News writing.
- IV. Take one additional Department course. (Excluding ACO 87, 89 and 187.)

Interpersonal Communication Emphasis

- I. Communication Core (5 courses).
- II. Take all of the following: Human Communication; Group Dynamics I; Non-verbal Communication.
- III. Take two of the following: Semantics and Culture; Communication in Learning Settings; Group Dynamics II; Persuasion; Intercultural Communication; Individual and Organizational Decision Making; Communication and Conflict; Organizational Communication Internship.
- IV. Take one additional Department course. (Excluding ACO 87, 89 and 187.)

Broadcast Emphasis

- I. Communication Core (5 courses).
- II. Take all of the following: Radio Production; Radio and Television News; Broadcast Practicum or Broadcast Internship.
- III. Take two of the following: Mass Communication Law; Theory of Mass Communication; Comparative Mass Media Systems; Mass Media and Society; News writing.
- IV. Take one additional Department course. (Excluding ACO 87, 89 and 187.)

Print Emphasis

- I. Communication Core (5 courses).
- II. Take all of the following: News writing; News Reporting; Publications Editing.
- III. Take two of the following: Newspaper Internship or Print Practicum; Mass Communication Law; Theory of Mass Communication; Comparative Mass Media Systems; Mass Media and Society.
- IV. Take one additional Department course. (Excluding ACO 87, 89 and 187.)

Public Relations Emphasis

- I. Communication Core (5 courses).
- II. Take all of the following: Principles of Public Relations; Writing for Public Relations; Public Relations Case Studies and Problems.
- III. Take two of the following: Public Relations Internship; Mass Communication Law; Theory of Mass Communication;

Mass Media and Society; Introduction to Organizational Communication; Publications Editing; Persuasion.

- IV. Take one additional Department course. (Excluding ACO 87, 89 and 187.)

Organizational Communication Emphasis

- I. Communication Core (5 courses).
- II. Take all of the following: Introduction to Organizational Communication; Group Dynamics I; Communication and Conflict.
- III. Take two of the following: Principles of Public Relations; Individual and Organizational Decision Making; Persuasion; Group Dynamics II; Intercultural Communication; Organizational Communication Internship.
- IV. Take one additional Department course. (Excluding ACO 87, 89 and 187.)

Course Offerings

ACO 25. **Foundations of Communication** (4) An introductory course for students either majoring in communication or considering a major in communication. This is a survey course which provides a history of the discipline, basic communication concepts, and an introduction to communication journals.

ACO 27. **Public Speaking** (4) A study of the basic principles of public speaking.

ACO 29. **Introduction to Argumentation** (4) A study of the process of reasoning through evidence.

ACO 31. **Introduction to Mass Communication** (4) A survey of the growth and development of mass communications in America (newspaper, radio, television, magazines, public relations) from a historical and descriptive perspective. Principles of the mass communication process.

ACO 32. **Mass Media and Society** (4) A study of the role of mass communications in society and also of problems and issues facing broadcasting and the press. Emphasis on mass media channels, communicators and audiences. Focus will be given to selected mass media effects, freedom of the press, legal and ethical restraints and related concerns in the context of social responsibility.

ACO 43. **Introduction to Interpersonal Communication** (4) Introduction to the study of human interaction that occurs in relatively informal, everyday social contexts. Using models, theories and skills of communication as take-off points, the course introduces students to dimensions related to trust, openness, feedback, listening, perception, language, nonverbal communication and communication competence. Focus is to develop an increasing student awareness of the complexities of interpersonal relationships.

ACO 87, 187. **Internship** (2-4) Experiences in a work setting, to be contracted on an individual basis. Internships are awarded on a competitive

basis and are limited to the number of placements available. ACO 187 represents advanced internship work involving increased independence and responsibility; a corresponding ACO 87 course or equivalent is a prerequisite. Students may not accumulate for credit more than eight units in any specific internship. (A total of four in an ACO 87 course and a total of four in an ACO 187 course.) Students will register for one of the courses listed below. Pass/No Credit grading only.

ACO 87a, 187a. **Newspaper Internship** (2-4) Supervised experience in news writing or editing in a work setting in the commercial press. Job conditions will be contracted on an individual basis and will be determined by the instructor and the newspaper editor. Prerequisite: see Department Internship Requirements. ACO 87b, 187b. **Broadcast Internship** (2-4) Supervised experience at an off-campus radio or television station. Job conditions will be contracted on an individual basis and will be determined by the instructor and the station manager. Prerequisite: see Department Internship Requirements.

ACO 87c, 187c. **Public Relations Internship** (2-4) Supervised experience in an off-campus work setting. Students will work in publicity, promotion, advertising or some other aspect of public relations work. Prerequisite: see Department Internship Requirements.

ACO 87f, 187f. **Organizational Communication Internship** (2-4) Supervised experience in an off-campus work setting. Students will apply communication theory and skills while working in areas of organizational functioning such as sales, the training and selection of personnel, employee relations, information systems, etc. Prerequisite: see Department Internship Requirements.

ACO 89. **Practicum** (2-4) Non-classroom experiences in activities related to the curriculum under conditions determined by the appropriate faculty member. Students will register for one of the courses listed below.

ACO 89a. **Print Practicum** (2-4) Supervised experience in news writing or editing on the student newspaper, the *Pacifican*. Assignment conditions to be determined by the instructor after consulting with the *Pacifican* editor. Supervised experience can also be acquired for work on a student magazine. Prerequisites: grade of "B" or better in ACO 121 or permission of the instructor.

ACO 89b. **Broadcast Practicum** (2-4) Supervised experience at the University public radio station, KUOP-FM. Students will work in news, production, development and other areas. Prerequisites: coursework appropriate to assignment; permission of the instructor.

ACO 89d. **Forensics Practicum** (2-4) Supervised activities in forensics including participating in individual events, Readers Theatre and debate in tournaments throughout the nation. Prerequisite: ACO 27 or permission of the instructor.

ACO 89e. **Small Group Leadership** (2) This course provides the student with the opportunity

to lead communication skills laboratories as part of the basic course in interpersonal communication. May be repeated for credit once. Permission of instructor only. Prerequisite: junior/senior standing.

ACO 89g. **Layout and Design for Print Publications I** (2) Design, make up and layout procedures, copy writing, editing, and photography for yearbooks. Skills will be developed in these areas as well as in the use of computers to produce the Epoch, the UOP yearbook.

ACO 89h. **Layout and Design for Print Publications II** (2) This is a more advanced section and continuation of ACO 89g. Students will design layouts, write copy, and take and caption photographs for the Epoch. Prerequisite: ACO 89g.

ACO 102/202. **British and American Public Address** (4) A study of speakers, movements and speeches through the 19th century. Prerequisite: ACO 27, 29 or permission of the instructor.

ACO 104/204. **20th Century Speakers and Issues** (4) A study of the issues and ideas of the twentieth century, placing emphasis upon the role of the speaker. Prerequisite: ACO 27, 29 or permission of the instructor.

ACO 111/211. **Communication in Legal Settings** (4) An oral communications course designed to help students in argumentation. There will be lectures and student performance in all of the following areas: *voir dire* examination, opening statements, direct examination, cross-examination, closing arguments and exhibits. Also, public speaking will be stressed in each of these six areas. Legal settings are used in performing the different communication skills but a business setting, or any situation in which group decision-making is required, would be equally applicable. Prerequisite: ACO 27, 29 or permission of the instructor.

ACO 114/214. **Argumentation Theory and Practice** (4) A study of argumentation theory from the classical period to the present. An examination of the uses of reasoning and evidence in a moot court setting. Prerequisite: ACO 29 or permission of the instructor.

ACO 116/216. **Development of Rhetorical Thought** (4) A study of the development of rhetorical theory from the classical period to the present with an emphasis upon a comparison of classical and contemporary models of communication. Prerequisite: ACO 27, 29 or permission of the instructor.

ACO 121. **News Writing** (4) Study and practice in the fundamentals of news writing with emphasis on news style, leads, story structure and legal and ethical aspects of journalism. This course involves in-class writing exercises and writing assignments of actual news events. Prerequisite: basic writing and typing skills; ACO 31 or permission of the instructor.

ACO 122. **News Reporting** (4) Methods of gathering and reporting the news by using interviewing techniques and library sources. Practice in reporting and writing actual news stories from specialized fields with emphasis on local

government, politics, business, courts, speeches and meetings. Legal and ethical aspects of news reporting. Prerequisite: typing skills and ACO 121, 140 or permission of the instructor.

ACO 124/224. **Publications Editing** (4) Copy editing, proofreading, headline writing and makeup and layout for newspapers, magazines, newsletters, pamphlets and brochures comprise the many elements of this course. Students will explore all phases of the editing business, including revision and rewriting of copy to make it succinct yet readable. Projects in each editing area will be required. Prerequisite: ACO 121, 140 or permission of the instructor.

ACO 131. **Radio Production** (4) Basic elements of contemporary radio production and studio practice. Required laboratory. Prerequisite: ACO 31 or permission of the instructor.

ACO 132. **Radio and Television News** (4) Techniques of gathering, writing and broadcasting news on radio and television. In-class writing laboratory with some actual reportorial assignments, utilization of wire copy, taped inserts, radio studio production. Prerequisite: ACO 31.

ACO 134/234. **Comparative Mass Media Systems** (4) A comparative study of world mass media systems and their ideological foundations. Description and analysis of contemporary press and broadcasting systems in Europe, Communist countries and selected Third World countries and regions, with emphasis on their function, structure and control. Prerequisite: ACO 31 or permission of the instructor.

ACO 135. **Principles of Public Relations** (4) Principles and methods of public relations will be discussed and analyzed. Study of the mass media as publicity channels will acquaint the students with the nature of the media, its limitations and uses. Case studies involve students in practical application of public relations activities. Prerequisite: ACO 31.

ACO 136/236. **Broadcast Administration** (4) An examination of the programming, financing, and administrative strategies of radio and television operation. The course examines traditional and contemporary management issues, including regulatory constraint, personnel policies, format design, research techniques, sales incentives, promotional campaigns, and corporate/network relations. Prerequisite: ACO 31.

ACO 137/237. **Public Relations Case Studies and Problems** (4) Advanced course in public relations. The course will engage students in case study research and application of public relations principles. Written and oral presentations; adherence to professional standards of excellence. Prerequisite: ACO 135.

ACO 138/238. **Mass Communication Law** (4) A study of laws and decisions that affect mass communications — the First Amendment, libel, privacy, free press — also, fair trial, freedom of information, Federal Communications Commission and other topics. Discussion of actual cases and their implications for the journalist, broadcaster and print manager. Prerequisite: ACO 31 or permission of the instructor.

ACO 139/239. Theory of Mass Communication (4) An overview of major theories and research in mass communication. Application of theories that explain and predict communication effects of political campaigns, advertising, entertainment and information. Theoretical areas to be covered include socialization, information, diffusion, advertising, persuasion and uses and gratifications research. The state, function and form of theory in mass communication will be discussed. Prerequisite: ACO 31.

ACO 140. Writing for Public Relations (4) Theory and practice in public relations writing in the context of publicity. Students will learn to write press releases, backgrounders, business letters and feature stories. Prerequisite: ACO 135.

ACO 141/241. Group Dynamics I (4) A study of the process of human interaction occurring within the context of the small group. Prerequisite: ACO 43 or permission of instructor. Not recommended for freshmen.

ACO 142/242. Broadcast Promotions (4) An examination of marketing and promotional activities required to operate radio and television companies. The course examines audience, message, and advertising research in order to evaluate sales and positioning strategies for broadcast. Sales presentations and promotional campaigns will be analyzed to identify effective strategies and productive audience and client response.

ACO 143. Intercultural Communication (4) Analysis of the major variables affecting interpersonal communication between persons of differing cultural backgrounds. Prerequisite: ACO 43 or permission of the instructor.

ACO 145/245. Human Communication Theory (4) A study of contemporary social-psychological theory of human interaction. Prerequisite: ACO 43 or permission of instructor.

ACO 146/246. Communication and Conflict (4) This course is offered to introduce students to some of the major elements involved in the everyday social conflicts people experience. The purpose of the course is to provide awareness and practice in the identification of potential conflict situations and the various means by which resolution may be accomplished. Prerequisite: ACO 43 or permission of the instructor.

ACO 147/247. Nonverbal Communication (4) The course examines major dimensions of nonverbal behavior exhibited by human beings in everyday social interactional contexts. Special emphasis is given to such areas as human territoriality, proxemics, kinesics and paralinguistics. Prerequisite: ACO 43 or permission of the instructor.

ACO 148/248. Individual and Organizational Decision Making (4) A study of decision making theory applied to individuals and organizations as well as opportunities to develop practical means for improving the quality of decisions made by individuals and groups. The course provides a comprehensive theory of how people cope with decisional conflicts concern-

ing management of organizations, career choice, marriage, divorce, and a variety of other significant choices. Prerequisite: ACO 43, 141 or permission of the instructor.

ACO 149/249. Introduction to Organizational Communication (4) This course takes both a theoretical and an applied approach in introducing the student to the role of communication in various aspects of organizational functioning such as motivation, leadership, decision making, conflict management, message management, etc. Prerequisite: ACO 43, 27 or permission of the instructor.

ACO 153/253. Semantics and Culture (4) A study of the influence of language, verbal and nonverbal, upon thought and behavior. Prerequisite: ACO 43 or permission of the instructor.

ACO 155/255. Persuasion (4) A study of the principles and methods of influencing behavior. Prerequisite: ACO 27, 29 or permission of the instructor.

ACO 157/257. Communication in Learning Settings (4) A study of the dynamics of communication in the teaching-learning setting with a focus upon methodological approaches. Prerequisite: sophomore standing or permission of instructor.

ACO 158/258. Language and Social Differences (4) A study of the interrelationship of language and culture, including kinesics and proxemics. Prerequisite: ACO 43 or permission of the instructor.

ACO 159/259. Group Dynamics II (4) Experience for advanced students of interpersonal and group behavior. The course requires a high tolerance for uncertainty, a strong commitment to scholarly inquiry and a desire to learn about oneself and groups through personal experience. Prerequisites: ACO 43, 141 and permission of instructor.

ACO 160/260. Communication Research Methods (4) A study of research methods appropriate for examining communication-related problems. Topics for the course include historical-critical methods, descriptive methods, experimental methods, statistical models for data analysis and research reporting and writing. Prerequisites: junior standing or permission of the instructor.

ACO 191/291. Independent Study (2-4)

ACO 193/293. Special Topics (4)

ACO 197. Independent Research (2-4)

ACO 287. Graduate Internship (2 or 4)

ACO 289. Graduate Practicum (2 or 4)

ACO 295. Graduate Seminar (4)

ACO 297. Graduate Research (1-4)

ACO 299. Thesis (2 or 4)

Communicative Disorders

Associate Professors: Fogle, Hanyak, Puich (Chair)
Assistant Professors: McKibbin, Roseberry, Smith
Clinic Supervisors: Nintz, Cole

The Bachelor of Arts in Communicative Disorders is a preprofessional program leading toward a career in rehabilitative services for speech, hearing and language impaired individuals. Coursework and clinical practicums are offered in the University's Speech, Hearing, and Language Center.

The department has a designed major which, when combined with the graduate program, leads to the academic and inresidence clinical requirements for the Certificate of Clinical Competence in Speech Pathology. This certificate is awarded by the American Speech-Hearing-Language Association.

Although the Bachelor of Arts degree in Communicative Disorders is a preprofessional degree, the opportunity is provided to establish basic identification, evaluation and rehabilitation competencies. These competencies are achieved through academic offerings and actual clinical experience.

In order to participate in the clinical experience, the student must have a 2.5 grade point average in the communicative disorders major and must successfully complete an experience as a junior clinician. The junior clinical experience usually occurs during the junior year of the program.

The undergraduate major is composed of courses offered within the department and courses offered in allied areas.

The required departmental course offerings are as follows:

ACD 121-Speech and Language Development
ACD 123-Language Behavior in Exceptional Children

ACD 125-Disorders of Articulation

ACD 127-Introduction to Audiology

ACD 129-Anatomy and Physiology of Speech

ACD 133-Aural Rehabilitation

ACD 137-Speech and Hearing Science

ACD 139-Diagnosis of Speech and Language Disorders

ACD 189a-Beginning Clinical Practicum

ACD 189b-Intermediate Clinical Practicum

ACD 195-Senior Seminar in Speech Pathology
An additional course requirement offered elsewhere in the University is:

FEG 119-Phonetics and Phonology

A student may also elect to supplement the basic curriculum in order to qualify for the California teaching credential for Clinical Rehabilitative Services Speech, Hearing and Language, and for California licensure in Speech Pathology. Information regarding credentialing and licensure may be obtained from the department. The Master of Arts degree, which is essential for certification and licensure, is also offered by the department. The Master's degree program in Speech Pathology is accredited by

the American Speech-Hearing-Language Association.

Communicative Disorders Minor

A minor in Communicative Disorders would provide a basic understanding of normal speech, language, and hearing processes, as well as an introduction to the identification of speech and language disorders.

The minor would serve as an adjunct to such programs as Education, Music Therapy, Pre-Physical Therapy, Recreation Therapy, English (Linguistics), Psychology, Communication, and Pre-Health Profession Preparation. Requirements (20-22 units)

12 units of the following:

ACD 51-Communicative Disorders: An Overview

ACD 121-Speech and Language Development
ACD 127-Introduction to Audiology

8-10 units selected from the following in consultation with a departmental adviser.

ACD 53-Beginning Sign Language

ACD 123-Language Behavior in Exceptional Children

ACD 125-Disorders of Articulation

ACD 129-Anatomy and Physiology of Speech
ACD 133-Aural Rehabilitation

ACD 137-Speech and Hearing Science

A minimum of 10 units must be completed at the University of the Pacific.

Course Offerings

ACD 51. **Communicative Disorders: An Overview** (4) An introduction to the identification and classification of various speech and language disorders in children. Open to non-majors.

ACD 53. **Beginning Sign Language** (4) An introduction to expression and comprehension through sign language. Open to non-majors.

ACD 121. **Speech and Language Development** (4) Psychosocial, intellectual and linguistic correlates. Open to non-majors.

ACD 123. **Language Behavior in Exceptional Children** (4) An introduction to the speech, language and behavioral characteristics associated with mental retardation, hearing impairment, emotional disturbance and neurological involvement. Discussion of appropriate diagnosis and therapeutic techniques.

ACD 125. **Disorders of Articulation** (4) Etiology, development and management of articulation disorders.

ACD 127. **Introduction to Audiology** (4) Survey of clinical audiology including an introduction to hearing disorders and measurement. Open to non-majors.

ACD 129. **Anatomy and Physiology of Speech** (3) Examination of the anatomy and physiology of the mechanisms of speech and hearing. Open to non-majors.

ACD 133. **Aural Rehabilitation** (4) Review, evaluation and development of techniques

employed in the teaching of communicative skills for the acoustically handicapped. Prerequisite: ACD 127.

ACD 135. **Organization and Administration of Public School Speech and Hearing Programs** (0) The speech and hearing specialist in the community with emphasis on his/her role in a school environment. Lectures and discussions led by appropriate personnel. Prerequisite: senior standing in major.

ACD 137. **Speech and Hearing Science** (3) The physics of sound and the acoustics of speech. Involves the study of the parameters of frequency, intensity and duration of sound and speech production.

ACD 139. **Diagnosis of Speech and Language Disorders** (4) Methods, demonstration and practicum in the assessment of speech and language, including interview, testing and reporting procedures.

ACD 189a. **Beginning Clinical Practicum** (2) Prerequisites: ACD 123 and 125. Letter grade only.

ACD 189b. **Intermediate Clinical Practicum** (2) Prerequisite: ACD 189a. Letter grade only.

ACD 191. **Independent Study** (2-4)

ACD 193. **Special Topics** (2 or 4)

ACD 195. **Senior Seminar in Speech Pathology** (3) Basic background in areas of cleft palate, voice disorders, and aphasia in adults. Prerequisite: senior standing in major.

ACD 201. **Investigative Methods in Communicative Disorders** (3) Exploration of various research methods and designs applicable to communicative disorders. Included is the understanding, development, implementation and interpretation of scientific research.

ACD 203. **Counseling and Behavioral Management of the Communicatively Handicapped** (2) Methods and practices of client and parent counseling. Included are techniques of behavior management in therapeutic and non-therapeutic environments.

ACD 205. **Neurological Disorders of Speech and Language in Adults** (4) Neurologically based speech and language disorders in adults will be investigated. The understanding and management of aphasia and similar language disorders are included.

ACD 207. **Disorders of Fluency** (3) Stuttering behavior in children and adults. The developmental and modification aspects of disorders of fluency will be investigated.

ACD 209. **Language Disorders in Children** (3) The nature, possible causes and management of language pathologies in children.

ACD 213. **Advanced Clinical Audiology** (3) Differential diagnosis of hearing loss.

ACD 215. **Advanced Aural Rehabilitation** (3) Advanced study of aural rehabilitation for all acoustically impaired individuals with emphasis on researching the areas of parental, familial and individual counseling, vocational and educational placement and mainstreaming, and the management of amplification systems.

ACD 217. **Management of Disorders of Phonation and Resonance** (3) Etiology, development and management of speech dis-

orders related to cleft palate and voice.

ACD 219. **Management of Disorders of Articulation** (2) Assessment, analysis and intervention strategies for disorders of articulation.
ACD 221. **Cerebral Palsy** (3) Investigation of etiologies, nature, associated problems, diagnosis and neurodevelopment therapy approaches for children and adults.

ACD 283. **Advanced Diagnostic Laboratory** (1)

ACD 285. **Colloquium in Communicative Disorders** (2) Discussions led by various professionals.

ACD 287a. **Internship in Speech and Hearing** (2)

ACD 287b. **Fieldwork in Speech and Hearing** (2)

ACD 289. **Advanced Clinical Practicum** (2)

ACD 291. **Independent Graduate Study** (2 or 4)

ACD 293. **Special Topics** (3-4)

ACD 297. **Graduate Research** (1-4)

ACD 299. **Thesis** (2 or 4)

Computer Science

Professors: Ford, D. Smith (Chair), Topp
Assistant Professors: Ibrahim, Neilsen

The Computer Science faculty are committed to providing a strong undergraduate education that:

- * meets all standards for recognition as Computer Science
- * prepares students to enter the field of Computer Science as productive contributors upon graduation
- * provides a basis for continued study and progress in the field of Computer Science
- * provides an understanding of the relationship of computers and computing to the greater social environment.

The Department offers two majors under the B.S. degree: Computer Science and Information Systems. The **Computer Science major is accredited by the Computer Science Accreditation Commission** of the Computer Sciences Accreditation Board, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the U.S. Department of Education. The Information Systems major follows curriculum recommendations of the Data Processing Management Association.

Coursework in the first two years is coordinated so that students may select a major after gaining reasonable computer experience. Minors are also available in Computer Science and Information Systems.

Each major within the Computer Science Department is designed to integrate academic preparation, career goals, and special cross-disciplinary training.

Computer Science - A student in this major will become prepared to work for computer manufacturers, software houses, university and industrial facilities, or to enter graduate school.

Information Systems - A student in this major will prepare for careers in the commercial applications of computers. The Business focus provides background necessary for a variety of computer sales and marketing opportunities.

A faculty adviser will assist students in coordinating the total educational program, including selection of major or minor and career direction.

Cooperative Education is available in computer science programs. Work assignments are made through the Office of Cooperative Education, College of the Pacific, and are supervised by the CO-OP employer and the Department of Computer Science. Students are hired on a full-time or continuing part-time basis. A CO-OP experience is required in the Information Systems major and is a strongly recommended elective in the Computer Science major.

Transfer Students - The department makes every effort to accommodate the needs of transfer students. A faculty adviser matches program requirements and a student's background. Students are encouraged to complete a Pascal programming course, lower division mathematics, physics and general education requirements prior to entering the program.

Computer Science Major

The Computer Science major is accredited by the Computer Science Accreditation Commission. The major provides a well-rounded educational base for application of the theory and practice of computer science. The major includes coursework in computing theory, programming and data structures, and systems programming, with electives available in information systems. Additional support courses are required in mathematics, engineering and physics.

Requirements (81-82 units)

A major must successfully complete the Computer Science Core courses before proceeding to advanced courses.

The specific course requirements follow.

1. **Computer Science Courses** (44-45 units)
 - A. Core Courses: (12 units)
ACS 29, 51, 53, 71
 - B. Advanced Courses: (26 units)
ACS 141, 147, 151, 153, 171, 173, 175, GEE 171
 - C. Elective Courses: (6-7 units)
Two courses chosen from: ACS 27, 49, 123, 127, 129, 154, 187a
The Co-op experience, ACS 187a is strongly recommended. A maximum of 4 units of ACS 187a, b can be counted towards the major.
2. **Support Courses** (33 units)
 - A. Mathematics (15 units)

- AMA 37 or 39, 51, 53; ACS 47
- B. Laboratory Science: (10 units)
APS 53, 55
- C. Other Science: (8 units)
GEE 173
One elective chosen from: GGE 79, ACH 23, 25, ABS 41, 51, AGE 83, 85, 95, 99 or approved science elective.
3. **Technical Communication Proficiency** (4 units)
Majors must demonstrate proficiency in technical speaking and writing skills by taking AEN 105-Technical Writing.

Computer Science Minor

Computing has become an integral part of many businesses and organizations. The computer science minor provides the student an introduction to programming languages, data structures and a three course elective package of advanced courses that can be tailored to a specific interest. It is recommended that students begin the minor program early in their college career, preferably in their freshman year.

The computer science minor is not available to students majoring in Computer Science or Information Systems.

Requirements (21-22 units)

1. **Core Courses** (12 units)
ACS 47, 51, 53, 71.
2. **Electives** (9-10 units)
Three courses, approved by minor adviser, selected from ACS 49, 141, 147, 148, 151, 153, 154, 171, 173, 175.

Information Systems Major

The information systems major is designed to prepare students for careers in the commercial applications of computers. The major includes courses in applications programming, business administration and support courses in mathematics, economics and English. A special feature of the program is a required internship experience during the junior or senior year.

Requirements (80-82 units)

1. **Computer Science Courses** (40-42 units)
 - A. Core Courses: (18 units)
ACS 27, 29, 47, 51, 53, 71
 - B. Advanced Courses: (13 units)
ACS 123, 129, 153, 187c
 - C. Elective Courses: (9-10 units)
Three elective courses chosen from: ACS 49, 125, 127, 141, 151, 154, 171.
A maximum of four units of ACS 187c, d can be counted toward the major.
2. **Business Courses** (20 units)
LBA 31, 33, 104, 105.
One elective chosen from: LBA 109, 113a, 125
3. **Mathematics Courses** (8 units)
AMA 33 or 51, and 37
4. **Economics Courses** (8 units)
AEC 53, 55
5. **English Course** (4 units)
AEN 105

Information Systems Minor

The minor is designed for students who desire to enhance their skill with a course of study in the development and application of information systems.

The information systems minor is not available to students majoring in Computer Science or Information Systems.

Requirements (22-24 units)

1. **Computer Science Courses** (18-20 units)
ACS 51, 27, 29
Three electives chosen from: ACS 25, 47, 123, 125, 127, 129.
2. **Business Course** (4 units)
LBA 31

Course Offerings

Prerequisite Policy: Only Computer Science courses passed with a grade of "C-" or better meet prerequisite requirements.

ACS 25. Computers and Information Processing (4) A general introduction to computers. Topics include: word processing; spreadsheets, principles of data communication; the structure and use of a microcomputer operating system; programming with a structured language. This course is recommended for students wishing a general introduction to computers. Prerequisite: Two years of high school algebra and a suitable score on the proficiency exam.

ACS 27. Business Data Processing Systems (3) Provides a working knowledge of the languages and tools currently available for use in business data processing. Topics include: problem solving methods using COBOL; file processing and advanced features; tools include report writers and word processing. Prerequisites: ability to program in at least one language and ACS 51 or GGE 19.

ACS 29. Introduction to Systems Analysis (3) Designed to provide an understanding of the analysis process. Topics include: trends and human factors in information systems design; analysis tools and procedures; the development life cycle; the role of the analyst; managing human response to change; communication skills, documentation and presentations; project control and management; system security; analysis as a career. Prerequisites: ACS 25 or 51 or permission of instructor.

ACS 47. Fundamentals of Mathematics and Computer Science (3) The course is designed to help students develop skills in deductive reasoning and in fundamental concepts of mathematics and computer science. Topics include proof strategies, mathematical induction, set theory, functions, relations, modular arithmetic, number systems and computer codes, logic, and Boolean Algebra. Prerequisite: Two years of high school algebra and suitable score on placement test.

ACS 49. Introduction to Artificial Intelligence (3) An introduction to the history and foundations as well as the major applications of

artificial intelligence. Topics include: why we think a machine could think, knowledge representation, automated inference techniques, search, natural language processing, expert systems and neural networks. There will also be programming assignments in an AI language such as PROLOG or LISP. Prerequisite: ACS 25, 51, or equivalent, or permission.

ACS 51. Introduction to Computer Science (3) Designed for majors and other students with strong interests in the area. A structured programming language, Pascal, is used to introduce the concept of structured problem-solving techniques. Algorithm development is stressed, along with the basic concepts of programming such as assignment, control of execution sequence and iteration. Static data structure and types are used as problem solving tools. Records and files are introduced. Prerequisites: two years of high school algebra and suitable score on the proficiency exam.

ACS 53. Programming Methodology and Data Structures (3) Programming Methodology: user and software design specifications, modularity and refinement; ADT's and reusable code; structured coding; program testing, maintenance and verification. Data Structures: arrays, records, strings, lists, stacks, queues and files. Prerequisite: ACS 51.

ACS 71. Assembly Language Programming (3) Structure of a computing system. Computer arithmetic. Motorola 68000. Instructions and addressing modes. Internal data structure representation. I/O routines. Arithmetic operations. Stacks and subroutines. Prerequisite: ACS 51 or GGE 19.

Information Systems

ACS 123. Communications System Analysis (3) This course is an overview of the user aspects of the communications hardware and software currently available for use in the information system environment. Topics will include: planning and analysis of communication systems; comparison of communication codes and their relative efficiencies; capacity of a voice grade circuit; analog modulation techniques; asynchronous and synchronous transmission protocols; modems and their applications in networks; front end processors; network configuration, management and design. Prerequisite: ACS 25 or 51.

ACS 125. Information Systems Management (4) An introduction to the processes and skills used to manage an information system. Topics include: evaluation and management of information systems operations; evaluation, acquisition and management of applications packages as well as hardware and system software; life cycle costing, the time value of money; maintenance and redevelopment of systems and applications; quality control and system security; relationships with user departments; information systems departmental organization; information systems integration and growth. Prerequisite: ACS 25 or 51.

ACS 127. Decision Support Systems (3) Provides the skills necessary to design and imple-

ment effective decision support systems. Topics will include: the definition and characteristics of a DSS; decision making and decision support; DSS classifications; the state and production systems approach to DSS; building a data base knowledge system; language systems for data base knowledge systems. Prerequisite: ACS 27 or 53.

ACS 129. Advanced Systems Analysis (3) Designed to provide students with a working analysis experience. Documents and presentations generated during this course will be of professional quality and depth. Prerequisites: ACS 27 or 53, and 29.

Computing Theory

ACS 141. Programming Languages and Environments (3) Characteristics of programming languages and run-time environments. Topics include implementation of data structures, subprograms, recursion, parameter passing, scope of variables, dynamic memory allocation, system exception handling, re-entrant and position independent code, support for concurrency/parallel execution, interprocess communication, and comparison of programming languages and environments. Prerequisites: ACS 47, 53 and 71 or permission.

ACS 147. Computing Theory (3) This course focuses on theoretical concepts required in computer science. Topics include automata theory, Turing machines, computability and introduction to formal language theory. Prerequisite: ACS 47 and 53, or permission.

Software Engineering and Data Structures

ACS 151. Algorithms and Programming Techniques (3) Efficient algorithm development and structured program design techniques are developed. Principles and techniques of computational complexity. Searching and sorting are used for algorithm development and comparison. Recursive algorithms. Additional topics include: NP-completeness; tools and methodologies for software engineering. Prerequisites: ACS 47 and 53, or permission of instructor.

ACS 153. Advanced Data Structures (3) Logical and physical organization of data files. Sequential files, hash files, index sequential files, inverted files, multiple-key files. Techniques for sorting files. Prerequisite: ACS 53.

ACS 154. Data Base Systems (3) Data management objectives. The three families of data base systems: hierarchical, network and relational. Special emphasis on the relational models: normal forms, SQL, views, constraints, distributed database systems. Data dictionaries, logical vs. physical organization of data. Prerequisite: ACS 153 or permission of the instructor.

Systems Programming

ACS 171. Systems Programming I (4) The C programming language as a vehicle for systems programming. Automated scanners and assemblers. I/O programming, exception processing and interrupts. Course project. Prerequisites: ACS 53 and 71.

ACS 173. Systems Programming II (3) Stand alone C programming. Linkers, loaders and code level debuggers. Principles of operating systems. Concurrent programming. I/O drivers. Prerequisites: ACS 171.

ACS 175. Operating Systems (3) Studies in applied operating systems including UNIX and at least two other operating systems. Topics include: virtual memory management, process handling, windows based interfaces and networking. Prerequisite: ACS 171.

Internship/CO-OP

ACS 187a, b. Internship in Computer Science (2-4) Supervised experience in an approved work setting to be contracted on an individual basis. Four units will be awarded for a full-time, one semester experience. Fewer units may be awarded for part-time experiences. May be repeated for a total of eight units. Pass/No Credit grading only. Prerequisite: ACS 47, 53, 71 and junior standing.

ACS 187c, d. Internship in Information Systems (2-4) Supervised experience in an approved work setting to be contracted on an individual basis. Four units will be awarded for a full-time, one semester experience. Fewer units may be awarded for part-time experiences. A total of four units are required for completion of the Information Systems major. May be repeated for a total of eight units. Pass/No Credit grading only. Prerequisite: ACS 53, 27, 29 and junior standing.

Special Areas

ACS 93. Special Topics (lower level) (3, 4)
ACS 191. Independent Study (2-4) Student-initiated projects covering topics not available in regularly scheduled courses. A written proposal outlining the project and norms for evaluation must be approved by the department chairperson.

ACS 193. Special Topics (upper level) (3, 4)

Drama and Dance

Professors: D. Persels, Wolak, S. Persels (Chair)
Assistant Professors: Eckern, McCalley

The Department of Drama and Dance maintains a balance between theoretical and practical learning in all its programs. Students may earn Bachelor of Arts degrees in Dramatic Arts: Drama Emphasis, Dramatic Arts: Dance Emphasis, or in Pre-Dance Therapy. Students pursuing a Liberal Studies major may elect a 20-unit concentration in either Drama or Dance. These concentrations are specially designed by the student to meet his/her particular needs. Liberal Studies majors desiring to concentrate in Drama or Dance should contact the Chairperson of the Department of Drama and Dance for further information. Students who are not majors may elect a minor in Drama or a minor in Dance.

Students seeking a single-subject credential in English may do so by completing the Drama major, five selected English courses and several education courses. Specific requirements in English and education are detailed in the School of Education section of this catalogue. Students interested in secondary school teaching may also obtain a supplemental teaching credential in drama or dance by combining a major in one of the certified teaching disciplines such as English with a modified core of drama or dance courses.

Since the Department of Drama and Dance is primarily concerned with academic and educational theatre, it maintains a production schedule each year that draws from all periods and types of drama. The Pacific Dance Forum is an intimate showing of works in progress presented in the Dance Studio, while the Spring Dance Concert is a fully produced show that often features guest artists and choreographers. Various dance styles are featured in these concerts. Auditions for the department's plays, musicals and dance concerts are open to all students and staff of the University. Performances are given on the proscenium stage of the Long Theatre, the intimate flexible black box DeMarcus Brown Studio Theatre in the Drama

Building and the Dance Studio all of which are located on the south campus in close proximity to each other.

The department's academic program features training in both performance areas and technical theatre, as well as courses in dramatic literature, theatre history, choreography, movement and body therapies and kinesiology, puppetry and theatre management.

University and College regulations limit the number of units of credit for all types of internship, activity and practicum courses that students can apply toward graduation to no more than 20 units. Students are limited to no more than eight units of APR 11, 13 and ADR 13 courses. The 20-unit limit applies to such courses as APR 11, 13, ADR 13 and 189.

Requirements for each of the departmental majors are listed below. For further information contact the Chair of the Department of Drama and Dance.

All students seeking a Bachelor of Arts degree in Dramatic Arts must successfully complete the following core requirements (26 units):

- ADR 10 Introduction to the Theatre
- ADR 12 Expression Through Movement
- ADR 13 or 23 (2 units) Dance Technique
- ADR 17 Beginning Acting

- ADR 41 Technical Theatre
- ADR 43 Stage Costume
- ADR 96 History of the Theatre

Requirements for the **Drama emphasis** also include the following courses (16 units):

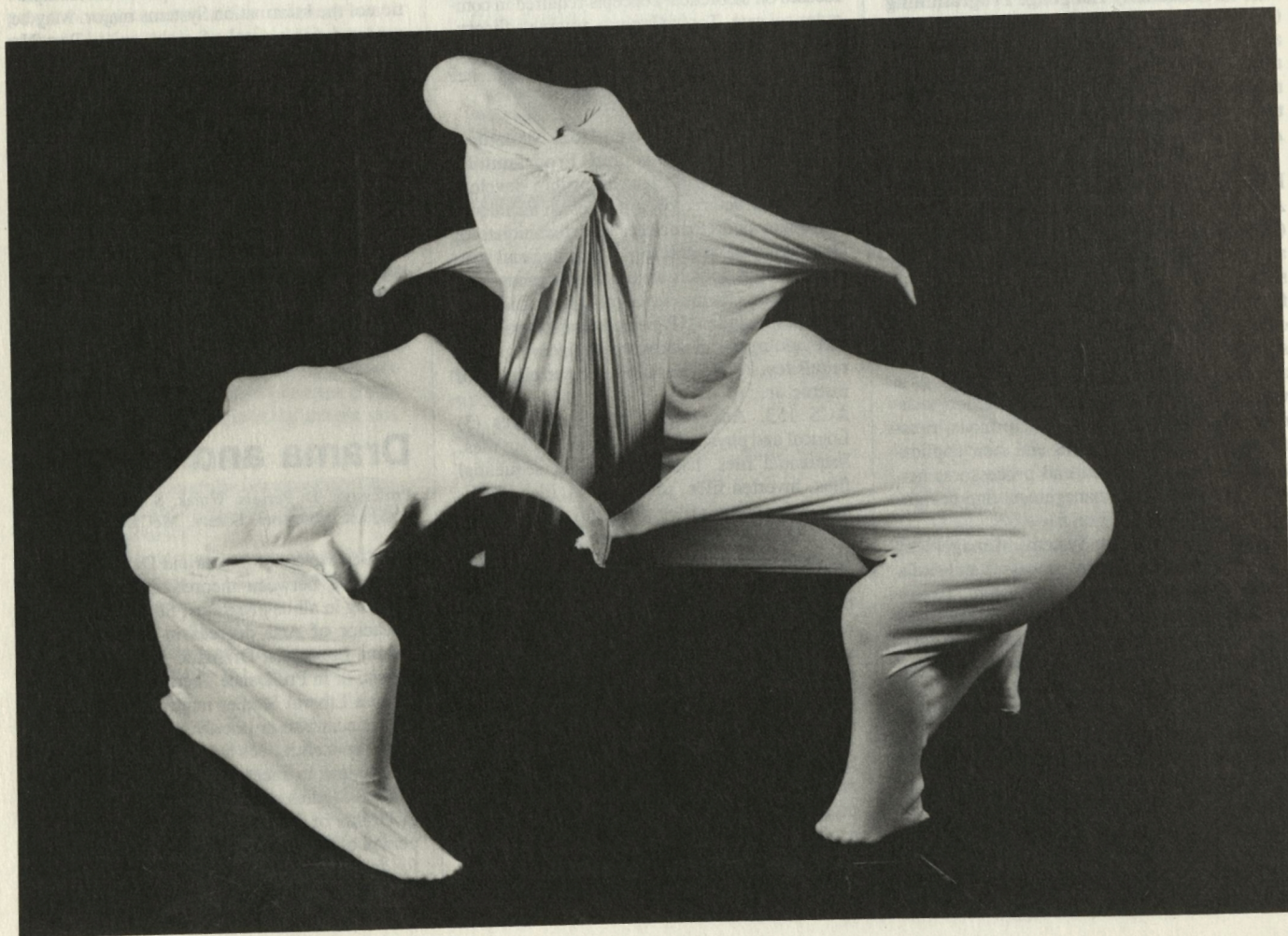
- ADR 44 Stage Makeup
- ADR 137 World Drama
- ADR 161 Directing
- ADR 163 Theatre Management

Requirements for the **Dance emphasis** also include the following courses (18 units):

- ADR 13, 23 or 123 (an additional 8 units) Dance Technique
- ADR 27 Fundamentals of Choreography
- ADR 29 Choreography and Accompaniment
- ADR 53 Introduction to Movement and Body Therapies
- ADR 121 Dance Improvisation and Choreography

All Dramatic Arts degree candidates will also complete the capstone course:

- ADR 197 Independent Research: Senior Project
- AND



All majors will successfully complete a minimum of 8 departmentally approved production assignments; junior transfers, a minimum of 4. Production contracts are available in the department office.

Students seeking a Bachelor of Arts Degree in Pre-Dance Therapy must successfully complete the following major requirements (45 units):

Ten units of the following:

- ADR 13a-f Beginning Dance Technique
- ADR 23a-j Intermediate Dance Technique
- ADR 123a-f Advanced Dance Technique
- All of the following:
 - ADR 27 Fundamentals of Choreography
 - ADR 29 Choreography and Accompaniment
 - ADR 35 Expression Through Movement
 - ADR 53 Introduction to Movement and Body Therapies
 - ADR 121 Dance Improvisation and Choreography
 - ADR 128 Dance Kinesiology
 - ADR 189e Practicum: Dance Therapy
 - ADR 197 Independent Research: Senior Project
 - APY 111 Abnormal Psychology
 - ABS 11 Human Anatomy and Physiology
 - ETH 111 Introduction to Creative Arts Therapy

Production Requirements: Pre-Dance Therapy Majors will successfully complete a minimum of 8 departmentally approved production assignments; junior transfers, a minimum of 4. Production contracts are available in the department office.

The minimum requirements for Drama and Dance minors are listed below. Students are encouraged to complete the course work across the full term of their undergraduate careers and to complement their programs with a varied schedule of additional drama and dance courses pertinent to their interests. Both Drama and Dance minors must complete cast or crew assignments on a minimum of four productions in the Department.

Drama Minor (24 units)

- ADR 10 Introduction to the Theatre
- ADR 17 Beginning Acting
- ADR 41 Technical Theatre
- ADR 43 Stage Costume
- ADR 96 History of the Theatre
- ADR 137 World Drama

Students majoring in Dramatic Arts: Dance Emphasis may not pursue a Drama minor.

Dance Minor (20 units)

- ADR 27 Fundamentals of Choreography
- ADR 29 Choreography and Accompaniment
- ADR 35 Expression Through Movement
- ADR 121 Dance Improvisation and Choreography

And 10 units from the following:

- ADR 13a-h Beginning Dance Technique
- ADR 23a-g Intermediate Dance Technique
- ADR 123a-f Advanced Dance Technique

Students majoring in Dramatic Arts: Dance Emphasis or Pre-Dance Therapy may not pursue a Dance minor.

Course Offerings

ADR 10. Introduction to the Theatre (4) An introduction to general theories and practices in the various areas of theatre: technical, historical, costuming, performance and production. Students will attend available theatre productions and participate in theatre laboratories to measure theory against practice and to experience the theatre in action.

ADR 12. Expression Through Movement (4) Designed for dance and drama majors and non-majors alike, this course introduces the students to several theoretical approaches to the implications of movement in education, therapy and aesthetic expression. Students will explore basic Laban-analysis components and creative-movement elements. The application of the principles of movement are directed toward many disciplines. Students will be assigned a variety of out-of-class observations, class presentations and written assignments.

ADR 13. Dance Activity (1) Beginning experiences in dance in which students are taught the basics of the particular dance forms such as ballet, jazz, modern, folk and tap. No previous dance training is required. Pass/No Credit grading only. No more than eight units of ADR 13 or APR 10 can be credited for graduation. Any particular ADR 13 may be repeated for credit once.

ADR 13a. Ballet: Beginning I (1) A beginning I level dance technique class which introduces the student to the principles of ballet: terminology, technique, style, musicality, placement and strength. No previous dance training is necessary. Pass/No Credit grading only.

ADR 13b. Ballet: Beginning II (1) A beginning II level dance technique class which provides developmental training, beyond the introductory level, in the principles of ballet: terminology, technique, style, musicality, placement and strength. Additionally, adagio and allegro movements are introduced. Prerequisite: ADR 13a or permission of instructor. Pass/No Credit grading only.

ADR 13c. Jazz: Beginning I (1) A beginning I level dance technique class which introduces the student to the principles of jazz: technique, style, line, rhythm, isolations, flexibility, strength and percussion. No previous dance training is necessary. Pass/No Credit grading only.

ADR 13d. Jazz: Beginning II (1) A beginning II level dance technique class which provides developmental training, beyond the introductory level, in the principles of jazz: technique, style, line, rhythm, isolations, flexibility, strength and percussion. Additionally, students will be introduced to jazz improvisation, polycentrics, adage and more complex rhythms. Prerequisites: ADR 13c or permission of instructor. Pass/No Credit grading only.

ADR 13e. Modern Dance: Beginning I (1) A

beginning I level dance technique class which introduces the student to the principles of modern dance: technique, style, musicality, alignment, centering, flexibility and strength. No previous dance training is necessary. Pass/No Credit grading only.

ADR 13f. Modern Dance: Beginning II (1) A beginning II level dance technique class which provides developmental training, beyond the introductory level, in the principles of modern dance: technique, style, musicality, alignment, centering, flexibility and strength. Additionally, students will be introduced to dance improvisation and composition. Prerequisites: ADR 13e or permission of instructor. Pass/No Credit grading only.

ADR 13g. Tap: Beginning I (1) Students will be introduced to the basic techniques and terminology of tap dancing. Simple time steps, rhythms and combinations will be taught. Tap shoes are required. Pass/No Credit grading only.

ADR 13h. Tap: Beginning II (1) A beginning level dance technique class which focuses on the development of the technique and skills of tap. Tap shoes are required. Pass/No Credit grading only.

ADR 13i. Folk Dance (1) An introductory course in which various line, circle and couple dances from the United States and Europe will be taught. Pass/No Credit grading only.

ADR 13k. Apprentice Company Class (1-2) A class for students, selected on the basis of audition, to apprentice the members of the Pacific Dance Theatre Company. Concurrent enrollment in dance technique, acting and/or other performance class is highly encouraged. Pass/No Credit grading only.

ADR 15. Oral Interpretation (4) Students analyze literary works and present them orally in the classroom. Attention is focused on the fundamentals of vocal and gestural communication, with particular emphasis on spoken language skills. Interpretive materials will be chosen primarily from prose. Evaluations of student work will be based on both written analysis and oral delivery of literary materials in solo, duet and occasional group performance.

ADR 17. Beginning Acting (4) An introduction to the theories and techniques of acting. Fundamental skills of acting will be explored through exercises, character analysis, scene study and improvisation.

ADR 21. Intermediate Acting (4) An in-depth characterization and scene-study class that will explore acting theory. Student actors critique acting assignments, prepare scene analyses, define character objectives and intentions, and perform a series of scenes and audition pieces. Contemporary and some classical dramatic literature will be explored. Effort will be devoted to solving individual acting problems. Final projects will include formal written analyses, solo and ensemble presentations. Prerequisites: ADR 11 or its equivalent.

ADR 23a. Ballet: Intermediate I (2) An intermediate I level dance technique class which focuses on terminology, technique, style,

musicality, adagio, allegro and performance. Students are expected to attain reasonable proficiency in technical and performance competencies in ballet. Prerequisites: ADR 13a, 13b or permission of instructor.

ADR 23b. Ballet: Intermediate II (2) An intermediate II level dance technique class which focuses on terminology, technique, style, musicality, adagio, allegro and performance. Students are expected to attain increased proficiency in technical and performance competencies in ballet. Prerequisites: ADR 13a, 13b, 23a or permission of instructor.

ADR 23c. Jazz: Intermediate I (2) An intermediate I level dance technique class which focuses on technique, style, rhythm, isolations, adagio and percussion. More emphasis will be placed on performance techniques and jazz choreography will be introduced. Students are expected to achieve reasonable proficiency in technical and performance competencies in jazz dance. Prerequisites: ADR 13c, 13d or permission of instructor.

ADR 23d. Jazz: Intermediate II (2) An intermediate II level dance technique class which focuses on technique, style, rhythm, isolations, adage, percussion and performance. Additionally, students will be introduced to the use of inner monologue and intent of movement. Students are expected to attain increased proficiency in technical and performance competencies in jazz dance. Prerequisites: ADR 13c, 13d, 23c or permission of instructor.

ADR 23e. Modern Dance: Intermediate I (2) An intermediate I level dance technique class which focuses on technique, style and performance. Students are expected to attain reasonable proficiency in technical and performance competencies in modern dance. Prerequisites: ADR 13e, 13f or permission of instructor.

ADR 23f. Modern Dance: Intermediate II (2) An intermediate II level dance technique class which focuses on technique, style and performance. Students are expected to attain increased proficiency in technical and performance competencies in modern dance. Prerequisites: ADR 13e, 13f, 23e or permission of instructor.

ADR 23g. Tap: Intermediate I (2) An intermediate I level dance technique class in which students are guided to increased levels of competence and individual command of the techniques and skills of tap. Students are expected to attain reasonable proficiency in performing this dance form. Permission of the instructor.

ADR 23j. Musical Theatre Dance (2) Designed for students interested in learning something about dancing in musical comedy, musical theatre and operetta. Such dance forms as tap, modern, ballet and jazz are surveyed in relation to the needs of movement and choreography in musical theatre. Students learn stylistic and choreographic dance variations from selected examples of musical theatre. Permission of the instructor.

ADR 23k. Junior Company Class (1-2) A special class for students who have auditioned for the Pacific Dance Theatre Company and have been accepted. Students who have been

assessed at a competent level of dance ability are assigned to the Apprentice Company. Concurrent training in intermediate dance technique is strongly recommended for Apprentice Company members. May be repeated for a maximum of 4 credits.

ADR 26. Readers Theatre (4) An introduction to the special techniques of Readers Theatre. Attention is given to the mounting of and performance in productions, to the techniques of oral interpretation and the playing of multiple roles, and to the varieties of literature appropriate to this form of drama. Usually there is a final project resulting in a public performance by the class.

ADR 27. Fundamentals of Choreography (2) Study and practice of fundamental elements of dance composition, including the use of space, time, dynamics, shape and various choreographic forms. Students will be responsible for research in choreography, the completion of choreographic assignments and of a final choreographic work. Prerequisites: Completion of ADR 13e, 23e, 123e or permission of instructor.

ADR 29. Choreography and Accompaniment (2) Study and practice of the application of music/sound to dance composition, including the use of metered, rhythmic, ahythmical, syncopated, silent, instrumental, and lyrical accompaniment. Students will be responsible for the completion of choreographic and musical assignments and of a final choreographic work. Prerequisites: Completion of ADR 13e, 23e, 123e or permission of instructor.

ADR 30. Voice and Movement for the Theatre (4) An experiential course based on a holistic integration of physical and vocal aspects of expression involving the processes of centering, flexibility, extension and control. Specific explorations of such areas as vocal tone, mime, stage diction and kinesthetic awareness are included. Assignments may include monologues in prose and verse, mime vignettes, songs and work in dialects.

ADR 41. Technical Theatre (4) An introduction to the basic skills and techniques of design, lighting and construction in the theatre, ranging from basic tools and materials to practical problems. Application will be achieved by work on current productions. Four lab hours required per week. Minimal additional fees for materials may be assessed.

ADR 43. Stage Costume (4) An introduction to the basic tools, techniques and materials used for theatrical costuming. Attention will be paid to pattern drafting and period styles as well as the functions and principles of stage costume design. Students will be expected to apply their skills in the current Departmental productions. Four lab hours required per week.

ADR 44. Stage Make-up (4) An introduction to the basic techniques, materials and theory used in theatrical make-up, taking into consideration the requirements of stage lighting and production styles. Particular attention will be paid to the problems of creating age, character, physical correction and modeling of features.

Students will be expected to apply their skills in work on current productions in the University's theatres.

ADR 53. Movement and Body Therapies (4) An introduction to the following areas and concepts of the use of movement in body therapies examined from the perspective of effort/shape: 1) Laban Movement Analysis; 2) developmental movement patterns; 3) observation and analysis of movement themes.

ADR 55. Puppetry (3) The study of various puppet forms, with practical experience in constructing and manipulating puppets and staging puppet presentations. Particular attention will be paid to the creative uses of puppetry (in conjunction with music, art, storytelling, drama and movement) in education, therapy and recreation. Students will develop presentations to demonstrate some particular application of the art and craft of puppetry.

ADR 96. History of the Theatre (4) A survey of theatre development from its beginning in Western culture to the present: a history of theatre and stage design, as well as production techniques characteristic of each era of theatre development. Attention is paid to major texts, figures and theatrical events that illustrate the unfolding history of drama and that lead to our contemporary theatre.

ADR 111. Advanced Acting (4) An accelerated and intensive study in character development and acting method for the serious theatre student. Texts for acting assignments are drawn from various areas of dramatic literature. Theoretical perspectives from such sources as Stanislavski, M. Checkhov, Brecht, etc., are reviewed through applied study in scenes and improvisations. Some attention is given to problems of acting styles. Prerequisites: a basic acting course, permission of the instructor.

ADR 121. Dance Improvisation and Choreography (2) Elements of improvisation and composition in dance (space, shape, time, weight, flow, theme and development, and performance techniques). The student will be responsible for one research project within the area of dance improvisation/composition as well as for the completion and presentation of one choreographic work. Prerequisite: Completion of at least one dance course (or equivalent) or permission of instructor.

ADR 123a. Ballet: Advanced I (2) An advanced level dance technique class which focuses on excellence in ballet technique and performance. Prerequisites: ADR 23a, 23b or permission of instructor.

ADR 123b. Ballet: Advanced II (2) An advanced level dance technique class which focuses on excellence in ballet technique and performance. Prerequisites: ADR 123a or permission of instructor.

ADR 123c. Jazz: Advanced I (2) An advanced level dance technique class which focuses on excellence in jazz technique and performance. Prerequisites: ADR 23c, 23d or permission of instructor.

ADR 123d. Jazz: Advanced II (2) An advanced level dance technique class which

focuses on excellence in jazz technique and performance. Prerequisites: ADR 123c or permission of instructor.

ADR 123e. Modern Dance: Advanced I (2) An advanced level dance technique class which focuses on excellence in modern dance technique and performance. Prerequisites: ADR 23e, 23f or permission of instructor.

ADR 123f. Modern Dance: Advanced II (2) An advanced level dance technique class which focuses on excellence in modern dance technique and performance. Prerequisite: ADR 123e or permission of instructor.

ADR 123k. Senior Company Class (1-2) An advanced level of dance training. Students are expected to be able to demonstrate a fairly high degree of technical proficiency and performance ability. Students must be accepted into the Pacific Dance Theatre Company. Concurrent training in intermediate dance technique is strongly recommended for Senior Company members. Letter grade only. May be repeated for a maximum of 4 credits.

ADR 127. Storytelling and Creative Drama (3) Principles and practice in telling stories to children; creative drama for children. Laboratory experience included.

ADR 128. Dance Kinesiology (4) A study of human skeletal and muscular systems, muscular imbalances, physiological support systems, body types, injury and conditioning, all in relation to the specific needs of dancers. Prerequisite: ABS 11 or permission of instructor.

ADR 137. World Drama (4) Students will read, discuss and analyze a selected list of hallmark plays of the world theatre. The plays to be studied will range from the classical Greek theatre to realism and contemporary genres such as absurdism. Formal consideration will be given to the stylistic, thematic, historical, dramaturgical and theatrical aspects of the plays. Prerequisite: Competence in expository writing.

ADR 146. Costume History and Design (4) An historical survey of Western theatrical costume and design with attention to changes in style and construction methods appropriate to various periods. Students will design period costumes using various rendering techniques: pen and ink, water-color, pastels, pencil, acrylics and collage. Students will be expected to apply their skills to current productions in the University's theatres. Prerequisite: ADR 43 or permission of instructor.

ADR 150. Stage Design (4) This course will review the history of stage design and examine illustrations of significant theatrical designs. Students will be provided with opportunities to design scenery and prepare renderings or models. The course intends to make students aware through theory and practice of the practical concerns and creative possibilities of stage designing. Prerequisite: ADR 41.

ADR 161. Directing (4) A study of the theories, principles, and practice of directing for the stage through directing projects for classroom presentation. Prerequisites: ADR 11, 35, 41, 51, either 135 or 137, junior status, and

permission of the instructor.

ADR 163. Theatre Management (4) Theory and practice of theatre operations, organization and administration: stage management, production coordination, box office, promotional and touring procedures. Students will be expected to complete laboratory hours in management or administrative assignments related to current productions in the Department of Drama and Dance. Prerequisites: ADR 10 or its equivalent and permission of the instructor.

ADR 172. Playwriting (4) A course in the composition of dramatic scripts intended for the stage. Dramatic structure and theatrical techniques of playwriting will be studied. Students will read the text, keep a writer's log, complete preliminary playwriting exercises and submit a full-length play or set of related short plays to constitute a full evening of theatre. Prerequisites: Samples of creative writing, verification of adequate theatrical experience, or completion of AEN 175/275. Permission of the instructor is required.

ADR 189. Practicum in Theatre and Dance (2) Opportunities for students to make practical application of their knowledge and skills under supervised conditions in the areas designated below. Only one practicum may be taken per semester, and each practicum may be taken only once for credit. No more than eight units of practicum may be counted toward graduation. Permission of the instructor is required before registration. Pass/No Credit grading only.

ADR 189a. Performance (2) Supervised experience in rehearsals and performance.

ADR 189b. Technical (2) Supervised experience in various technical areas, including set design, construction, painting, special effects, etc.

ADR 189c. Costuming and Make-up (2) Supervised experience in various areas of costuming and make-up, including design, construction, maintenance, etc.

ADR 189d. Production (2) Supervised experience in various offstage functions, including public relations, box office, publicity, stage management, production coordination, etc.

ADR 189e. Dance Therapy (4) Supervised experience in a therapeutic setting, involving extensive planning and evaluation by the student. This practicum course is intended for senior pre-dance therapy majors only.

ADR 189f. Pedagogy (2) Supervised experience in developing, teaching and evaluating a drama or dance class. Possible settings include UOP, private studios, public or private schools, or recreational settings.

ADR 191. Independent Study (2-4)

ADR 193. Special Topics (4)

ADR 197. Independent Research: Senior Project (2) An upper division, student-developed learning experience that requires the student to plan and complete an independent research project for a minimum of two units. The project may involve scholarly research in critical, historical, production or creative aspects of the drama and/or the dance. All ma-

jors shall design projects which demonstrate a synthesis of the training received in the major and originality of perspective. Each project will be under the guidance of a faculty member and the project will be reviewed by a faculty committee. Prerequisites: Senior status, within 12 units of completion of the major and approval of the faculty.

Economics

Professors: Carew, Flynn
Associate Professors: Herrin, Keefe, Meyer (Chair)
Assistant Professors: Opiela, Warner

Economics is concerned with how people earn a living and how they decide to spend their incomes. It examines how a society decides to use its limited resources to produce goods and services. Economics also examines how a society decides to distribute those goods among its members.

Economics provides the tools for deciding how society may be improved by changing the use of our resources. Economic theory is the foundation upon which our economic policies are erected. It is fundamental to the analysis of both individual business problems and a nation's social problems.

The Department of Economics has two main functions: to enable students from all majors to learn about and understand society's economic problems and to provide economics majors with a solid education for a variety of careers where in-depth training in economics is desirable.

The Economics Department offers both a Bachelor of Arts program and a Bachelor of Science program. The B.A. is suggested for students interested in a broad liberal arts economics background in preparation for a wide range of careers with possibilities of developing double majors. The B.S. in Economics is suggested for those majors considering graduate study in economics or business administration, or professional careers in economics, law, business or the financial industries. The Department also offers a minor in Economics.

In conjunction with the Department of Political Science, the Department of Economics offers a major in Political Economy. The B.A. in Political Economy is designed for students interested in the political and economic reality of society within which policy must be formulated, as well as economic and political theory.

In conjunction with the Department of Mathematics, the Department of Economics offers a major in Mathematics-Economics. The B.S. in Mathematics-Economics is designed for students preparing for graduate studies in quantitative economics, operations research or business administration or for students entering industry or government, in some area of quantitative decision making.

The Department of Economics, in conjunction with the Department of Modern Language

and Literature, offers a cross-disciplinary program in which a student pursuing either the B.A. or B.S. who is interested in an international career may obtain a certified concentration in French, German, Spanish, Japanese, Chinese or Russian. The language concentration requires five courses, three of which must be taken on this campus. For information, see the chairperson of Economics or Modern Language and Literature.

Once a student has registered as a major in the Economics Department, any economics course to be taken elsewhere for application to the major must normally have the prior approval of the economics faculty.

The B.A. in Economics requires 10 courses, including the following six:

- AEC 53-Intro. Microeconomics
- AEC 55-Intro. Macroeconomics
- AEC 101-Intermediate Micro
- AEC 103-Intermediate Macro
- AEC 111-History of Econ. Thought
- AMA 37 or 39-Probability and Statistics

Plus four upper division electives to be chosen from the department's regularly scheduled classroom courses. Special Topics courses (AEC 193) are normally included in the pool of electives for the major.

The B.A. in Political Economy requires 12 courses:

Economics (6 courses)

- AEC 53-Intro. Microeconomics
- AEC 55-Intro. Macroeconomics (AEC 51 may be substituted with the advisor's permission)
- AEC 111-History of Econ. Thought
- AEC 171-Political Economy

Plus two upper division electives to be chosen from AEC 118, 121, 123, 125, 127, 131, 151, 154, and 180.

Political Science (6 courses)

- APO 11-Intro. Political Science
- APO 41-U.S. Natl. Government
- APO 132-Recent and Contemporary Political Theory
- APO 140-Politics and Markets

Plus two upper division electives to be chosen from APO 141, 142, 144, 148, 150, 152, and 164.

The B.S. in Economics requires 14 courses, including the following eight:

- AEC 53-Intro. Microeconomics
- AEC 55-Intro. Macroeconomics
- AEC 101-Intermediate Micro
- AEC 103-Intermediate Macro
- AEC 111-History of Econ. Thought
- AMA 33-Calculus or the entire sequence (AMA 51, 53, 55)
- AMA 37 or 39-Probability and Statistics
- A computer programming course: (ACS 51, GGE 19 or ASO 75)

Plus six upper division electives to be chosen from the department's regularly scheduled classroom courses. Special Topics courses (AEC 193) are normally included in the pool of electives for the major.

The B.S. in Mathematics-Economics requires 16 courses:

Economics (8 courses, minimum 31 units)

- AEC 53-Intro. Microeconomics
- AEC 55-Intro. Macroeconomics
- AEC 101-Intermediate Micro
- AEC 103-Intermediate Macro
- AEC 160-Mathematical Econ.
- AEC 190-Econometrics

Plus two approved upper division electives.

Mathematics (8 courses, minimum 30 units)

- AMA 51, 53 and 55-Calculus
- AMA 39-Probability with Applications to Statistics
- AMA 73-Operations Research Models
- AMA 141-Linear Algebra, or AMA 172-Topics in Operations Research
- ACS 51-Intro. to Computer Science

Plus one approved elective.

To meet the requirements of this degree, Math courses must be passed with a grade of "C—" or better.

The minor in Economics requires six courses:

- AEC 53-Intro. Microeconomics
- AEC 55-Intro. Macroeconomics

Plus four upper division elective courses from among the scheduled Economics classes, including AEC 193 (Special Topics). At least ten units in the minor must be taken at UOP. AEC 101 is recommended as one of the four because it is prerequisite to several upper division courses. Mathematics-Economics and Political Economy majors are not eligible for an Economics minor.

Course Offerings

AEC 51. Economic Principles and Problems

(3) A general introduction to the nature, significance and scope of economics through a critical analysis of principles of micro and macroeconomics. Examines 1) the price system, 2) employment, prices, and output of goods and services, 3) the role of money and the banking system, 4) government taxing, spending and debt policies, and 5) public policies influencing the market mechanism. Current economic events are given meaning through the language, analysis and methods of economics. AEC 51 is specifically designed as a general education offering and will count as an elective toward the major only if taken prior to AEC 53 and 55. **AEC 53. Introductory Microeconomics** (4) A study of the economic decisions of individuals and firms. Evaluates efficiency and equity in individual choice processes. Examines economics of monopoly and competition as well as economics of pollution and governmental regulation. Prerequisite: Passing score on the General Education quantitative skills examination or AMA 5.

AEC 55. Introductory Macroeconomics: Theory and Policy (4) A study of the national economy. Special emphasis is placed on policies designed to meet the national goals of full employment, stable prices and economic growth. The course examines the spending and saving behavior of households and business, government spending and taxing policies, and

the Federal Reserve's monetary policies. No prerequisite, although AEC 53 is recommended first for students planning to take both AEC 53 and 55.

AEC 71. International Economic Relations

(4) Study of the sources of international economic problems and the economic policies which nations can follow to resolve these trade problems. Consideration of why nations trade with each other, how to pay for foreign goods, and how well international economic institutions have worked to mitigate trade problems. A brief look at comparative advantage, protectionism, multi-national corporations, the foreign exchange market, the balance of payments, international capital flows, the IMF, the World Bank and several other institutions of the international economy. Prerequisites: AEC 53 and 55. (Cross-listed as SEC 71.)

AEC 101. Intermediate Microeconomic Analysis (4) The behavior of individuals and firms in a market economy. Price theory, distribution and welfare economics. The course provides a rigorous development of the tools that economists have utilized for studying the allocation of resources. Prerequisite: AEC 53.

AEC 103. Intermediate Macroeconomic Analysis (4) Study of the measurement of the level of economic activity; the determinants of national income, employment and the price level; use and appraisal of economic data in the context of a dynamic market economy. Stabilization problems and the relevance of fiscal, monetary and income policy. Prerequisites: AEC 53 and 55.

AEC 111. History of Economic Thought (4) An adventure in the evolution of ideas through human history in discovering and explaining economic activity. Explores historical foundations to the emergence of economic beliefs influencing current climate of opinion, economic analysis and public policy. It is not an antiquarian's obsession with quaint ideas from lore to philosophy-science but a quest for insights into the methods by which economic ideas are formulated, modified, clarified. Examines the intellectual foundations and theoretical formulations of selected contributors to economics such as Adam Smith, Thomas Malthus, Jeremy Bentham, David Ricardo, John Stuart Mill, Karl Marx, Alfred Marshall, John Maynard Keynes, et al. Prerequisite: AEC 53 and 55 or permission of the instructor.

AEC 118. Early Modern Economic History (4) The interaction between economics and politics during the early modern period. The course will analyze, among other things, the transition from feudalism to capitalism, the cause of 16th century price inflation, the so-called Price Revolution, Spain's emergence as the western world's premier power in the 16th century and its 17th century collapse, the flow of Mexican, Peruvian and Japanese silver into China, similarities and differences between Imperial Spain and Shogunate Japan. The central purpose of this course is to demonstrate that all these seemingly disparate world developments were inter-related. Prerequisites: AEC 53 and AEC 55.

AEC 121. International Trade (4) Study of theories of international economics and their application to the understanding of major economic problems worldwide. Arguments for and against uninhibited trade are analyzed, as are topics such as tariffs and quotas, the multinational corporation and trade sanctions. Prerequisites: AEC 53 and 55. (Cross-listed as SEC 121.)

AEC 123. International Finance (4) Study of the financial side of international economics. Analysis of such things as international investment, foreign aid and the international debt crisis. International monetary theory comprises a core topic of the course; it includes discussion of exchange rate determination, the monetary approach to the balance of payments, currency substitution and international aspects of price inflation. Prerequisites: AEC 53 and 55. (Cross-listed as SEC 123.)

AEC 125. Economic Development (4) Examines the plight of the world's poor countries. Discussion of the extent of world poverty. Review of the evolution of ideas on the topic of economic development over the past three decades. Course considers the following types of questions: What are the causes of development and/or underdevelopment? Are third world countries merely at a primitive stage of development analogous to European countries prior to the Industrial Revolution? What are the roles of climate, the legal system, education, health and sanitation, natural resources, technology, multinational corporations, religious beliefs and so on? Are rich countries making a meaningful effort to aid poor countries? Can we, or even should we, help? Should emphasis be placed on the agricultural or industrial sector? Prerequisites: AEC 53 and 55 or permission of the instructor. (Cross-listed as SEC 125.)

AEC 127. Comparative Economic Systems (4) Analysis of economic systems different from the U.S. with emphasis on the planned economies of the Soviet Union, China and eastern Europe. The mixed and welfare economies of Western Europe and Japan are also examined. In Western Europe the major economies studied are France, West Germany, Sweden and the United Kingdom. The course includes an introduction to formal planning models and their solution on the computer. Similarities and dissimilarities from the U.S. in aims, institutions and basic problems are evaluated. Prerequisites: AEC 53 and 55 or permission of the instructor. No prior experience with computers is required. (Cross-listed as SEC 127.)

AEC 128. Population Systems (4) A study of the interactions between a society's population and its economy. Analysis of how the economic well-being of society affects fertility, mortality and migration, and how they in turn affect the structure of the economy. A look at Malthusian and neo Malthusian theories of population growth, the theory of the demographic transition, and Marxist views on population growth. Analysis of over-population, food production, pollution, and the economic development of

poor countries. Emphasis on feedback effects in the population system and in the economic system. Prerequisite: AEC 53 or AEC 55 (cross-listed as SEC 128).

AEC 131. Public Finance (4) Uses economic theory to analyze the efficiency and equity of government spending and taxation. The course covers the role of government in a market economy, government budgeting, benefit-cost analysis, the tax system, fiscal policy and state/local finances. The economic implications of democratic institutions and income distribution are also examined. Prerequisites: AEC 55 and 101 or permission of the instructor.

AEC 141. Money and Banking (4) The nature of money and credit and their roles in directing the economic activity of a nation. The development and operation of the central bank and monetary institutions of the United States; problems of achieving full employment and price stability through monetary policy. Prerequisites: AEC 53 and 103, or permission of the instructor.

AEC 151. Urban Economics (4) An economic analysis of the evolution, growth, and decline of urban areas and the location choice decisions of households and firms within urban areas. Attention then focuses on normative analyses of urban public policy issues such as housing, poverty, crime and pollution. Prerequisites: AEC 55 and AEC 101.

AEC 154. Industrial Organization and Policy (4) The history, structure, conduct, and performance of industry as well as currently proposed industrial policy will be examined. After studying the evolution of modern U.S. industries and firms; monopoly, oligopoly, and competitive structures; and anti competitive conduct among firms, the course will analyze government regulation of business, especially antitrust and price regulation policies, as well as recent trends to deregulation and reindustrialization. Prerequisite: AEC 53; AEC 101 recommended.

AEC 160. Mathematical Economics (4) Mathematical analysis of neoclassical theories of production, consumption and distribution; introduction to Leontief-type linear economic models; linear programming including Kuhn-Tucker theory. Primary emphasis is placed on the application of mathematics to economic theory and problems. Prerequisites: AEC 101, 103 and AMA 33, or permission of the instructor.

AEC 161. Computer Application in Economics (4) A quantitative analysis of a variety of micro- and macroeconomic problems by means of the computer. The emphasis is upon the application of economic and statistical models, e.g., input-output, linear programming and linear regression. These models and their computer analogues are used to evaluate economic changes due to such phenomena as the energy, pollution, defense spending and inflation/unemployment problems. Prerequisites: AEC 53, 55; AMA 37, its equivalent or permission of instructor; some familiarity with computer programming recommended.

AEC 171. Political Economy (4) An overview

of Neoclassical, Marxian and Institutional economic theory by comparing the assumptions, methodology and policy prescriptions of each of these three approaches to economics. Once this theoretical groundwork is laid, several current "political economy" issues will be analyzed from each of these perspectives. Prerequisite: AEC 51 or AEC 55.

AEC 180. Labor Economics (4) Examination of labor's role in the market system and the response of labor and government to market failures. Microeconomic analysis of labor supply and demand, wage and employment determination, and the effects of discrimination. Development of the labor movement from a chronological and theoretical perspective with emphasis on the collective bargaining process. Influence of public policy on labor relations and labor market functioning. Prerequisite: AEC 53.

AEC 190. Econometrics (4) An introduction to econometric methods. Topics will include elementary time series analysis, simple and multiple regression, and an introduction to single-equation approaches to simultaneous equation estimation. The course will stress both the exploratory and confirmatory aspects of econometrics. Prerequisites: AEC 55 and 101, AMA 33 and 37 or 39, or permission of the instructor.

AEC 191. Independent Study (2-4)

AEC 193. Special Topics (4)

English

Professors: Borden, Cox, A. Hansen, Knighton, McCullen, Mueller, Schedler, Seaman, J. Smith (Chair), J. Williams

Associate Professor: Tedards

Assistant Professors: Lutz, Mayne

The English Department offers courses in the following areas: writing; criticism of literature and allied arts (including film); British and American literature; English language and linguistics. Upper division courses are more specialized or applied than lower division courses and often presume prior training in the subject.

The undergraduate major in English prepares students for careers that put a premium on critical thinking and literacy. While many majors become teachers, many more enter business, government service, the law, medicine, or other professions after further schooling. Undergraduate majors may focus their elective courses to emphasize writing or literature or language or film studies. The department also offers a minor in English for students committed to a different academic major. The department offers courses required for certification in elementary and secondary teaching, and skills courses and liberal studies courses for all students in the UOP General Education program.

Requirements for Major in English

Candidates for the B.A. degree with a major in English must complete a minimum of eleven courses (at least 40 units), including a four-course lower division core:

AEN 25-English 25

AEN 41-Major British Authors I, and

Two of the following three courses:

AEN 43-Major British Authors II,

AEN 51-Major American Authors I

AEN 53-Major American Authors II

and AEN 125-Critical Colloquium and

six electives. At least five of these electives must be upper division courses (including special topics courses and independent study); AEN 31-Aesthetics of Film or another course from the lower division core is acceptable as a sixth elective.

Requirements for Minor in English

Candidates for the minor in English who are taking a major in another academic discipline must complete a minimum of six courses (22 units) in English, including the following:

AEN 25-English 25

And two of the following five courses:

AEN 41-Major British Authors I

AEN 43-Major British Authors II

AEN 51-Major American Authors I

AEN 53-Major American Authors II

AEN 31-Aesthetics of Film

And three or more upper-division electives.

Course Offerings

AEN 7. **Principles of Writing** (4) A beginning course that addresses the basic principles of expository writing, paragraph organization, and sentence construction, with a review of punctuation, spelling, and other conventions of Standard Written English. Satisfactory completion of this course fulfills the General Education Basic Writing Requirement.

AEN 25. **English 25** (4) A beginning course that involves writing about and discussing various topics that arise in the study of literary works. Multiple and varied sections each semester. One section may explore a theme like "The Individual Against Society." Others might study "Ethnic American Novels," "The New Journalism," "Women In Literature," or "Third-World Writing."

AEN 31. **Aesthetics of Film** (4) An introduction to the principles of artistic expressiveness of films: shots, angles, lighting, color, camera distance, composition, space, movement, image, setting. Attention is also given to narrative techniques and editing styles. Explores such theories as realism, formalism, surrealism, Freudianism, and Marxism. Both American and foreign films are viewed and discussed.

AEN 41. **Major British Authors I** (4) A study of major authors, works, and traditions from *Beowulf* through the Pearl Poet, Chaucer,

Spenser, Shakespeare, Donne, Milton, Dryden, Pope, Swift, and others, to Johnson. Balanced concern for particular works, for historical continuity, for the distinctive features of movements such as Renaissance and Augustan, and for the expanding definition of English literature.

AEN 43. **Major British Authors II** (4) Begins with Blake and ends with Pinter, and includes such authors as Wordsworth, Byron, Keats, Tennyson, Browning and Hardy, Yeats, Thomas, Joyce, Eliot, Lawrence, and Lessing. The approach is historical, with a focus on the distinctive qualities of the Romantic, Victorian, Modern, and Contemporary traditions. Connects with AEN 41, but that course is not a prerequisite.

AEN 51. **Major American Authors I** (4) A survey of principal American writers up to the end of the 19th century, including poetry, prose, and at least one longer work of prose. Writers that may be treated include Hawthorne, Poe, Thoreau, Melville, Dickinson, Twain, and Crane. Emphasis will focus on the thought, aesthetics, and cultural impact of these writers.

AEN 53. **Major American Authors II** (4) Similar to Major American Authors I only treating the principal American writers of the 20th century. Writers that may be covered include Fitzgerald, Hemingway, Faulkner, Pound, Eliot, Stevens, Williams, Steinbeck, the Harlem Renaissance group, Bellow, and Pynchon. Emphasis will focus on the thought, aesthetics, and cultural impact of these writers.

AEN 103/203. **Advanced Composition and Rhetoric** (4) An advanced course that emphasizes analytical and argumentative writing, with special attention to style and rhetoric. Students are expected to have a command of English grammar and an understanding of paragraph and essay development. Upper-division standing strongly recommended.

AEN 105. **Technical Writing** (4) A practical study of the complete process of preparing a technical article for possible publication in a professional journal, treating audience assessment, thesis research and development, and manuscript editing through successive drafts of the article and such related modes as letter, memo, abstract, and oral report.

AEN 111/211. **Creative Writing: Fiction and Drama** (4) Emphasizes steady, productive writing of stories and plays. Practical advice is offered in fictional and dramatic techniques, and in ways to improve writing, especially through revision. Student manuscripts are submitted regularly for response and verbal-written criticism by peers and by instructor in a workshop setting.

AEN 113/213. **Creative Writing: Poetry** (4) For students who want to write poetry and need the discipline and guidance of a class. Focuses on careful analyses of poems submitted by students, interspersed with poems written by published poets. The goals: to find one's unique voice, to enlarge one's skills and visions, to encourage discipline and editing.

AEN 121/221. **Major Filmmakers** (4) Focus

is on the work of such major directors as Coppola, Bresson, Fellini, Kubrick, Bergman, Hitchcock, Antonioni, Losey, Bertolucci, and Truffaut. The course also considers major schools of cinema: French New Wave, Italian Neo-Realism, New German Cinema, and narrative genres such as the psychological thriller, chamber film, and epic. Emphasis is placed on critical analysis and interpretation of the individual director's styles and themes.

AEN 122/222. **Literature and Psychology** (4) A study of psychoanalytical methods in the interpretation of literary texts through a close investigation of language, narrative, structure, symbol, and archetypal patterns. Considers such phenomena as family romance, primal scene, return of the repressed, and the schizophrenic experience as related to the literary work and creative process.

AEN 123/223. **Film, Literature, and the Arts** (4) Investigates the theory, practice, and critical methods underlying aesthetic form in the arts, including film, literature, painting, and sculpture. Corollary illustrations are drawn from music and architecture. This comparative course attempts to examine the underlying styles and structures among the arts.

AEN 125/225. **Critical Colloquium** (4) A study of the theory and practice of the major modes of interpreting and criticizing literature, including but not limited to historical, socio-cultural, formalistic, psychoanalytic, structuralistic, and poststructural in representative perspectives offered by designated English Department members.

AEN 126/226. **Modern British and American Poetry** (4) A study of the major poets of the modern period, focusing on movements, styles, and theories that characterize their poetic achievement. The course explores the poetic imagination of Eliot, Pound, Yeats, Rilke, Stevens, W. C. Williams, Duncan, Dylan Thomas, Roethke, and others.

AEN 128/228. **The Medieval Mind** (4) Explores the sensibilities, values, and dominant concerns of medieval men and women. The course examines a dialectic between ascetic and erotic tendencies in European literature, art, architecture, and music from the fifth to the fifteenth centuries. Works read include *Njal's Saga*, *the Romance of the Rose*, and Dante's *Purgatory*.

AEN 130/230. **Chaucer and His Age** (4) A reading of Chaucer's major work — *The Canterbury Tales* and *Troilus and Criseyde* — against the background of fourteenth century daily life in town, at court, and in the monasteries. The course examines the cultural values of Chaucer's world, as well as the complex ironies of his verbal art.

AEN 131/231. **Shakespeare** (4) Eight to ten of Shakespeare's plays, studied from a variety of critical perspectives, such as the historical, psychological, philosophical, formalist, cultural, and theatrical approaches. Selections from each major genre (comedy, tragedy, history). Specific plays vary from term to term; the reading list may include such works as *Twelfth*

Night, The Tempest, King Lear, Macbeth, Richard II, Henry IV (Parts One and Two), and Henry VIII.

AEN 132/232. **Milton** (4) A study of Milton's deliberate development as a complete poet, tracing the evolution of his craft and vision from the "Nativity Ode" through *Paradise Regained* and *Samson Agonistes*. Major attention to *Paradise Lost*. Limited study of selected prose works, including *Areopagitica* and *The Christian Doctrine*.

AEN 138/238. **British Novel** (4) A study of selected major British novels in their historical contexts. The course traces the rise of the novel in the Eighteenth Century, through classic Victorian writers like Charles Dickens and the Brontës, to Modernists like D. H. Lawrence and Virginia Woolf.

AEN 140/240. **The English Renaissance** (4) A study of the major genres produced in England from the time of More in early sixteenth century through the time of Jonson in the early seventeenth. Includes some work of Shakespeare, with greater emphasis on his contemporaries, such as Spenser, Donne, and Marlowe, and on their work in prose forms, drama, epic, and lyric verse.

AEN 142/242. **Neoclassicism** (4) A historical-critical study of the prose, poetry, fiction, and drama of the period 1660-1798 — the Ages of Restoration, Augustan, and Sensibility, highlighting works by Dryden, Congreve, Defoe, Behn, Pope, Swift, Richardson, Fielding, Gray, Collins, Johnson, Sterne, Boswell, and Burns.

AEN 144/244. **English Romanticism** (4) A study of the works, aesthetic theories, and sensibility of the English Romantic period. Emphasis will be placed on the achievements and cultural context of such writers as Blake, Coleridge, Wordsworth, Keats, Byron, and Shelley.

AEN 146/246. **Dickens and His Age** (4) A critical/historical course which examines the Victorian response to change: the rise of big business and big government, the confrontation of religion and science. Writers who attempted to join art and morality include Dickens, Thackeray, Tennyson, Browning, Arnold, Hardy, Ruskin, Pater, and Wilde.

AEN 150/250. **American Realism** (4) A study of the developments of American Literary Realism from its roots in local-color regionalism in the mid-nineteenth century to its early twentieth century experiments with naturalistic determinism. Writers that may be studied include Sara Orne Jewett, Kate Chopin, Mark Twain, William Dean Howells, Stephen Crane, Frank Norris, and Jack London.

AEN 154/254. **Modern American Novel** (4) Reading and analysis of major American novels from the 1920s and the 1930s with some emphasis upon historical and sociocultural background and development of modernism. Writers may include Fitzgerald, Hemingway, Faulkner, and Steinbeck.

AEN 158/258. **Contemporary American Poetry** (4) Reading and discussing American poetry published over the last 25 years. Emphasis on understanding the historical and

cultural contexts for this poetry, as well as developing individual responses to such poets as John Ashbery, Lucille Clifton, Robert Creeley, Alan Dugan, Kenneth Koch, Denise Levertov, Sharon Olds, and James Schuyler.

AEN 160/260. **Fictional World of Faulkner** (4) Style, craftsmanship, dominant values, and developing themes in Faulkner's fiction are studied. Emphasis is given to Faulkner's psychological and sociological insights into the nature of the family, the personality and culture of the South, and the corrosive effects of racism.

AEN 162/262. **Literature of the American South** (4) Examines the remarkably rich output of southern writers. Special attention is given to the collective southern character, the strong sense of community (even if only remembered and/or imagined), and the pervasive significance of region. Also examined are the numerous individual, racial, and regional differences — as delineated in the work of such writers as Faulkner, Welty, O'Connor, McCullers, and Taylor.

AEN 164/264. **1920s/Expatriates** (4) Examination of the times that produced the Expatriate movement to Paris, of influences on the Expatriates, of the literary experimentation that characterizes this important movement, and of the work that the Expatriates produced. Includes study of novels, poems, paintings, music, maps, and details of literary history.

AEN 170/270. **Contemporary Critical Issues** (4) Examines major aspects of literary theory from structuralism to post-structuralism. Focuses on the interplay between and among such movements as deconstruction, semiotics, the new historicism, phenomenology, and psychoanalysis. The course also discusses how contemporary theory has impacted such topics as gender, canon, reader-response, and post-modernism.

AEN 181/281. **Modern English Grammar** (4) Analyzes the structure of English phrases and clauses, with special attention to relations between grammar and distinctions of meaning. Additional topics may include word formation, pronunciation, and spelling. Terminology is traditional, but concepts are consistent with current theory. The course is intended for prospective teachers, writers, lawyers, and other professionals who work with language.

AEN 182/282. **Introduction to Linguistics** (4) Studies the nature and use of human language, emphasizing its formal aspects. Subtopics include the properties of sound systems (phonology), word-forming processes (morphology), phrase and clause structure (syntax), meaning (semantics), use (pragmatics), and text or discourse structure.

AEN 184/284. **History of the English Language** (4) Covers the development of English from its beginnings to the present. Students practice reading Old and Middle English and learn to use standard reference works to analyze and describe texts written in historical, regional, and non-standard social varieties of English.

AEN 191/291. **Independent Study** (2-4) Student-initiated projects involving subjects not addressed by current course offerings. In consultation with a faculty director, the student shall submit in writing a proposal which defines the specific subject matter, the goals, the means of accomplishing the goals, and the grounds for evaluating the student's work. The proposal must receive the approval of the director of the project prior to registration, and responsibility for fulfilling the terms of the proposal lies with the student.

AEN 193/293. **Special Topics** (4) Additional courses not covered by regular offerings. In the past these courses have included History as Literature, James Joyce, Existential Writers, Modern European Fiction, Pynchon, Archetypes of Desire, Kipling and Wilde, Whitman/Thoreau, Modern American Drama, Time and Literature, Poetics, Contemporary American Film, Science Fiction.

Geology and Geography

Professors: Barnett, Kramer, Pearson (Chair)
Assistant Professor: Fox

Four degree programs are offered through the Department: the Bachelor of Science in geology, the Bachelor of Science in solid earth geophysics, the Bachelor of Arts in geology and the Bachelor of Arts in physical science with a discipline concentration in geology. In addition to the degree programs, the department offers minors in both geography and geology.

The Bachelor of Science in geology prepares the student for graduate study or professional employment in geology. Students seeking this degree must complete the following courses: AGE 83-Physical Geology, AGE 95-Geologic Evolution of the Earth, AGE 101-Mineralogy, AGE 110-Petrology, AGE 121-Geomorphology, AGE 131-Economic Geology, AGE 140-Structural Geology, AGE 151-Invertebrate Paleontology, AGE 152-Stratigraphy and Sedimentation, AGE 161-Geologic Field Methods, AGE 170-Optical Mineralogy and AGE 180-Petrography. In addition, one year of general chemistry (ACH 25 and ACH 27), one year of general physics (APS 23, 25 or APS 53, 55), one year of calculus (AMA 51 and AMA 53) and one course in either statistics or computer science. The department recommends high school chemistry, physics and trigonometry as well as college field geology, physical chemistry, surveying and computer programming.

The Bachelor of Science in solid earth geophysics prepares the student for graduate study in geophysics or a career in exploration geophysics. Students seeking this degree must complete the following courses: AGE 83-Physical Geology, AGE 101-Mineralogy, AGE 110-Petrology, AGE 140-Structural Geology

and AGE 161-Geologic Field Methods. In addition, six physics courses (see description in Department of Physics) must be completed, as well as four semesters of calculus, AMA 37-Probability and Statistics, two semesters of chemistry (ACH 25, 27), one course in fluid mechanics and one in computer programming. High school chemistry, physics and trigonometry are essential to completion of the program in four years.

The Bachelor of Arts in geology is for liberal arts students with a strong interest in the environment but who do not desire to pursue geology as a career. Students seeking this degree must complete the following courses: AGE 83-Physical Geology, AGE 95-Geologic Evolution of the Earth, AGE 101-Mineralogy, AGE 110-Petrology, AGE 121-Geomorphology, AGE 131-Economic Geology, AGE 140-Structural Geology, AGE 151-Invertebrate Paleontology and AGE 161-Geologic Field Methods. In addition, ACH 23-General Chemistry is required. The department recommends high school chemistry and trigonometry as well as college surveying and field geology.

The Bachelor of Arts in physical science prepares students for the California Single-Subject teaching credential in the physical science area. Students seeking this degree with a discipline concentration in geology must complete the following courses: A core consisting of two courses in general physics (APS 53, 55), three courses in chemistry (ACH 25, 27, 121), two courses in mathematics (AMA 51, 53), one course in computer math or computer science, one course in biology, and a concentration in geology consisting of AGE 83-Physical Geology, AGE 95-Geologic Evolution of the Earth, AGE 99-Physical Geography and three additional geology courses selected in conference with the department adviser. Additional courses from the School of Education are also required.

Students seeking a minor in geography must complete AGE 99-Physical Geography and AGE 128-Political Geography. Additional units to meet the 20-unit minimum requirement must be chosen from the following courses: AGE 116-Western Europe, AGE 118-Canada: Land, Resources and People, AGE 126-Urban Geography and Planning, AGE 138-Agriculture, Food and Famine and AGE 83-Physical Geology.

Students seeking a minor in geology must complete AGE 83-Physical Geology, AGE 95-Geologic Evolution of the Earth, and either AGE 101-Mineralogy or AGE 110-Petrology. Additional units to meet the 20-unit minimum

requirement must be chosen from the other geology courses offered by the department. Students seeking the Bachelor of Science in solid earth geophysics may not minor in geology.

Course Offerings

Geology

AGE 83. **Physical Geology** (4) Nature and origin of the earth's crustal materials, the processes and forces which create and change the surface morphology of continents, and the nature and origin of the earth's crustal structures.

AGE 85. **The Changing Environment** (3) An introduction to the evolution of the atmosphere, how and why weather and climate changes, and the effect of climate change on biogeography. An introduction to the origin of mountain ranges and ocean basins in terms of plate tectonics; how mountain ranges are continually modified by climate and how plate motion affects biological evolution.

AGE 95. **Geologic Evolution of the Earth** (4) An introduction to the geologic history of the earth as interpreted through analysis of both the stratigraphic and fossil record, structural relationships and isotopic dating techniques. Particular emphasis is placed on the geologic evolution of North America.

AGE 101. **Mineralogy** (4) A study of crystal morphology and identification of the most common minerals. Prerequisites: ACH 23 or 25 (may be taken concurrently) and AGE 83, or permission of the instructor.

AGE 103. **Geology of California** (4) A field-oriented study of the mountain belts and basins of California. A study of landform evolution, ancient and present processes of mountain building, seismic (earthquake) processes, geologic hazards, origins of rocks and climate change in California. Prerequisite: one geology course or permission of the instructor.

AGE 110. **Petrology** (4) A systematic study of the characteristics, occurrence, origin and classification of rocks. Prerequisites: ACH 23 or 25, AGE 83 and 101 or permission of the instructor.

AGE 121. **Geomorphology** (4) Comprehensive treatment of the principles of landscape development, analysis of topographic maps and interpretation of aerial photographs. Prerequisites: AGE 83 and permission of the instructor.

AGE 131. **Economic Geology** (3) The geologic occurrence of metallic and non-metallic mineral resources. Prerequisites: AGE 83 and ACH 23 or 25, or permission of the instructor.

AGE 140. **Structural Geology** (4) Geologic structures and their origin. Prerequisites: AGE 83 and permission of the instructor.

AGE 151. **Invertebrate Paleontology** (4) Evolution and morphology of the major groups of fossil invertebrates. Prerequisite: AGE 95 or permission of the instructor.

AGE 152. **Stratigraphy and Sedimentation** (4) An introduction to the principles of stratigraphy and the materials and processes of sedimentation. Prerequisite: AGE 95 and 151,

or permission of the instructor.

AGE 161. **Geologic Field Methods** (4) Introduction to the methods of field geology. Prerequisites: AGE 83, 110, 140 or permission of the instructor.

AGE 170. **Optical Mineralogy** (4) The theory and practice of mineral identification through optical examination. Prerequisite: AGE 101 or permission of the instructor.

AGE 180. **Petrography** (4) Microscopic identification of rocks, their textures and mineral components. Prerequisites: AGE 110 and 170, or permission of the instructor.

AGE 191. **Independent Study in Geology** (2-4)

AGE 193. **Special Topics in Geology** (4)

Geography

AGE 99. **Physical Geography** (4) An introductory course on the earth's atmosphere and surface features. Topics include: location and maps, the earth and the sun, weather and climate and their effect upon landforms, soils and vegetation. An overview of the environmental regions of the earth and their uses.

AGE 116. **Western Europe** (4) Regional study of the countries of Western Europe stressing the variety of physical and cultural environments. Emphasis on regional, economic and social issues at the present time.

AGE 118. **Canada: Land, Resources and People** (4) An introduction to the history and geography of Canada: its landscapes, and resources; how Canadians have responded to the challenge of the harsh environments; the emergence of the distinctive national character of Canada: its contrasting Francophone and English language cultures, the British roots of Canadian institutions, the ties with the United States. Through contemporary readings, the course will analyze current major issues in Canadian life: language conflict, Quebec independence, the northern frontier and the impact of the United States.

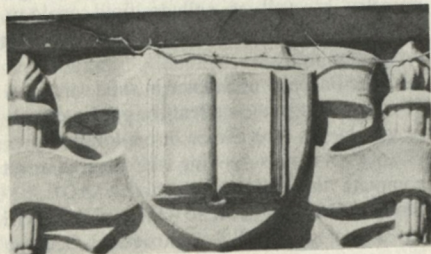
AGE 126. **Urban Geography and Planning** (4) An analysis of the patterns of urban land use and the distribution of urban places. The role of planning and design in the development of cities.

AGE 128. **Political Geography** (4) Analysis of the territorial evolution of nation-states, their political subdivisions and other administrative areas. A comprehensive world-wide coverage with particular attention given to problem areas in world politics.

AGE 138. **Agriculture, Food and Famine** (4) A survey course to introduce the major themes in the history and geography of world agriculture, food production and consumption. The initial perspective is taken from environmental geography and subsequent themes will pursue socio-economic issues and close with an analysis of historical and contemporary areas of food shortage and famines.

AGE 191. **Independent Study in Geography** (2-4)

AGE 193. **Special Topics in Geography** (4)



History

Professors: Blum (Chair), Erickson, Grubbs, Hauben, Humphreys, Limbaugh, Miller
Associate Professors: Brennan, R. Smith

"The past is intelligible to us only in the light of the present; and we can fully understand the present only in the light of the past. To enable man to understand the society of the past and to increase his mastery over the society of the present is the dual function of history."

The offerings of the Department of History are predicated on the assumptions thus expressed by historian E. H. Carr.

History students, majors, minors and non-majors, will be expected to gain a degree of skill in the analysis and interpretation of historical materials and to formulate generalizations on the basis of historical evidence. However, the emphasis is less upon the accumulation of factual data as such than upon the comprehension of the political, economic, social, and intellectual ideas and institutions of the past by which man has attempted to bring meaning and order into his world.

History offerings are organized into a clear progression of courses. The introductory survey courses are for freshmen and sophomores, for whom they are intended as foundations for more advanced study in history and for general education. The intermediate (broad chronological) courses are designed for students who have foundations in history and for strong general education offerings in the social sciences. The intermediate (national, regional, topical) classes and the special study classes are generally smaller in size, and they best serve students with a background in history.

Students should not **concurrently** enroll in the basic survey classes in Western Civilization or United States history with the 100-level courses in those fields. If the student chooses to undertake more advanced study, this should follow the introductory courses. In some cases, a student may seek permission to do otherwise, but consultation with and the permission of the instructor will be required.

Graduate students are asked to seek permission from the instructor to undertake a 100-level class at the 200-level. Extra requirements will be arranged, and the appropriate call number will be provided to the student.

Together with their departmental advisers, history majors must build a planned program that is designed to move them from introductory through intermediate to special studies. Non-majors may seek departmental advice regarding the level of demand in each course and the content that most suits their own major concentrations. At the time of enrollment for each semester, a departmental bulletin board displays the nature of each course for the use of students.

History is a field that makes an excellent double major with a number of other majors and programs, and departmental advisers will

be pleased to consult with interested students in this regard.

Students may wish to consider the excellent programs of historical study that may be taken in the junior year through the Institute of European Studies at the Universities in Vienna, Durham, Madrid, Paris, and Freiburg.

History majors take a minimum of nine courses for 33 units, six of which must be at the 100 level or above. Two courses must be in United States history, two in European history and two in non-United States and non-European history (such as Africa, Asia or Latin America); AHI 51, 53, 61 and 63 or their equivalents may fall within this basic core of six courses. Any final program should ideally seek a balance of three or four courses in both United States and European history, with exposure for comparison and contrast to a field in African, Asian or Latin American history. Each student can build that program which most suits his or her talents, professional goals and general balance in preparation in historical study. Majors may not count more than eight units combined of 187/287, 189/289 and 191/291 toward the major.

History minors take six courses for a minimum of 21 units, 10 of which must be taken at UOP: two European, two United States, one "Other" or Non-Western, one elective from courses to be approved by the department. As with the major, students taking a minor should not concurrently enroll in the U.S. or Western Civilization introductory courses and 100-level ones in these areas. Four of the six courses must be at the 100-level. Students may count no more than four units combined of 187/287, 189/289 and 191/292 toward the minor.

Teaching credential candidates wishing to qualify to teach history at the secondary level should complete the Single Subject Credential in the Social Sciences. Information on specific course requirements may be obtained from the department chair. For other credential requirements, students should consult the teacher credential guidelines in the School of Education listings.

Course Offerings

Introductory

AHI 51. History of Western Civilization I (4) An introductory analysis of the institutions and ideas which have shaped and influenced European history and the rise of the West from ancient Greece to the middle of the 17th century. Ordinarily not open to junior or senior history majors.

AHI 53. History of Western Civilization II (4) Political, cultural and intellectual history of western civilization from the mid-17th century to the present. Emphasis is placed upon those ideas, movements and persons that have had the greatest impact upon the modern world. Ordinarily not open to junior and senior history majors. AHI 51 not required.

AHI 61. United States History I (4) A broad survey of United States history from European exploration and settlement through the Civil War. Ordinarily not open to junior and senior history majors.

AHI 63. United States History II (4) A broad survey of United States history from the Civil War to the present. Ordinarily not open to junior and senior history majors. AHI 61 not required.

AHI 93. Special Topics (4)

Intermediate (Broad Chronological)

AHI 104. Medieval History (4) An analysis of historical development in the European middle ages from the end of the Roman Empire in the west to approximately 1300. The course stresses the interweaving of political, social, economic, religious and cultural elements as it describes why dynastic states emerged in lands like France and England while smaller independent entities such as duchies and city-states prevailed in Germany and Italy after the failure of imperial and other state-building efforts. The interactions of ideas and institutions in these medieval contexts will be analyzed also to enable the student to understand the evolution of feudalism and manorialism, on one hand, and church-state conflicts, on the other, as examples. One country's evolution, usually England's, is emphasized. Prerequisite: AHI 51 is strongly recommended.

AHI 106. Renaissance and Reformation (4) Often the Renaissance is considered the start of modern times. The Reformation, besides beginning the Protestant faiths, is also frequently thought of as a gateway to the modern age. At a time when many of our crucial values, beliefs and institutions in the western world are undergoing hard questioning and examination both from within and without, it is useful to study historical periods as relevant as these two related ones. Furthermore, were they that creative in breaking away from the middle ages? Why did they think they were and why do so many still think so? Approximate chronology, 1350-1600. Prerequisite: AHI 51 is strongly recommended.

AHI 108. Absolutism and Enlightenment (4) Between approximately 1550-1775, the European state came to dominate its subjects and begin western global domination. Within these two centuries occurred the great religious wars, Scientific Revolution and the Enlightenment. The main purposes of the course are to analyze the interconnection of these developments and events and their impact on society. AHI 53 is strongly recommended.

AHI 110. The European Age, 1815-1914 (4) A study of Europe following the French Revolution and Napoleonic era and the dynamic new forces which transformed European societies: nationalism, liberalism, socialism, industrialism, imperialism and their impact upon culture and intellectual life.

AHI 114. Europe in Turmoil, 1900-1945 (4) Includes the fundamental long-range problems and immediate causes leading to World War I, Europe between the wars, and the collapse of the old order under the ordeal of World War II.

AHI 115. Europe Since 1945 (4) A comparative social, political, economic and intellectual study of Europe from the end of World War II to the present. Includes recovery from the war, the Cold War, end of the European empire, the neoliberal welfare state, Common Market and COMECON, European unification, Communism and *detente*. Offered every other year.

AHI 118/218. Revolution and the New Nation (4) A study of the period from 1763 to the 1830s emphasizing the origins and course of the Revolution, the Constitution of 1787 and the problems faced by the new nation.

AHI 120/220. The Civil War Era (4) A study of political, economic and social development in ante-bellum America; a survey and analysis of the factors leading to Civil War and the problems of reconstructing the nation after the war.

AHI 122/222. Emergence of Modern United States (4) A history of the United States from the 1890s through World War I, focusing upon economic and social change, urbanization and civil rights, political reform movements, world war and dissent.

AHI 124/224. Jazz Age to Cold War (4) The socio-economic history of the Roaring Twenties, the politico-economic crisis of the Thirties, and crucible of war and Cold War in the Forties combine to form a disturbing and prophetic prelude to our own generation.

AHI 125. East Asian Civilization I (4) A survey of the history of China and Japan, and to a lesser extent that of Central Asia, up to the mid-19th century. Offered every other year.

AHI 126/226. U.S. from World War II through Vietnam (4) 1941 ushered in the next half-century of war and Cold War. The forgotten economic miracle of the 1940's, alternatives to the "American Century," McCarthyism, Korea, '50's conformity, and '60's protest studied to resolve whether the New Frontier and Civil Rights Movement or deepening Vietnam war pointed to the future.

AHI 127. East Asian Civilization II (4) A survey of the history of China and Japan in the 19th and 20th centuries. Offered every other year.

AHI 128. The Hispanic World: Spain and the Americas (4) A study of the relationships between Spain and the Americas from the Age of Exploration to the 18th century. Analysis of imperial Spain and colonial Latin America, emphasizing political and religious institutions and values, the economy, race relations, and the full implications of these for both sides of the Atlantic.

AHI 129. The Roots of Russian History (4) A study of the political, economic, social and cultural forces that went into the formation of the Russian nation state. Particular attention is paid to the roots and development of the autocratic state and the polarized society of noble

and serf.

AHI 130. Shaping of Modern Latin America (4)

The rise of modern Latin American republics after 1825 with attention to the important developments in politics, economic life, social structure and intellectual trends. Emphasis is placed on the leading states and on the role of evolutionary change in such countries as Argentina, Brazil and Chile, or revolutionary change in Mexico and Cuba.

AHI 131. History of Modern Russia (4) World War I and the revolutions of 1917 shattered the old Russian nation with its autocracy, tradition, backwardness and poverty (despite the appearance of wealth and power), as well as forces of modernization. Under the Soviet regime, using the dynamics of revolutionary change and a totalitarian system, Russia has sought to overcome her traditional backwardness and has emerged as a world power. This course will study that transformation in depth, paying particular attention to the Soviet period.

AHI 132/232. America since Vietnam (4) America's longest war and its many connections with our economic and social decline as the Baby-Boomers age; the African-American, women's, and youth revolts from sit-ins to abortion; revolutionary foreign policy changes from World's Policeman through *detente* to post Cold War era are course highlights. Approximately 1963 to the present.

Intermediate (National, Regional, Topical)

AHI 134. Tudor and Stuart England (3) The English Renaissance and Reformation; the commercial revolution and foundations of empire; the constitutional struggle between monarchy and parliament; the Civil War, Restoration and the Glorious Revolution. AHI 53 is strongly recommended.

AHI 138. French and Russian Revolutions (4) Revolution is one of the most extreme examples of conflict in a changing society. What causes revolutions to occur? What happens when they do occur? Do revolutions tend to follow a similar course and process of development? Are revolutions likely to resolve the problems and conflicts that produce them? These are some of the questions to be faced in this study of two major European revolutions: the Great French Revolution of 1789 and the Russian Revolution of 1917.

AHI 140. History of Soviet Foreign Policy (4) An examination of the foundations and historical evolution of Soviet foreign policy from 1917 to present, including the role of ideology and tradition, the Soviet view of the outside world, the relationship of Russia to it, and the elements of continuity and change.

AHI 144. Modern Germany (4) An examination of selected political, social and intellectual issues and institutions which shaped the development of Germany in the later 19th and 20th centuries, including nationalism, The Empire, the Weimar Republic, the Third Reich and divided Germanies.

AHI 146/246. History of Mexico (4) Ancient indigenous Mexico, Spanish conquest, the development of colonial institutions, independence and the rise of the republic. The aim of the course is to view the treatment of colonial-like institutions in the context of 20th century national social revolution.

AHI 149. Southeast Asia and the West (4) A history of the states of Southeast Asia from the time of earliest contact with the West until the present day, with focus on the growth of contemporary problems in the relationship. The course will analyze the impact of the West on an important region of today's third world and trace the course of imperialist encroachment, liberation to nationhood and the internal and external problems attending modernization. Offered every other year.

AHI 150. Japan to 1868 (4) A course on the unique cultural development of Japanese civilization — from ancient times up to the point of her second encounter with the West in the mid-19th century.

AHI 151. Modernization of Japan (4) A general history of Japan from the point of renewed contact with the West (1853) until the present day, with emphasis on political change and growth. Offered every other year.

AHI 152. China to 1800 (4) A social and cultural history of China from the founding of its ancient civilization until the eve of its final decline as the world's oldest continuous traditional culture. Students will discover the dynamic basis for a civilized alternative to the western tradition. They will be introduced to the growing splendor of China's culture and the enduring magnificence of East Asia's central tradition.

AHI 153. China in Transition (4) A general history of China with emphasis on politics and foreign relations from the decline of the Ch'ing dynasty (c. 1800) to the present day. Offered every other year.

AHI 154. History of Communism in China (4) A seminar for advanced students dealing with the development of the Communist movement in China from World War I to the near present. Usual prerequisites: history or international studies major with junior or senior class standing or juniors and seniors who have taken AHI 127 or 153.

AHI 158/258. American Labor and Agriculture (4) Americans once considered all persons but bankers, gamblers, lawyers and prostitutes "working people"; the backbone of our nation included almost everyone. Emphasizing formal organizations less than most courses on this subject do, this is the history of the American people in farm, factory and shop.

AHI 160/260. History of American Business (4) This course is a description and analysis of the important changes in American business since the Revolution. Major emphasis will center on the problems that businessmen have faced, their attempts to solve these problems, their successes (and sometimes failures) and contributions to American life.

AHI 162/262. Social History of Agrarian

America (4) A survey of the origins of American society, of interpersonal relations, social mobility and class tensions through about the 1880s. AHI 164/264. **Social History of Industrial America (4)** An examination of American social changes and tensions since about the 1890s under the impact of industrialism, urbanization and consumerism.

AHI 166/266. **United States Intellectual History I (4)** An issue-oriented survey of the philosophical and ideological currents in American thought from the 17th to the 19th centuries. The focus is on the historical roots of such American values and/or ideals as democracy, intolerance, materialism, limited government and civil disobedience. The course begins with a consideration of the Puritans and ends with the issue of slavery.

AHI 168/268. **United States Intellectual History II (4)** An issue-oriented survey of the philosophical and ideological currents in American thought from the Civil War to the present. The focus is on the development of attitudes toward such issues as presidential power, big government, racism and foreign policy.

AHI 172/272. **History of the American Frontier (4)** A topical study of the Trans-Mississippi West in the 19th century from the Lewis and Clark Expedition to Wounded Knee I.

AHI 173/173. **History of California (4)** A survey of the major themes, forces, and personalities in the development of California from the beginnings of Spanish exploration and settlement through World War II.

AHI 175/275. **The California Missions 1769-1823 (2)** A concentrated study of all 21 California missions through an eight-day field trip. Open to full- or part-time students as well as other interested participants not seeking credit. However, those seeking credit must participate in the field trip, take a written examination on the mission history and present an acceptable research paper or project selected in consultation with the instructor.

AHI 176/276. **History of American Immigration (4)** An examination of immigration focusing on the United States as a nation of immigrants. Causes of emigration will be considered as well as problems of immigrant adjustment. Emphasis will be given to key topics such as assimilation, the so-called melting pot, cultural pluralism and contemporary refugees.

AHI 178. **European Intellectual History since 1789 (4)** Ideas, ideologies and thinkers of modern Europe since 1789 and their impact upon our time. Attention will be given to the ideas of the French Revolution and Romanticism, the birth of ideologies, Darwinism and materialism, irrationalism and psychoanalysis, communism and fascism, and existentialism. Within these intellectual movements the focus will be on the work of Goethe, Hegel, J. S. Mill, Darwin, Marx, the Russian Intelligentsia, Nietzsche, Freud, Lenin, Hitler and Sartre.

AHI 180. **The European Socialist Tradition (4)** Examines European Marxist socialism from its origins to the present, identifying and analyzing the main ideas in the socialist critique

of modern industrial capitalism. The course concentrates on the development of the socialist movement and the different directions taken by this movement in Europe.

AHI 182/282. **Women in United States History (4)** This course will trace the experience of women in the United States. Legal, economic, political, social and cultural dimensions will be analyzed in order to understand women's rights, restrictions and roles from colonial times to the present.

AHI 184/284. **African-American History (4)** A study of the role of Afro-Americans in the development of American policy and culture.

AHI 186. **History of the Holocaust (4)** Concerned with the antecedents and the events of the Holocaust. Attention will be given to the emergence of Nazism and the position of European Jewry before 1933, with concentration then on the Nazi policies of discrimination and genocide.

AHI 187/287. **Internship: Archival Administration (2-4)** This course will provide work experience for students interested in collecting, processing and conserving archival and manuscript resources. Work will be done at the California State Archives in Sacramento or at other appropriate institutions. No prerequisites are required but preference will be given to students with some background skills. Open to juniors and above by permission only. Pass/No Credit grading only.

AHI 189/289. **Practicum: Archival Administration (2-4)** This course will provide work experience for students interested in collecting, processing and conserving archival and manuscript resources. Work will be done in the Division of Manuscripts, Holt-Atherton Pacific Center for Western Studies, located on the University campus. No prerequisites are required but preference will be given to students with some background in U.S. history and with basic typing skills. Open to juniors and above by permission only. Pass/No Credit grading only.

Special Study

AHI 191/291. **Independent Study (2-4)** Majors may take no more than two courses for a maximum of eight units, minors no more than one course for a maximum of four units. Prerequisite: sophomore standing, minimum "B" (3.0) average in history courses.

AHI 193/293. **Special Topics (4)**

AHI 299. **Thesis (4)**

Mathematics

Professors: di Franco, Ward, Zimmermann (Chair)
Associate Professors: Bergstrom, Panico, Parker
Assistant Professors: D. Christianson, K. Whittington
Lecturer: S. Whittington

Mathematics Resource Center: D. Christianson (Director), Werner (Assistant Director)

The Department of Mathematics offers degree programs in mathematics which prepare stu-

dents for entry into the job market or for graduate training. Each program carefully blends application and theory in keeping with modern trends. Mathematics majors choose their electives from courses in probability and statistics, analysis and differential equations, operations research, and algebra/logic, in accordance with their educational objectives and career goals. Cross-disciplinary programs in applied mathematics-physics and mathematics-economics leading to a Bachelor of Science degree are available for students interested in related career or graduate school options.

The professional interests of the faculty focus on specific areas in the mathematical sciences. Faculty serve as special advisers assisting students in coordinating their total educational programs, degree options and career directions.

High School Preparation in Mathematics

Since numerous degree programs within the University require courses in mathematics, students are encouraged to complete a solid four-year high school mathematics program. In general, two years of high school algebra and one year of geometry are a minimal preparation for courses in statistics (AMA 31, 35, 37), calculus for decision making (AMA 33), elementary functions (AMA 41), mathematics teaching (AMA 161) and computer science (ACS 51). Students wishing to enter the calculus sequence (AMA 51, 53, 55) must have two years of high school algebra, one year of geometry and a full semester of trigonometry. Additional work in analytic geometry is highly recommended.

In order to enroll in AMA 31, 33, 35, 37, 41, 51, 71 and 161, students must complete a math placement examination. The department participates in the national program of testing designed by the Educational Testing Service. Subject material for the examination and sample questions are available from the department.

For students who need additional preparation before entering introductory courses, the department offers developmental skill courses in the Mathematics Resource Center in areas of basic mathematics and algebra. These courses are offered under a personalized system of instruction (PSI) and address individual students needs.

Major Programs

Students interested in mathematics can prepare for careers in such areas as statistical survey and data analysis, consulting in government and industry, research in business and scientific establishments, management science, actuarial science, and teaching. A mathematics degree coupled with carefully selected course work from other disciplines can further enhance career options and graduate school opportunities.

Students complete a core of required courses and (with the approval of the adviser) select a cohesive program of electives in accordance with their educational goals or career objectives.

Students are encouraged to take courses in other disciplines which are related to the applications of mathematics in order to expand career possibilities. A student's over-all program must receive faculty approval. In all cases, only courses passed with a grade of "C-" or better meet degree requirements.

Degree Options

1. Bachelor of Science

This degree provides a thorough foundation in theory and applications for students intending to pursue graduate studies or careers requiring explicit use of mathematics.

Requirements (15 courses, minimum 54 units)

A. Core (nine courses):

Analysis: AMA 51, 53, 55, 155 (16 units)

Algebra/Logic: AMA 49, 141, 143 (12 units)

Probability/Statistics: AMA 39 (4 units)

Computer Science: ACS 51 (3 units)

B. Electives (six courses):

Students, with the approval of the adviser, select six additional courses which form a cohesive program in accordance with their educational goals.

2. Bachelor of Arts

This degree provides a less comprehensive mathematics education. It is appropriate for liberal arts students considering careers in business, law or secondary education or for students interested in mathematics as a second major.

Requirements (12 courses, minimum 43 units)

A. Core (eight courses):

Analysis: AMA 51, 53, 55 (12 units)

Algebra/Logic: AMA 49, 141 (8 units)

Probability/Statistics: AMA 39 (4 units)

Computer Science: ACS 51 (3 units)

One of the following: AMA 143, 155 (4 units)

B. Electives (four courses):

Students, with the approval of the adviser, select four additional courses which form a cohesive program in accordance with their educational goals.

3. Mathematics Teaching

Students seeking a Single Subject credential in mathematics may select either the B.S. or B.A. option. The program must include AMA 73, 143 and 168.

4. Bachelor of Science in Applied Mathematics-Physics

The Departments of Mathematics and Physics offer an interdisciplinary major in Applied Mathematics-Physics leading to a Bachelor of Science degree. A prime objective in the program is to teach students how to apply the methodologies of both disciplines to scientific problems. Numerical solutions using the computer are integrated into the courses. In addition to the traditional goal of training students

for graduate study, the program is designed to meet the growing need for people with a solid knowledge of applied mathematics at the Bachelor's degree level. Students may prepare themselves to go directly into industrial and government positions. Alternatively, they may prepare for graduate work in mathematics, physics or a number of disciplines that depend heavily upon applied mathematics.

Requirements (15 courses, 62 units)

A. Mathematics (eight courses, 32 units):

AMA 51, 53, 55, 57, 110, 141, 151, 153

Additional courses in analysis are recommended.

B. Physics (seven courses, 30 units):

APS 53, 55, 101, 111, 181

APS 183 or an approved physics elective

Elective chosen among APS 161, 204, 211, 213

5. Bachelor of Science in Mathematics-Economics

The Departments of Mathematics and Economics offer a special cross-disciplinary major. Students take a solid core of courses in each discipline as a basis for a career or graduate studies in management science, operations research, mathematical economics or quantitative business management.

Requirements (16 courses, minimum 61 units)

A. Mathematics (eight courses, 30 units):

Calculus: AMA 51, 53, 55 (12 units)

Statistics: AMA 39 (4 units)

Operations Research: AMA 73 (4 units)

Computer Science: ACS 51 (3 units)

Upper division Mathematics: AMA 141 (4 units) or AMA 172 (3 units)

One approved elective (3 or 4 units)

B. Economics (eight courses, 31 units):

Introductory Economic Theory: AEC 53, 55 (8 units)

Intermediate Economic Theory: AEC 101, 103 (8 units)

Mathematical Economics: AEC 160 (4 units)

Econometrics: AEC 190 (4 units)

Two approved electives (7 units)

6. Cross-Disciplinary Bachelor of Science

Students may design a cross-disciplinary Bachelor of Science program relating mathematics with a natural or social science. These programs require approval of the selected departments and the Dean of the College of the Pacific.

Minor Program

The study of mathematics, being a process which develops important modes of critical thinking, can be a beneficial addition to the program of any student at UOP irrespective of his/her major. In order to encourage such a study for those who choose not to meet the rigors of a double major, a minor in mathematics is offered. The minor is designed to afford a measure of breadth and depth in the student's mathematical experience.

Only courses passed with a grade of "C-" or better can be used to meet the minor program requirements. A minimum of ten units

must be completed at UOP. Students majoring in Mathematics, Math-Econ, Math-Physics or the Math-Science Option of Computer Science will not have this minor available to them.

Requirements (six courses, 23 or 24 units)

A. Core (five courses, 20 units):

Analysis: AMA 51, 53 (8 units)

Algebra/Logic: AMA 49 and 141 (8 units)

Probability/Statistics: AMA 37 or 39 (4 units)

B. Elective: Students, with the approval of their minor adviser, must select one additional upper division mathematics course (3 or 4 units).

Course Offerings

Prerequisite Policy: Only courses passed with a grade of "C-" or better meet prerequisite requirements.

The Mathematics Resource Center administers the placement tests for the Department of Mathematics. The tests are used to place students in an appropriate course in the mathematics curriculum. The center also offers tutoring and a remedial/developmental series of self-paced mathematics courses: These courses are AMA 1, 3, 5 and 7.

AMA 1. Pre-Algebra (2) This course is designed for students whose Mathematics Placement Test score indicates a need to review arithmetic skills and pre-algebra material. Topics covered include fractions, decimals, percents, basic area and volume formulas, signed numbers, use of variables in mathematical statements, translating statements in English to mathematical equations, solving linear equations and ratio and proportion. The course is taught using a Personalized System of Instruction (PSI). PSI sections meet three times per week. The course credit does not apply toward graduation.

AMA 3. Elementary Algebra (3) Topics covered include signed numbers, linear equations, polynomials, factoring, algebraic fractions, radicals, quadratic equations, inequalities and systems of linear equations. This is an introductory course for students with limited high school background in mathematics. The course is inappropriate for students who have passed the Elementary Algebra placement exam or any higher level placement exam. The course credit does not apply toward graduation.

AMA 5. Intermediate College Algebra (3) Topics covered in this course include the real number system, solution of linear equations and inequalities, word problems, factoring, algebraic equations, exponents and radicals, quadratic equations, relations, functions, graphs, systems of equations, and logarithmic and exponential functions. This course is not appropriate for students who have passed the Intermediate Algebra placement test or any higher level placement test. A Personalized System of Instruction is used and sections meet three days per week. Students who complete AMA 5 and 7 may enroll in Calculus (AMA 51).

AMA 7. Trigonometry (2) Topics in this course include angle measure, trigonometric functions, applications of trigonometry, graphs

of trigonometric functions, trigonometric identities, inverse functions and complex numbers. This course is designed for students who have not studied trigonometry in high school. Prerequisites include a satisfactory score on the Intermediate Algebra placement test. This course is taught using a Personalized System of Instruction and meets three days per week. Students who complete AMA 5 and 7 may enroll in Calculus (AMA 51).

Statistics course selection: The Mathematics Department offers four introductory statistics courses (AMA 31, 35, 37 and 39) designed to serve the diverse needs and mathematical backgrounds of UOP students. A student can receive credit for only one of these courses. The topic coverage in AMA 31 and AMA 37 is "traditional" in nature, while AMA 35 is designed for students in the social and behavioral sciences requiring a more specialized introduction to statistics with greater emphasis on statistical methods. (See course descriptions.) AMA 37 requires a somewhat greater mathematical sophistication of the student than does AMA 31 and probes some topics in greater detail. AMA 39 is much more sophisticated mathematically, covers probability theory more extensively than the other courses, and is intended for students majoring in mathematics or engineering. Students who have questions as to which of these courses is most appropriate for their needs should consult their adviser and/or the Mathematics Department.

AMA 31. Elementary Probability and Statistics (4) The elements of descriptive statistics: graphs, tables, measures of central tendency, measures of dispersion. Probability models, including binomial and normal distributions. Introduction to hypothesis testing, estimation theory, regression and sampling distributions. Use of statistical computer programs. This course is recommended for those students interested in General Education credit. Credit will not be given for this course if a student has received credit for AMA 35, 37, or 39. Prerequisite: AMA 3 or an appropriate score on the Elementary Algebra placement test or permission of the instructor.

AMA 33. Calculus for Decision Making (4) Polynomial, rational, exponential and logarithmic functions. Differentiation. Integration. Maxima/minima of functions of several variables. Elementary differential equations. Applications to business, economics and other appropriate disciplines. Credit will not be given for this course if a student has received credit for AMA 51. Prerequisites: two years of high school algebra and an appropriate score on the Intermediate Algebra placement test.

AMA 35. Elementary Statistical Inference (4) Emphasis is on the applications and limitations of statistical methods of inference, especially in the social and behavioral sciences. Topics include estimation and test of hypothesis concerning a single group. Parametric and non-parametric comparison of two groups. One-way analysis of variance and analysis of categorical data. Use of statistical computer programs.

Credit will not be given for this course if a student has received credit for AMA 31, 37, or 39. Prerequisite: AMA 3 or an appropriate score on the Elementary Algebra placement test or permission of the instructor.

AMA 37. Probability and Statistics (4) Elements of descriptive statistics: graphs, tables, measures of central tendency and dispersion. Probability models including binomial and normal. Introduction to estimation, hypothesis testing and analysis of variance. Linear and multiple regression and correlation. Use of statistical computer programs. This course is not recommended for first semester freshmen. Credit will not be given for this course if a student has received credit for AMA 31, 35, or 39. Prerequisite: AMA 5 or an appropriate score on the Intermediate Algebra placement test or permission of the instructor.

AMA 39. Probability with Applications to Statistics (4) Probability concepts in discrete and continuous spaces will be explored in some depth as well as important probability models (eg. binomial, Poisson, exponential, normal, etc.), mathematical expectation and generating functions. Applications to statistical inference including maximum likelihood, moment and least squares estimation, confidence intervals and hypothesis testing will be covered. This course is intended for students majoring in mathematics or engineering. Credit will not be given for this course if a student has received credit for AMA 31, 35, or 37. Prerequisite: AMA 53.

AMA 41. Elementary Functions (4) Sets and real numbers. Elementary functions of algebra and trigonometry. Exponential and logarithmic functions. Elements of analytic geometry. Prerequisites: Two years of high school algebra, one year of high school geometry, and an appropriate score on the Intermediate Algebra placement test.

AMA 49. Introduction to Abstract Mathematics (4) An introduction to the spirit and rigor of mathematics. Course content may vary with instructor, but the objective is to develop the skills required to read and write mathematics and prove theorems. Concepts: elementary logic, sets and functions, cardinality, direct and indirect proofs, mathematical induction. Prerequisite: AMA 53.

AMA 51. Calculus I (4) Differential calculus of algebraic and elementary transcendental functions. Antiderivatives and definite integral. Conics. Applications. Credit will not be given for this course if a student has received credit for AMA 33. Prerequisite: AMA 41 or three years of high school mathematics including trigonometry and an appropriate score on the Pre-Calculus placement test.

AMA 53. Calculus II (4) Techniques of integration. Applications. Polar coordinates. Parametric curves in the plane. Taylor polynomials and infinite series. Prerequisite: AMA 51.

AMA 55. Calculus III (4) An introduction to multivariable calculus and linear mathematics. Topics covered include vector geometry of the plane and Euclidean 3-space; differential cal-

culus of real-valued functions of several variables, including partial derivatives, gradient, max-min theory, quadric surfaces, multiple integrals, line integrals. Prerequisite: AMA 53
AMA 57. Ordinary Differential Equations I (4) Ordinary differential equations, first-order equations, separable, exact, linear, integrating factors; second-order equations, linear equations with constant coefficients, the methods of undetermined coefficients and variation of parameters. Laplace Transforms. First-order systems. Matrix algebra, eigenvalues, eigenvectors. Linear systems. Existence and Uniqueness Theorems. Fourier series. Applications. Prerequisite: AMA 55 or permission of instructor.
AMA 73. Operations Research Models (4) Operations Research (OR) is concerned with scientific design and operation of systems which involve the allocation of scarce resources. This course will survey some of the quantitative techniques used in OR. Linear Programs will be solved using graphical techniques and the simplex algorithm. Among the other models studied will be the transportation, assignment, matching, and knapsack problems. Prerequisite: AMA 5 or suitable score on the placement exam.

AMA 89a, 189a. Statistical Consulting Practicum (2, 2) While working under close faculty supervision, students will gain valuable practical experience in applying statistical methods to problems presented by University researchers, business and industry. Students will be expected to participate in all levels of the consulting process including: problem definition, literature search, statistical computing, interpretation of results and report writing. Frequent meetings (at least bi-weekly) will be held where students will have an opportunity to share their activities in a seminar setting. Students enrolled in AMA 189a will ordinarily participate in more sophisticated projects and take a more responsible role than students in AMA 89a. Pass/No credit. Prerequisite: for AMA 89a, concurrent enrollment in AMA 130 or permission of instructor; for AMA 189a, AMA 89a and permission of the instructor.

Probability and Statistics

AMA 130. Topics in Applied Statistics (3) This course covers topics in applied statistics not normally covered in an introductory course, including multiple regression and correlation, analysis of variance of one and two way designs; other topics selected from nonparametric methods, time series analysis, discriminant analysis, factor analysis, depending upon student interest. Extensive use of packaged computer program. Prerequisites: an introductory course in statistics and permission of the instructor.

AMA 131. Probability Theory and its Applications (4) Emphasis is on the behavior and modeling of random phenomena with an introduction to stochastic processes. Topics include probability spaces, combinatorics and sampling, discrete and continuous models, conditional

probability and independence, mathematical expectation, generating functions and convolutions, Central Limit Theorem, the weak law of large numbers. Prerequisite: AMA 53.

AMA 134. **Mathematical Statistics** (3) Emphasis is on the theory underlying the methods of statistical interference. Topics include discrete and continuous random variables, multivariate distributions, marginal and conditional distributions, mathematical expectation, theory of estimation and hypothesis testing. Prerequisites: AMA 55 and 131. One of the courses, AMA 31, 35 or 37 is also recommended.

Algebra and Logic

AMA 141. **Linear Algebra** (4) This is a first course in linear algebra covering vector spaces, subspaces, linear independence, bases, dimension, linear transformations, matrices, determinants, eigenvalues and eigenvectors. Applications to a variety of disciplines will be included. Prerequisites: AMA 49 or permission of the instructor.

AMA 143. **Abstract Algebra** (4) Concepts of algebraic structures and axiomatic theories, number theory, congruence, integers, polynomials and integral domains. History of the development of algebra and number systems. Introduction to theories of groups, rings and fields. Prerequisite: AMA 49.

AMA 148. **Introductory Mathematical Logic** (3) Topics include the basic principles of deductive reasoning found in the propositional calculus, first-order predicate calculus and mathematical theories (e.g., validity, rules of inference, formal proof). Transfer of formal proof technique to "informal" mathematical proofs is accomplished by consideration of examples such as number theory, set theory and cardinal numbers, Boolean Algebras and group theory. These examples raise long-standing unsolved problems and lead to a discussion of completeness and consistency of first-order theories. Prerequisites: AMA 49 and permission of the instructor.

Analysis and Differential Equations

AMA 110. **Numerical Analysis** (4) Numerical analysis deals with approximation of solutions to problems arising from the use of mathematics. The course begins with a necessary but brief discussion of floating point arithmetic, and then proceeds to discuss the computer solution of linear algebraic systems by elimination and iterative methods, the algebraic eigenvalue problem, interpolation, numerical integration, including a discussion of adaptive quadrature, the computation of roots of nonlinear equations and the numerical solution of initial value problems in ordinary differential equations. Prerequisites: AMA 55 and ability to program in at

least one language.

AMA 151. **Vector Analysis** (4) Vector analysis and related topics for students of applied mathematics, physics and engineering. Vector field; gradient, divergence and curl; coordinate transformation; integral theorems. Applications. Prerequisite: AMA 55.

AMA 152. **Ordinary Differential Equations II** (4) The primary emphasis in this course will be upon ordinary differential equations. Topics include existence and uniqueness theorems, phase plane analysis, systems of equations, orthogonal functions, eigenvalue problems, Sturm-Liouville systems and a few examples of elementary partial differential equations. Prerequisite: AMA 57.

AMA 153. **Mathematical Methods in the Physical Sciences** (4) This course surveys mathematical methods in the physical sciences and engineering. Systems of ordinary differential equations, series solutions and the Frobenius method for ordinary differential equations, solution of partial differential equations using Fourier series, eigen-function expansions for Sturm-Liouville systems, Fourier transforms. Survey of relevant computer packages related to differential equations. Prerequisite: AMA 57.

AMA 154. **Partial Differential Equations** (4) Topics include first order non-linear equations; classification of second order equations, Cauchy-Kowalewska Theorem, hyperbolic, parabolic and elliptic problems. Prerequisite: AMA 57.

AMA 155. **Introduction to Real Analysis** (4) Properties of the real numbers. Sequences and series of real numbers. Limits, continuity and differentiability of real functions of one and several variables. Implicit and inverse function theorems. Integration theory of real functions including the change of variable theorem. Convergence of sequences and series of functions. Uniform convergence and power series expansions of functions. Prerequisite: AMA 49 and 55.

AMA 158. **Introduction to Complex Analysis** (4) Analytic functions. Line integrals. The Cauchy Integral Formula. Power series. Theory of residues. Conformal mapping. Prerequisite: permission of the instructor.

Mathematics Teaching

AMA 161. **Elementary Concepts of Mathematics I** (4) Concepts of arithmetic and geometry underlying elementary school programs in mathematics. Laboratory materials will be used to reinforce understanding of concepts. Prerequisite: AMA 3, or appropriate score on placement test. Not open to freshmen.

AMA 162. **Elementary Concepts of Mathematics II** (4) Development of arithmetic and geometric concepts within a classroom setting. The course includes related topics such as diagnostic/prescriptive techniques, the use of calculators and computers, approaches to a K-8 math curriculum, and current trends within mathematics education. The course will include

field experiences, seminar discussions and laboratory workshops. Prerequisite: AMA 161 or permission of instructor.

AMA 166. **Mathematical Concepts for Secondary Education** (3) An in-depth coverage of the secondary mathematics curriculum. The course includes related topics such as problem solving, recreational mathematics, approaches to a 7-12 math curriculum, and current trends within mathematics education. Recommended for prospective high school mathematics teachers. Prerequisites: AMA 53 and FEP 121.

AMA 168. **Modern Geometries** (4) Selected topics from Euclidean, non-Euclidean and transformational geometry. Both analytic and synthetic methods. History of the development of geometries and axiomatic systems. Laboratory materials used to reinforce understanding of the concepts. Recommended for high school teachers. Prerequisite: permission of the instructor.

AMA 89b. **Mathematics Tutoring Practicum**

(1, 1) Students will tutor a minimum of 45 hours in the Mathematics Resource Center under faculty supervision. A training class prior to the semester in which the student tutors is required. Students will also attend training sessions during the semester in which they tutor. Instruction in content, tutoring techniques and learning theory will be given. Pass/No Credit. Prerequisites: an A or B in AMA 33 or 51 and permission of the instructor.

Operations Research

AMA 172. **Topics in Operations Research** (3) In-depth study of one or more selected topics from operations research, such as programming (linear, nonlinear, dynamic, integer, etc.), networks, graph theory, game theory, queueing, inventory, reliability, Markov processes, time series, statistical forecasting, classical optimization techniques and simulation. Prerequisites: AMA 37 or 39, and AMA 73; or permission of the instructor. Course may be repeated once for credit.

Special Areas

AMA 93. **Special Topics** (lower level) (3, 4)
AMA 191. **Independent Study** (2-4) Student-initiated projects covering topics not available in regularly scheduled courses. A written proposal outlining the project and norms for evaluation must be approved by the department chairperson.

AMA 193. **Special Topics** (upper level) (3, 4)

Modern Language and Literature

Professors: Dash, J. Kreiter, R. Kreiter, Sharp, Takaya
Associate Professor: Sayles (Chair)
Assistant Professors: Giráldez, Karpuk, Krieger, Triantaphilides

The Department of Modern Language and Literature offers courses in the Chinese, French, German, Japanese, Portuguese, Russian and Spanish languages, literatures and cultures.

Classes are small and relaxed; faculty are available for consultation, individual help and social contact. Honor societies and language clubs provide regular activities related to the cultures represented by the language areas of the department.

Through the Department of Classics, it is possible to do work in Latin and Greek. Special programs and courses in business, economics, education, English-as-a-second language, geography, history and political science provide opportunities for supportive work and experience in the international area. Practicum experience in foreign language instruction in Stockton-area elementary and secondary schools is provided through two supervised programs.

Requirements for the Major

The minimum requirements for the major in French, German and Japanese are six courses (24 units) beyond the intermediate level, three of which must be completed in this department; the minimum requirement in Spanish is 26 units, 14 of which must be completed in this department; all majors must also demonstrate oral proficiency in the language of their major at the ACTFL Advanced level (Japanese administers its own test for demonstrated oral proficiency) and complete one four-unit course in another modern language, Latin, Greek or linguistics. It is expected that students preparing a major in a single language area, particularly those who plan to teach or to pursue graduate study, will take more than the basic requirement, and it is recommended that they develop advanced level proficiency in a second modern language.

a. The required courses for the major in **French** are one "A" course from the *Civilisation Française* or the *Littérature Française* series and one "B" course from either series (or approved equivalents), plus a course in advanced language such as *Grammaire, Composition et Stylistique* or *French of Business and Economics*.

b. The required courses for the major in **German** are *German Culture and Society I and II* or equivalents covering the same chronological periods, plus *Spoken and Written German*. The latter may be waived with special permission.

c. The required courses for the major in **Japanese** are *Advanced Japanese I or II*, plus a comprehensive survey course: *Japanese Literature*

in Translation, *Japanese Culture and Civilization* or approved equivalent. The remaining courses should be chosen in consultation with the major adviser. Among the six advanced courses required for the major no more than two approved courses in which the Japanese language is not a major element in instruction will be accepted.

d. The required courses for the major in **Spanish** are *Historia de la Literatura Española Hasta 1800*, *Historia de la Literatura Española Desde 1800*, *Literatura Hispanoamericana del Siglo XX*, *Gramática Avanzada* or their equivalents; six units of elective Spanish courses must be taken in this department.

e. A Russian Area Studies major may be self-designed through the Center for Integrated Studies.

Requirements for the Minor

a. Minor in Modern Languages:

1) Five courses (20 units), including at least three in the Modern Language and Literature Department, as specified below: completion of fourth semester college-level courses in three of the following languages — French, German, Japanese, Spanish. Proficiency examination may be substituted for one or more of these courses. Completion in the Modern Language and Literature Department of two advanced courses in the principal language (the language chosen among the three).

2) Demonstrated oral proficiency at the ACTFL Intermediate Level (Japanese and Chinese administers its own test for demonstrated oral proficiency).

b. Minor in Chinese:

Six courses (a minimum of 24 units) to include AML 11a, 11b, 23, and 25. In addition, two advanced courses in the Modern Language and Literature Department, one of which must be in the Chinese language. Or: AML 11a, 11b, and 23, plus completion of an approved semester (minimum 15 units) or year-long program in China or Taiwan. Students who acquired competency in Chinese prior to University study may be exempted by the Modern Language and Literature Department from a maximum of 8 units.

c. Minor in French:

Five courses (20 units), in French beyond second semester, first year. At least three of the five required courses (two of them at the advanced level), are to be completed in the Modern Language and Literature Department. At least three of the five courses must be advanced courses, one from each of the following areas: one advanced course on modern culture, language or civilization (such as AML 107, 109, 110 or 114); one advanced course in French literature (any period); one advanced level elective. Demonstrated oral proficiency at the ACTFL Intermediate Level.

d. Minor in German:

Five courses (20 units), in German beyond second semester, first year. At least three of the five required courses (two of them at the ad-

vanced level), are to be completed in the Modern Language and Literature Department. At least three of the five courses must be advanced courses, and must include AML 111 and either AML 104 or 106 or their equivalent. Demonstrated oral proficiency at the ACTFL Intermediate Level.

e. Minor in Japanese:

Six courses (a minimum of 24 units) to include: AML 11a, 11b, 23, and 25. In addition, two approved advanced courses of which at least one must be in the Japanese language. Demonstrated proficiency at the intermediate level. At least three of the six required courses, including the two advanced courses, must be taken in the Department of Modern Language and Literature. Students who acquire competency in Japanese prior to University studies may be exempted from a maximum of 8 units of the requirement. (Japanese administers its own test for demonstrated oral proficiency on the intermediate level.)

f. Minor in Spanish:

Twenty units beyond AML 23 Intermediate Spanish, third semester. Thirteen units must be studied in the Department of Modern Language and Literature and include the following courses or their equivalent: AML 27, 101b, 105 and 111. Demonstrated oral proficiency at the ACTFL Intermediate Level.

g. **Minor in Russian Area Studies:** See under Center for Integrated Studies (page 34).

Cross-Disciplinary Study

a. A program in Economics-Modern Languages provides preparation for graduate study and careers in international business, economics, international management, international studies, government, foreign languages and literatures. Students unable to complete a double major in economics and a foreign language may major in economics and develop a certified concentration in French, German, Japanese or Spanish, or major in one of these languages while completing a certified concentration in economics. The concentration in economics consists of five specified courses (AEC 53, 55, 121, 124, 127 or substitute courses approved by the Economics Department). The concentration in French, German, Japanese or Spanish requires five courses or their equivalents, a minimum of one being at the advanced level. The last three courses of the concentration must be completed in this department. For information see B. Sayles, *Modern Language and Literature*, or the chairperson of the Economics Department.

b. **Minor In Russian Area Studies** (see under Center for Integrated Studies, page 34).

c. A Russian Area Studies major may be self-designed through the Center for Integrated Studies.

d. Programs in International Relations, International Studies (see School of International Studies), and a Master's degree program in Inter-American Studies are complemented by strong work in foreign language and culture.

Course Offerings

Unless otherwise specified in this listing all coursework is done in the foreign language.

General

AML 30. Introduction to Formal Analysis of Language (4) In this course students will learn the basic principles and structures of language. The focus is on the procedures which linguists use to discover the underlying structure and forms in language. Students will examine and practice these procedures. Their ability to analyze and solve problems will be enhanced. The target language is English, although other languages might be used to clarify language structures where necessary.

AML 51. French Literature in Translation (4) See description under French.

AML 73. Russian Culture and Civilization (4) See description under Russian.

AML 78. Tokugawa Literature (4) See description under Japanese.

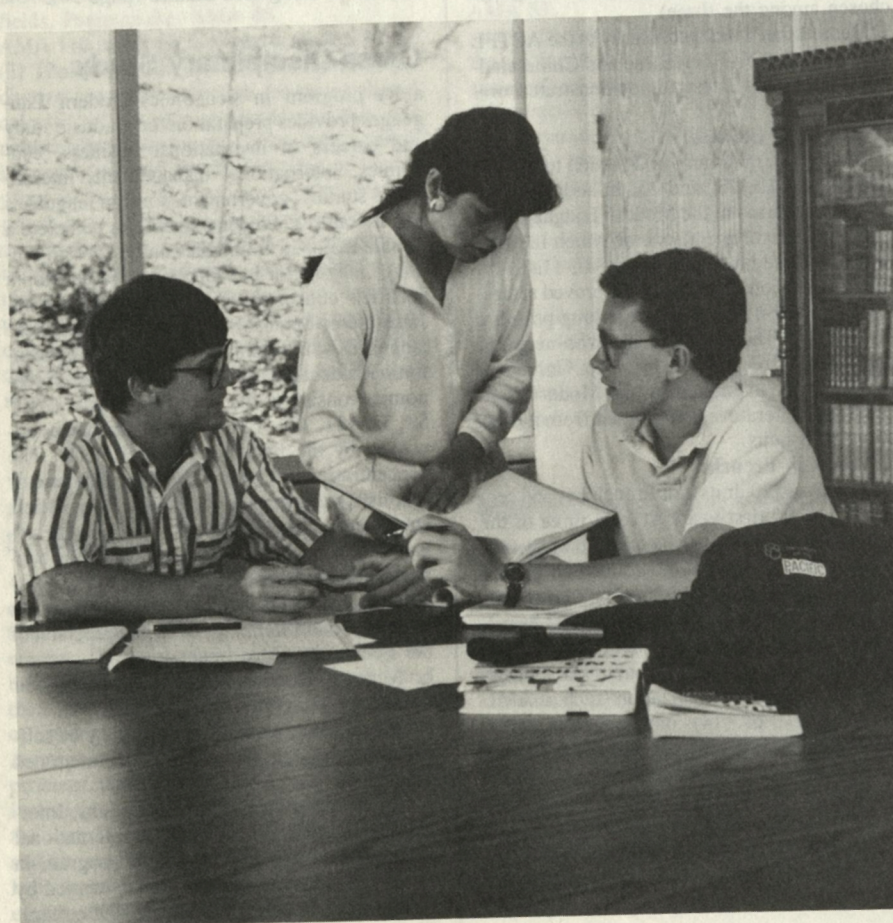
AML 87. Internship in Applied Language (2) This course provides opportunities to use French, German, Japanese or Spanish under supervised conditions in area schools or businesses. Registration is subject to departmental approval and is ordinarily limited to advanced

students who are registered in another course in the same language. Credit may not be counted for the major. May be repeated once. Pass/No Credit grading only.

AML 89. Practicum (2) This course is designed to give the student opportunity to work with language in practical situations under supervised conditions. Each category may be taken once for credit, to a maximum of eight units. Practicum courses may not be counted among the six courses required for the major. Permission of the instructor is required for registration. Registration is ordinarily limited to advanced students who are registered in another course in the same language. Pass/No Credit grading only.

AML 89a. Children's French, German, Japanese or Spanish, Level I This course provides practical experience under supervised conditions in aiding children to acquire elementary skills in French, German, Japanese or Spanish. Work is done in conjunction with elementary schools in the Stockton area.

AML 89b. Children's French, German, Japanese or Spanish, Level II This course provides practical experience under supervised conditions in aiding children to acquire elementary skills in French, German, Japanese or Spanish. Work is done in conjunction with elementary schools in the Stockton area.



AML 89b. Children's French, German, Japanese or Spanish, Level II This course provides practical experience under supervised conditions in aiding children to build upon elementary abilities in French, German, Japanese or Spanish. Work is done in conjunction with elementary schools in the Stockton area.

AML 89c. PSI Practicum 1 This course provides practical experience under supervised conditions in college level PSI (Personalized System of Instruction) in first semester French.

AML 89d. PSI Practicum 2 This course provides practical experience under supervised conditions in college level PSI in second semester level French.

AML 89e. Discussion Leadership This course provides practical instructional experience under supervised conditions in college level Chinese, French, Japanese or Spanish courses. Registration is subject to departmental approval.

AML 170. Japanese Literature in Translation (4) See description under Japanese.

AML 172. Japanese Culture and Civilization (4) See description under Japanese.

AML 200. Foreign Languages: Theory and Application (2) A systematic study of the methodologies and theories of foreign language learning and teaching. Special attention is given to developing a pragmatic, eclectic method of teaching for each student and his/her particular needs. A study of textbook evaluation, classroom management, course and lesson planning, testing, and audiovisual and laboratory materials and use are an integral part of the course. Taught in English. Permission of the instructor required.

Chinese

AML 11a. First Year Chinese, First Semester (4) Beginning training in the basic language skills of understanding, speaking, reading and writing at the first semester level. Cultural approach. Laboratory.

AML 11b. First Year Chinese, Second Semester (4) Training in the basic language skills of understanding, speaking, reading and writing at the second semester level. Cultural approach. Laboratory. Prerequisite: first semester Chinese, equivalent or permission of instructor.

AML 23. Intermediate Chinese, Third Semester (4) Instruction in the intermediate language skills, including reading, writing and conversation. Prerequisite: second semester Chinese, equivalent or permission of instructor.

AML 25. Intermediate Chinese, Fourth Semester (4) Continued language training at the advanced intermediate level of Chinese. Prerequisite: third semester Chinese, equivalent or permission of instructor.

AML 102. Classics of Asian Civilization (4) A survey of some of the major literary, religious, and philosophical texts that constitute the "Great Traditions" of Asian civilization. The course treats India, China, Japan, Korea, and Vietnam, with primary emphasis on China.

AML 193. Special Topics (4)

French

AML 11a. First Year French, First Semester (4) Beginning training in the basic language skills of understanding, speaking, reading and writing at the first semester level. Cultural approach. Laboratory. Students with previous experience in French will be initially placed in sections in accordance with their linguistic proficiency. Placement is subject to continuing reevaluation.

AML 11b. First Year French, Second Semester (4) Training in the basic language skills of understanding, speaking, reading and writing at the second semester level. Cultural approach. Laboratory. Placement is subject to continuing reevaluation. Prerequisite: first semester French, equivalent or permission of instructor.

AML 15. French Proficiency Maintenance (1) This course will permit students who are unable to continue the sequence of language courses in French to maintain their abilities in the language. May be repeated once for credit. Pass/No Credit grading only. May not be taken concurrently with another course in the same language. Prerequisites: a minimum of two semesters of college French or equivalent and permission of instructor.

AML 19. French Individualized Instruction, First Year (1-8) French language and culture presented in an individualized instruction format, with emphasis options, mastery-based testing, an "open" schedule, variable credits. This course must be taken for a minimum of two units (unless taken in conjunction with French 21 during the same semester), and may be repeated to a maximum of eight units. Completion of four units is the equivalent of classroom track French 11a; completion of eight units is the equivalent of French 11b. Units scheduled at registration are to be confirmed or adjusted at least five weekdays prior to the last day to drop classes. Students with previous experience in French will initially be placed at the proper level by a placement interview. Permission of instructor required.

AML 21. French Individualized Instruction, Third Semester (1-4) French culture and language presented in an individualized instruction format, with grammar review, emphasis options, mastery-based testing, an "open" schedule, variable credits. This course must be taken for at least two units (unless taken in conjunction with French 19 during the same semester), and may be repeated once to a maximum of four units, making it the equivalent of classroom track French 23. Units scheduled at registration are to be confirmed or adjusted at least five weekdays prior to the last day to drop classes. Students with previous experience in French will initially be placed at the proper level by a placement interview. Permission of instructor required.

AML 23. Intermediate French, Third Semester (4) Rapid review of French grammar as a functioning system. Readings and conversations in French on French civilization, daily life and literature. Laboratory. Prerequisite:

second semester French, equivalent or permission of instructor.

AML 25. Intermediate French, Fourth Semester (4) Readings and discussion in French on a theme or related group of themes. Continued language training at the advanced intermediate level. Prerequisite: third semester French, equivalent or permission of instructor.

AML 27. Conversation (2) May be repeated once for credit. Does not count as one of six courses required for the French major, but recommended to all students desiring to maintain and improve a basic proficiency in practical conversational French. Permission of instructor required.

AML 29. Spoken and Written French (4) French phonetics and its application to conversation. Composition exercises. An advanced intermediate level course designed to be taken immediately before or after French 25 or equivalent.

AML 51. French Literature in Translation (4) A study of selected themes, periods or forms in French literature. Readings, discussions, lectures, exams in English. Not applicable to major in French.

AML 93. Special Topics (4)

AML 107. Introduction to French of Business and Economics (4) This course will provide 1) an opportunity to acquire and to discuss, in French, background on contemporary French life and the economic systems which serve it; 2) workshop opportunities to solve practical problems of commerce through business correspondence, oral interviews, etc., in French. Students will gain introductory knowledge about France and its economy, acquiring at the same time active and passive abilities in the practical uses of French for commercial, business and academic purposes. At the conclusion of the course, students may seek certification through the exams of the *Certificat Pratique de Français Economique et Commercial* of the *Chambre de Commerce et d'Industrie de Paris* (optional). Prerequisite: four semesters of college French, equivalent or permission of instructor.

AML 109. Advanced French of Business and Economics (4) This course will permit advanced students with some background in the French economy and in the uses of French for commerce and business to acquire further information, insights and abilities. Activities and materials aim at the level of competency of the *Diplôme Supérieur de Français des Affaires* awarded through UOP after competitive examinations of the *Chambre de Commerce et d'Industrie de Paris* (optional). Prerequisite: AML 107, equivalent or permission of instructor.

AML 110. Grammaire, Composition et Stylistique (4) Essential principles of syntax; Composition; "Explication de textes." Prerequisite: 4 semesters of college French or equivalent.

AML 112, 114, 116 and 118 are scheduled only in the fall semester. Each is given once during a four-year period.

AML 112. Civilisation Française A (4) A

survey of the culture and civilization of France from the Middle Ages through the 17th century. Prerequisite: four semesters of college French, equivalent or permission of instructor.

AML 114. Civilisation Française B (4) A survey of the culture and civilization of France from the 18th century to the present. Prerequisite: four semesters of college French, equivalent or permission of instructor.

AML 116. Littérature Française A (4) An introductory study of French literature from the Renaissance through the 18th century. Prerequisite: four semesters of college French, equivalent or permission of instructor.

AML 118. Littérature Française B (4) An introductory study of French literature of the 19th and 20th centuries. Prerequisite: four semesters of college French, equivalent or permission of instructor.

AML 120. Moyen-Age (4) Literature of the Middle Ages in France, principally the epic and the "roman courtois." Prerequisite: four semesters of college French or equivalent.

AML 122. Seizième Siècle (4) The origins, themes and styles of French Renaissance literature examined in the major works of principal authors. Prerequisite: four semesters of college French or equivalent.

AML 124. Dix-Septième Siècle (4) The "Grand Siècle": The themes of appearance and reality, of harmony and disorder, as seen principally in prose works and the theatre. Prerequisite: four semesters of college French or equivalent.

AML 126. Dix-Huitième Siècle (4) Works of major novelists and "philosophes." Chénier. Prerequisite: four semesters of college French or equivalent.

AML 128. Dix-Neuvième Siècle (4) Principal productions of the major writers from the pre-romantics through the symbolists. Prerequisite: four semesters of college French or equivalent.

AML 130. Vingtième Siècle (4) An exploration of major trends, themes and styles as exemplified in the important literary works of the 20th century. Prerequisite: four semesters of college French or equivalent.

AML 191. Etudes Indépendantes (2-4) Ordinarily limited to majors in their senior year.

AML 193. Etudes Spécialisées (4) Prerequisite: four semesters of college French or equivalent.

German

AML 11a. First Year German, First Semester (4) Beginning training in the basic language skills of understanding, speaking, reading and writing at the first semester level. Cultural approach. Laboratory. Students with previous experience in German will be initially placed in sections in accordance with their linguistic proficiency. Placement is subject to continuing reevaluation.

AML 11b. First Year German, Second Semester (4) Training in the basic language skills of understanding, speaking, reading and writing at the second semester level. Cultural approach.

Laboratory. Placement is subject to continuing reevaluation. Prerequisite: first semester German, equivalent or permission of instructor.

AML 15. German Proficiency Maintenance (1) This course will permit students who are unable to continue the sequence of language courses in German to maintain their abilities in the language. May be repeated once for credit. Pass/No credit grading only. Prerequisite: a minimum of two semesters of college German, equivalent or permission of instructor. Course may not be taken concurrently with another course in the same language.

AML 19. German Individualized Instruction, First Year (1-8) German language and culture presented in an individualized instruction format, with mastery-based testing, an "open" schedule, variable credits. This course must be taken for a minimum of two units (unless taken in conjunction with German 21 during the same semester), and may be repeated to a maximum of eight units. Completion of four units is the equivalent of classroom track German 11a; completion of eight units is the equivalent of German 11b. Units scheduled at registration are to be confirmed or adjusted at least five weekdays prior to the last day to drop classes. Students with previous experience in German will initially be placed at the proper level by a placement interview. Permission required.

AML 21. German Individualized Instruction, Third Semester (1-4) German culture and language presented in an individualized instruction format, with grammar review, mastery-based testing, an "open" schedule, variable credits. This course must be taken for at least two units (unless taken in conjunction with German 19 during the same semester), and may be repeated once to a maximum of four units, making it the equivalent of classroom track German 23. Units scheduled at registration are to be confirmed or adjusted at least five weekdays prior to the last day to drop classes. Students with previous experience in German will initially be placed at the proper level by a placement interview. Permission required.

AML 23. Intermediate German, Third Semester (4) Rapid review of German grammar as a functioning system. Readings and conversations in German on German civilization, daily life and literature. Laboratory. Prerequisite: second semester German, equivalent or permission.

AML 25. Intermediate German, Fourth Semester (4) Readings and discussion in German on a theme or related group of themes. Continued language training at the advanced intermediate level. Prerequisite: third semester German, equivalent or permission.

AML 93. Special Topics (4)

AML 104. German Culture and Society I (4) A survey of major cultural and artistic developments in Germany from the Roman times to Bismarck with emphasis on the period from the Enlightenment to 1871. Readings, discussions and lectures on philosophy, art, literature, music, politics and religion. Prerequisite: four semesters of college German, equivalent or

permission.

AML 106. German Culture and Society II (4) A study of the major cultural, artistic and political forces of the past 100 years that have shaped the German mind of today. Figures such as Nietzsche, Freud, Schönberg, Thomas and Heinrich Mann, Goebbels, Heinrich Böll along with topics such as Expressionism, Dada, New Objectivity, the Third Reich, the postwar experience form the subject matter of the course. Prerequisite: four semesters of college German, equivalent or permission.

AML 108. Introduction to German for Business and Economics (4) An introduction to the vocabulary and practices of the German-speaking business community and economic environment. Students will gain an overview of these facets of the German culture while practicing and extending their language skills through readings, audiovisual materials and through oral and written reports that focus on topics such as economic geography, production, trade and services. Prerequisite: AML 25, equivalent or permission of the instructor.

AML 111. Spoken and Written German (4) Intensive practice in composition and conversation with an emphasis on topics current in German speaking countries after World War II. Prerequisite: four semesters of college German, equivalent or permission. Course may be repeated for credit at the discretion of the instructor.

AML 124. German Writers of the Nineteenth Century (4) This course focuses on developments in the drama and the *Novelle* in the work of such writers as Büchner, Kleist, Tieck, Mörike, Hoffmann, Eichendorff, Grabbe, Keller, Stifter and Storm. Prerequisite: four semesters of college German, equivalent or permission.

AML 128. German Poetry (4) Traditions and innovation in German lyric poetry seen against the backdrop of sociocultural patterns of selected periods from the Middle Ages to the present. Prerequisite: four semesters of college German, equivalent or permission of instructor.

AML 132. Goethe and Schiller (4) This course will focus on these two great figures as the culmination of cultural developments in the eighteenth century from the Enlightenment to Romanticism. Prerequisite: four semesters of college German, equivalent or permission of instructor.

AML 134. Modern German Prose (4) Revolving around particular themes such as experiment and tradition, protest and prophesy in the novel, this course will study the great prose works of some of the following writers: Kafka, Thomas Mann, Musil, Hesse, Grass, Broch and Böll. Prerequisite: four semesters of college German, equivalent or permission of instructor.

AML 136. Modern German Drama (4) A study of the major currents and writers in 20th-Century German theater, such as Naturalism, Expressionism, Epic Theatre, Theater of the Absurd, Hauptmann, Brecht, Weiss and Handke. Prerequisites: four semesters of college German, equivalent or permission of

instructor.

AML 191. Independent Study (2-4) Ordinarily limited to majors in their senior year.

AML 193. Special Topics (4)

Japanese

AML 11a. First Year Japanese, First Semester (4) Beginning training in the basic language skills of understanding, speaking, reading and writing at the first semester level. Cultural approach. Laboratory. Students with previous experience in Japanese will be initially placed in accordance with their linguistic proficiency. Placement is subject to continuing reevaluation.

AML 11b. First Year Japanese, Second Semester (4) Training in the basic language skills of understanding, speaking, reading and writing at the second semester level. Cultural approach. Laboratory. Placement is subject to continuing reevaluation. Prerequisite: first semester Japanese, equivalent or permission of instructor.

AML 11a/11b. Accelerated First Year Japanese (8) An accelerated course at the first year level. Its aim is to provide basic training in the elementary language skills. Students will learn fundamental grammar, idiomatic expressions, hiragana, katakana and basic kanji characters. In addition to reading, writing and speaking, oral-aural drills will be stressed, as will the relationship between language and culture.

AML 23. Intermediate Japanese, Third Semester (4) Instruction in the intermediate language skills, including writing and conversation: emphasis on reading and translating from Japanese into English. In addition to an assigned text, materials from other Japanese sources such as current magazines and newspapers will be included. Laboratory. Prerequisite: second semester Japanese, equivalent or permission of instructor.

AML 25. Intermediate Japanese, Fourth Semester (4) Continued language training at the advanced intermediate level. In addition to a standard reader, materials from other Japanese sources including current magazines and newspapers will be introduced. Prerequisite: third semester Japanese, equivalent or permission of instructor.

AML 78. Tokugawa Literature (4) A survey of one of the greatest periods in Japanese literature extending from the beginning of the 17th century to the mid-19th century when the townspeople dominated the literary and cultural life of feudal Japan. Hence literature, which had once belonged exclusively to the aristocrats and the warrior class, became available to everyone. Important developments in prose, poetry and drama will be discussed together with their historical and cultural significance. Taught in English. This course may not be counted as one of the six courses required for the major in Japanese.

AML 93. Special Topics (4)

AML 125. Advanced Japanese I (4) Selective reading and discussion in Japanese of contemporary literary works in prose, poetry and drama. Translation projects. Continued train-

ing in writing and conversation. Prerequisites: Japanese AML 25 or equivalent; permission of instructor. (AML 125 or 126 may be taken independently.)

AML 126. Advanced Japanese II (4) Selective reading and discussion in Japanese of contemporary literary works in prose, poetry and drama. Translation projects. Continued training in writing and conversation. Prerequisites: Japanese AML 25 or equivalent; permission of instructor. (AML 125 or 126 may be taken independently.)

AML 128. Advanced Writing and Conversational Japanese (4) Concentrated study in composition and spoken Japanese based on reading materials selected from current magazines and newspapers. Prerequisites: either AML 125, 126 or equivalent; permission of instructor.

AML 140. Modern Business Japanese (4) In this course the students will become familiar with some of the basic, standardized forms of correspondence used in the daily conduct of Japanese business. They will learn useful terms and expressions in business which may also have wider application outside of this area. Through role-playing, the students will be encouraged to distinguish and utilize the different levels of Japanese according to the change of social situations and participants involved. The classroom materials will consist mainly of materials in Japanese and related directly to business and industry in Japan. The historical and cultural background will be incorporated to promote the proper understanding and usage of Japanese in the world of business. Prerequisite: four semesters of college Japanese, equivalent or permission of instructor.

AML 170. Japanese Literature in Transition (4) A survey of Japanese literature from the 8th century to the present. The unique body of prose, poetry and drama that developed during this thousand-year epoch — mostly in relative isolation from the rest of the world — represents a brilliant literary heritage rarely matched anywhere in the world. Taught in English.

AML 172. Japanese Culture and Civilization (4) A survey of the basic features of Japanese culture and civilization as seen through literature and the other creative arts from the earliest times to the present. Taught in English.

AML 174. Modern Japanese Theatre (4) A survey of modern Japanese theatre, focusing especially on the years after 1945 when it gradually developed into one of the world's truly dynamic and original forms of contemporary performing art. We shall examine closely some of the major plays from the postwar period in order to appreciate more fully the style and content identified with this new theatre movement, which started in the late 19th century as a reaction to the prevailing theatrical tradition of Japan. Readings will be done in Japanese. Tests, papers and discussions will be in English. Prerequisites: Either AML 125, 126 or equivalent; permission of instructor.

AML 176. Meiji Literature (4) A survey of

the main developments in Japanese literature during the Meiji period (1868-1911): the study of its major authors and their representative works in prose, poetry and drama. An important theme of this course will be tradition versus change in Japan — a once feudal society rapidly turning into a modern, industrial nation — and how this fascinating process is reflected in the literature of the times. Readings will be in Japanese. Tests, papers and discussions will be in English. Prerequisites: either AML 125, 126 or equivalent; permission of instructor.

AML 180. Modern Japanese Fiction (4) A study of Japanese fiction as a literary genre after 1867 and up to the present. This course will examine representative works by Natsume Soseki and Mori Ogai, the greatest figures among the early modern novelists, and will also deal with several leading authors of the post-war period including Mishima Yukio and Abe Kobo. Readings will be in Japanese. Tests, papers and discussions will be in English. Prerequisites: AML 125, 126 or equivalent; permission of instructor required.

AML 191. Independent Study (2-4) Ordinarily limited to majors in their senior year.

AML 193. Special Topics (4) Prerequisite: four semesters of college Japanese or equivalent.

Portuguese

AML 124. Intensive Portuguese (4) The principal elements of grammar; intermediate level reading. Prerequisite: the equivalent of two years of college Spanish or special permission.

AML 126. Reading and Discussion on Luso-Brazilian Culture (4) Major or exclusive emphasis on Brazilian literature. Prerequisite: AML 124 or equivalent.

Russian

AML 11a. First Year Russian, First Semester (4) Beginning training in the basic language skills of understanding, speaking, reading, and writing at the first semester level. Cultural approach. Laboratory.

AML 11b. First Year Russian, Second Semester (4) Training in the basic language skills of understanding, speaking, reading, and writing at the second semester level. Cultural approach. Laboratory. Prerequisite: first semester Russian, equivalent or permission of instructor.

AML 23. Intermediate Russian, Third Semester (4) Continued language training at the third semester level. Advanced grammar. Readings and conversation in Russian. Laboratory. Prerequisite: second semester Russian, equivalent or permission of instructor.

AML 25. Intermediate Russian, Fourth Semester (4) Rapid review of Russian grammar as a functioning system. Readings and conversation in Russian. Prerequisite: third semester Russian, equivalent or permission of instructor.

AML 73. Russian Culture and Civilization (4) A survey of major cultural and artistic

developments in Russia from the founding of the Kievan state to the present. Readings, lectures, and discussions on Russian literature, art, architecture, music, and religion, as well as on daily life in the Soviet Union. Extensive use of audio-visual aids. Taught in English.

AML 191. Independent Study (2-4) May be used for advanced work in Russian reading, composition, and conversation, or for work on other topics.

AML 193. Special Topics (4)

Spanish

AML 11a. First Year Spanish, First Semester (4) Beginning training in the basic language skills of understanding, speaking, reading and writing at the first semester level. Communicative approach. Laboratory. Students with previous experience in Spanish will be initially placed in classes in accordance with their linguistic proficiency. Placement is subject to continuing reevaluation.

AML 11b. First Year Spanish, Second Semester (4) Training in the basic language skills of understanding, speaking, reading and writing at the second semester level. Communicative approach. Laboratory. Placement is subject to continuing reevaluation. Prerequisite: first semester Spanish, equivalent or permission of instructor.

AML 23. Intermediate Spanish, Third Semester (4) Rapid review of Spanish grammar as a functioning system. Readings and conversations in Spanish civilization, daily life and literature. Prerequisite: second semester Spanish, equivalent or permission of instructor.

AML 25. Intermediate Spanish, Fourth Semester (4) Readings and discussion in Spanish on a theme or related group of themes. Continued language training at the advanced intermediate level. Prerequisite: third semester Spanish, equivalent or permission of instructor.

AML 11am, 11bm, 23m, 25m. Spanish Proficiency Maintenance Levels I, II, III and IV (1 each) Directed study designed to maintain language level for those students who interrupt the normal sequence of their language studies after completing 11a, 11b, 23, 25 or 29. Requires two ½-hour lab sessions weekly and/or written workbook assignments. Pass/No Credit only. 11am is taught in the fall only. Only one of these courses may be repeated; no more than two units may be granted in this series. May not be taken concurrently with another course in the same language.

AML 27. Conversación (2) May be repeated once for credit. An advanced intermediate (fourth) semester level course to develop the social skills in an hispanic context. Emphasis is directed to the practical interpersonal skills important to every day living as well as those cultural manifestations inherent in speaking Spanish among native speakers. Pass/No Credit only. Prerequisite: AML 23 or permission of instructor.

AML 29. Expresión Oral y Escrita (4) Intensive grammar review and vocabulary building

and their application to conversation and composition. A general intermediate level course designed to be taken immediately before or after Spanish AML 25.

AML 93. Special Topics (4)

AML 101a. Historia de la Literatura Española Hasta 1800 (3) A study of the development of literature in Spain through works which are representative of the Early and Late Middle Ages, the Renaissance, the Baroque and Neoclassic periods. National and international political, social and economic influences on these periods form a necessary background for understanding these literary manifestations of hispanic culture. Prerequisite: AML 25, 29 or permission of instructor.

AML 101b. Historia de la Literatura Española Desde 1800 (3) A study of the development of Peninsular Spanish Literature through representative works of Spanish romanticism, novel of manners (costumbrismo), realism, naturalism, Generation of '98 and contemporary period. The effects of national and international political, social, scientific and economic events form a necessary framework for understanding these literary manifestations of Spanish culture. Prerequisite: AML 25, 29 or permission of instructor.

AML 103. Literatura Hispanoamericana Hasta el Siglo XX (3) A broad view of Hispanic American cultural and social developments as reflected in the literature from colonization and discovery through the political writings of independence and the latter nineteenth century. Prerequisite: AML 25, 29 or equivalent.

AML 105. Literatura Hispanoamericana: del Siglo XX (4) An overview of the main literary trends in Hispanic American literature of the 20th century and an analytical study of works of representative contemporary writers. Prerequisites: AML 25, 29 or equivalent; permission of instructor.

AML 107. Panorama de la Civilización Hispanica (3) A systematic survey of Spanish and Hispanic American civilization including major national and regional historic political, philosophic, economic and cultural developments and their impact on Hispanic life. Prerequisite: AML 25, 29 or permission of instructor.

The following courses presume cultural and linguistic background equal to the successful completion of at least one of the following: 101a, 101b, 103 or 105.

AML 108. Traducción y Composición (3) Brief outline of basic written translation and composition techniques. Translation exercises and translation-composition assignments from English into Spanish. Special attention will be given to vocabulary and sentence structure. The purpose of this course is to train the student to interpret content and express it in the appropriate written form.

AML 111. Gramática Avanzada (4) A reinterpretation of Spanish grammar in the light of

contemporary linguistic theory, including composition and analytical grammatical exercises.

AML 122/222. Siglo de Oro (3) A study of the work of the most representative Spanish writers of the 17th century. The preceding Renaissance literature will be outlined as an introduction to the study of literary genres such as poetry, drama and novel. The emphasis of the course, however, will be placed on the theatre of Lope de Vega and the novel of Miguel Cervantes.

AML 135. Español Comercial (3) A course designed to develop oral and written communication ability in commercial Spanish. Emphasis is given to commercial correspondence, commercial practices, and not least, the vocabulary, phraseology, and style associated with such activities. Preparation of daily assignments by computer is required.

AML 148/248. Autores Sociopolíticos de Hispanoamérica (3) A broad survey of the principal writers and the principal intellectual movements in Hispanic America beginning with Bolívar and extending to the present day. Attention is given exclusively to the essay.

AML 152/252. Literatura Española del Siglo XIX (3) An overview of the primary literary movements of the 19th century and an in-depth study of representative works of the most important authors. The Romantic theatre, the Realist novel and the writings of the Generation of '98 are some of the areas of special interest.

AML 154/254. Literatura Española del Siglo XX (3) An overview of the novel and theatre of twentieth century Spain with an in-depth study of the landmark works of the most important authors.

AML 191/291. Independent Study (2-4)

AML 193/293. Special Topics (3)

AML 299. Thesis (2 or 4)

Philosophy

Professors: Browne, Heffernan (Chair), Hewitt, Orpinela, Reinelt

All human activities embody assumptions and principles that justify and govern them. Philosophers raise critical questions about these assumptions and principles. Some philosophers also engage in the construction of comprehensive systems which explain how all human activities fit together in a unified way. The study of philosophy develops students' abilities to think and to express their thoughts orally and in writing.

The Department of Philosophy offers courses of different kinds. Introductory courses deal with a broad range of issues in a general way. Historical courses survey the major periods in the history of philosophy. Specialized courses focus on activities such as art, politics or religion, and help students to understand these special activities. Systematic courses deal with problems that arise in relation to all human activities, such as the nature of reality, the ex-

perience of value and the activity of knowing.

The departmental offerings are grouped as follows:

A. Introductory Courses — Introduction to Philosophy; Philosophy of Human Existence.

B. Formal Reasoning Course — Introduction to Logic.

C. Historical Courses — History of Ancient and Medieval Philosophy; History of Modern Philosophy.

D. Specialized Courses — Dimensions of Freedom; Environmental Ethics; Existentialism; Moral Problems; Philosophy of Law; Philosophy of Religion; Political Philosophy; Comparative Philosophy; Special Topics.

E. Systematic Courses — Fundamentals of Ethics; Metaphysics; Theory of Knowledge.

Students seeking a Bachelor of Arts degree in philosophy must complete at least nine courses selected in consultation with their departmental adviser. Those nine courses must include one introductory course, one course in formal reasoning, two historical courses, three specialized courses and two systematic courses.

A Bachelor of Arts degree in philosophy provides a thorough grounding in skills applicable to a wide variety of occupations. Persons planning to attend graduate school or professional school in other academic areas frequently find philosophy a profitable second major. Philosophy helps the individual to place his/her professional life in a broader context while developing the skills of critical analysis. Persons preparing for law school or seminary should give this degree special attention because the subject matter is directly related to these professions. Students planning to attend graduate school in philosophy should declare a philosophy major as early as possible in their undergraduate careers so that a program which provides an intensive preprofessional and interdisciplinary education can be planned with assistance of a departmental adviser.

Students who desire to elect a minor in philosophy must successfully complete five courses in the department for a total of 20 units. The courses: APH 53-History of Ancient and Medieval Philosophy and APH 55-History of Modern Philosophy are required. In addition, students must complete one of the following two courses: APH 180 Metaphysics or APH 182-Theory of Knowledge. Any two other Philosophy courses may be chosen in consultation with the departmental adviser.

Course Offerings

APH 11. Introduction to Philosophy (4) An overview of issues addressed by philosophers and the problems that recur in philosophical speculation in the Western world.

APH 21. Moral Problems (4) Through an examination of the positions and arguments involved in controversial moral problems, this course will introduce the student to philosophy and philosophical methods. It will also emphasize the techniques of argumentation, critical thinking and written and oral expression.

APH 23. Philosophy of Human Existence (4)

An assessment of the attempt of human beings to understand themselves and their world.

APH 27. Fundamentals of Ethics (4) An inquiry into the assumptions, arguments and implications of moral judgments and value systems.

APH 35. Environmental Ethics (4) An investigation of various environmental problems and the ethical attitudes and principles required to address them properly.

APH 37. Introduction to Logic (4) An introduction to the basic techniques of formal, especially symbolic, logic as a tool used in the analysis of ordinary language and arguments.

APH 39. Dimensions of Freedom (4) Examination of arguments for and against freedom of the will and consideration of the meaning of being free in relation to some dimensions of human life, e.g., our relations to nature, society and God.

APH 53. History of Ancient and Medieval Philosophy (4) An overview of the philosophical patterns of thought underlying the Western intellectual tradition from Thales to Occam including Plato, Aristotle, Augustine and Aquinas.

APH 55. History of Modern Philosophy (4) An overview of the philosophical patterns of thought underlying the Western intellectual tradition from Descartes to Wittgenstein.

APH 93. Special Topics (4)

APH 102. Existentialism (4) Consideration of the analysis of human existence in existential phenomenology and its development into a psychological theory.

APH 106. Philosophy of Law (4) An analysis of the nature of law, legal reasoning, legal ethics and the roles of legislators, lawyers and judges in the pursuit of justice.

APH 122. Comparative Philosophy (4) An introduction to philosophy through the works of great thinkers from three of the world's major cultures — China, Greece and Islam — studied in a comparative format and centered on questions which have faced human beings in every age and civilization.

APH 124. Philosophy of Religion (4) A discussion of problems related to the question of the existence and nature of God and the nature of religious meaning and truth.

APH 135. Political Philosophy (4) An evaluation of bases of political power, forms of government and legal and judiciary systems.

APH 180. Metaphysics (4) A study of basic problems concerning the nature of reality as they emerge in the writings of key figures in the history of philosophy.

APH 182. Theory of Knowledge (4) A study of the major issues of the scope and limits of human knowledge as they emerge in the writings of key figures in the history of philosophy.

APH 191. Independent Study (2-4) Permission of the instructor required.

APH 193. Special Topics (4)

Physics

Professors: Lark, Perry (Chair), A. Rodriguez, Wulfman

Associate Professor: Granik

Assistant Professor: Alward

All matter obeys a few general but precise laws. The sudden realization of this in the seventeenth century revolutionized men's minds, society and environment.

The faculty and laboratories of the Physics Department exist to help students understand these natural laws — and their limitations — well enough to see how they apply to the subject of particular interest to each student.

Through its degree programs the department helps students prepare themselves to discover new knowledge and principles and to contribute to the solution of problems of modern physics and related disciplines.

The Bachelor of Science degree program in physics prepares students for careers in physics and the allied sciences. Upon its completion students usually proceed to graduate work or enter directly into positions in industry or secondary education. The program consists of eleven courses in physics: APS 53, 55-Principles of Physics (two semesters), APS 101-Electricity and Magnetism, APS 102-Electrodynamics, APS 111-Atomic Physics, APS 151-Advanced Physics Laboratory, APS 181-Theoretical Mechanics, APS 183-Theoretical Physics, APS 197-Undergraduate Research (4 units), one course selected from APS 140-Nuclear Physics, APS 170-Solid State Physics or APS 161-Thermal Physics, and one other physics elective. Problem solving using the computer is integrated into the program.

Students also complete the following courses in other departments: AMA 57-Ordinary Differential Equations I, ACH 25, 27-Chemistry (two semesters) and one course in electronics in the School of Engineering. In addition, students can select other courses offered in the department as electives.

Students enrolled in the Bachelor of Science program are encouraged to work in scientific laboratories during summers. The department helps them in selecting the place and area of interest.

The Bachelor of Arts degree in physics is appropriate for students planning to teach physics or an allied science in the high school. Students complete six courses in physics, including the following: APS 53, 55-Principles of Physics (two semesters), APS 111-Atomic Physics, APS 151-Advanced Physics Laboratory, one course selected from APS 140-Nuclear Physics, APS 170-Solid State Physics or APS 161-Thermal Physics, and one other physics elective. Students also take AMA 55-Calculus III. Students working toward the Single Subject teaching credential in physical sciences with emphasis in physics complete these courses for the B.A. in physics in addition to the basic core.

The Department of Physics and the Depart-

ment of Geology and Geography offer an interdepartmental program in solid earth geophysics leading to the Bachelor of Science degree. This major prepares students for graduate studies in geophysics or for a career in exploration geophysics. It consists of six courses in physics, including the following: APS 53, 55-Principles of Physics (two semesters), APS 101-Electricity and Magnetism, APS 111-Atomic Physics, APS 161-Thermal Physics and APS 181-Theoretical Mechanics. The candidate must complete five courses in geology* and the following courses in other departments and schools: AMA 55-Calculus III, AMA 57-Ordinary Differential Equations, AMA 37-Probability and Statistics, ACH 25, 27-General Chemistry (two semesters), GCE 130-Fluid Mechanics I and one semester of computer programming.

The Department of Mathematics and the Department of Physics cooperate to offer an interdisciplinary major in applied mathematics-physics leading to a Bachelor of Science degree. A prime objective of the program is to teach students how to formulate mathematical models of scientific and technological problems and how to develop analytic and numerical methods for their solution. Problem solving using the computer is integrated into the program. The program aims to prepare the student either for direct entry into a career or for entry into a variety of graduate programs.

The major consists of fifteen courses, eight in mathematics and seven in physics. The major courses in mathematics include: AMA 51, 53, 55-Calculus I, II, III, AMA 57-Ordinary Differential Equations, AMA 110-Numerical Analysis, AMA 140-Linear Algebra, AMA 151-Vector Analysis and AMA 153-Mathematical Methods in the Physical Sciences. The major courses in physics include: APS 53, 55-Principles of Physics (2 semesters), APS 101-Electricity and Magnetism, APS 111-Atomic Physics, APS 181-Theoretical Mechanics, and APS 183-Theoretical Physics or a Physics elective, plus one course from APS 161-Thermal Physics, APS 204-Statistical Mechanics or APS 211-Quantum Mechanics. Recommended courses include AMA 155-Introduction to Real Analysis and AMA 143-Abstract Algebra from mathematics. Only courses passed with a grade of "C—" or better meet program requirements. The same grade requirement is applied in evaluating specified prerequisite courses.

In consultation with chairpersons of other science departments and the chairperson of the Department of Physics, students may develop a variety of other joint majors.

The Bachelor of Science in Engineering Physics is offered in cooperation with the School of Engineering. Students in the program are subject to the requirements of the School of Engineering, in which the program is based. The program takes five years to complete and requires participation in the Cooperative Education Program. Interested students should contact the Engineering-Physics Adviser in the School of Engineering. The minimum course

requirements are as follows: AMA 51, 53, 55-Calculus I, II, III, AMA 57-Ordinary Differential Equations, AMA 151-Vector Analysis, ACH 25- General Chemistry, APS 53, 55-Principles of Physics (two semesters), APS 101-Electricity and Magnetism, APS 102-Electrodynamics, APS 111-Atomic Physics, APS 170-Solid State Physics, APS 161-Thermal Physics, APS 181-Theoretical Mechanics, general education courses (minimum 3 courses each category, 18 total units; courses must be approved for engineers), 2 of 3 in IA, IB, or IC; 2 of 3 in IIA, IIB, or IIC; 2 depth courses, AEN 173-Technical Writing, GGE 5-Introduction to Engineering, GGE 19-Computer Programming, GGE 20-Mechanics I, GGE 79-Electrical Science, GGE 120-Mechanics II, GCE 123-Materials Science, GCE 130-Fluid Mechanics, GEE 121-Systems I, GEE 131-Electronic Circuits, GEE 171-Fundamentals of Digital Systems, GEE 174-Design of Digital Systems, GEE 195, 196-Senior Seminar Project I, II, and 3 electives selected in consultation with the Engineering Physics adviser.

The above majors are described in the cross-disciplinary majors section of the program listings.

*See description in Department of Geology and Geography.

Course Offerings

APS 17. Concepts of Physics (4) This course is a descriptive, general education course for students who have not had high school physics. Topics include motion, heat, energy, light, sound and other wave phenomena, electricity and magnetism, and atomic structure. Practical applications are emphasized. The course includes laboratory work. Only elementary algebraic mathematical skills are needed.

APS 23, 25. General Physics (5, 5) A one-year introduction for students who plan no further study in physics. Mechanics, heat, sound, electricity and magnetism, optics, atomic and nuclear physics. The course includes laboratory work. Prerequisite: AMA 41 or equivalent.

APS 39. Physics of Music (4) A liberal arts lab-science course designed to enhance students' enjoyment and appreciation of music by developing an understanding of the basic physics which is involved. Major topics include: the physics of motion, vibration, waves, and sound; some aspects of hearing, harmony, and musical scales; the physical behavior of the various families of musical instruments; electronic sound systems; architectural acoustics. No prerequisites. (Some experience with a musical instrument is helpful, as is high school math.)

APS 41. Astronomy (4) A broad substantive study of modern astronomy, with emphasis on the underlying physical principles. Concepts from high school level physics, chemistry and mathematics are used where appropriate, but these subjects are not rigid prerequisites. The course includes laboratory work.

APS 53, 55. Principles of Physics (5, 5) A two-

semester calculus-based sequence for those planning further study in pure or applied physical science. First semester: kinematics and mechanics. Prerequisites: AMA 51 and high school physics or APS 23. Second semester: electricity and magnetism. The course includes laboratory work. Prerequisites: AMA 53 and APS 53.

APS 101. Electricity and Magnetism (4) Theory of electrostatic and electromagnetic fields and their interaction with matter. Practical applications. Development of Maxwell's equations. Prerequisites: APS 55, AMA 55. Corequisite: AMA 151.

APS 102. Electrodynamics (4) Maxwell's equations. Propagation of electromagnetic radiation. Transmission lines, wave guides, antennas. Applications. Prerequisites: APS 101, AMA 151.

APS 105. Optics (4) An in-depth study of optical phenomena. Ray propagation, refraction. Wave motion, interference, diffraction. Lasers, holography, fiber optics. Laboratory experiments are an integral part of the course. Prerequisite: APS 55.

APS 111. Atomic Physics (4) Special relativity; quantization; wave/particle duality and the uncertainty principle; solution and interpretation of simple Schrodinger equations; atomic structure; introduction to nuclear and elementary particle physics. Laboratory. Prerequisite: APS 55. Corequisite: AMA 57.

APS 140. Nuclear Physics (4) Nuclear structure and spectroscopy, radioactive decay, nuclear reactions, nuclear energy; experimental techniques; elementary particles. Laboratory. Prerequisite: APS 111.

APS 151/251. Advanced Physics Laboratory (4) Experimental studies in modern physics, especially ones which require the design, construction and use of special apparatus. Prerequisite for APS 151: APS 111.

APS 161. Thermal Physics (4) The general laws of thermodynamics with applications to heat engines and thermal properties of solids. Introductory statistical mechanics with applications to molecules, solids, thermoelectric phenomena and radiation. Prerequisites: APS 55, AMA 57.

APS 170. Solid State Physics (4) Crystal structure and the quantum-mechanical basis for the electronic structure of atoms, molecules and solids. A thorough study of the properties of semiconductors, including an extensive investigation of the physics of a number of crystalline and amorphous solid state devices, including junctions, transistors, charge-coupled devices, photovoltaic devices, microelectronic circuits, lasers and optical fibers. The course includes laboratory work. Prerequisite: APS 111.

APS 181. Theoretical Mechanics (4) Newtonian, Lagrangian and Hamiltonian equations of motion. D'Alembert's principle and variational principles. Symmetry and the conservation laws. Prerequisites: APS 55, AMA 57 or equivalent and a knowledge of computer programming; junior standing.

APS 183. Theoretical Physics (4) Introduction to Lie groups and their representations. Partial differential equations and boundary value problems. The special functions of mathematical physics and their addition theorems. Topics from the theory of the translation, rotation, Euclidean and Lorentz groups. Prerequisite: AMA 57.

APS 191. Independent Study (2-4)

APS 193. Special Topics (4)

APS 197. Undergraduate Research (2-4)

APS 204. Statistical Mechanics (4) Boltzman, Fermi and Bose statistics applied to quantized and to classical ensembles at equilibrium.

APS 211, 213. Quantum Mechanics (4, 4) First semester: the Schrodinger equation, the Pauli principle, and their interpretation; the correspondence principle and theory of measurements; perturbation and variation methods; applications to a variety of problems. Second semester: Matrix mechanics and general transformation theory; symmetry properties, angular momentum algebra and second quantization; applications to many-body problems.

APS 291. Independent Study (2-4)

APS 297. Graduate Research (2-4)

APS 299. Thesis (2 or 4)

Political Science

Professors: Benedetti, Briscoe, Caldwell (Chair), Fennell, Hewitt, Pippin, C. Smith
Associate Professor: Hatch
Assistant Professor: Klunk

The Department of Political Science is primarily concerned with the function and role of government and politics in modern society. In an attempt to contribute to an understanding of the purposes, organization and operation of political institutions, domestic and international, the Department offers an introduction to the American system of government and to other political systems in the world. For those who become majors and for those who take additional work in political science, courses are offered that give special attention to American government, public law, political theory and methodology, comparative government and politics, and international relations.

Students seeking a Bachelor of Arts degree in political science are required to take four (4) lower division courses, as follows:

APO 11 Introduction to Political Science

APO 21 Introduction to Political Theory

APO 41 U.S. National Government

AHI 53 History of Western Civilization II
or

AHI 63 U.S. History II

and seven (7) upper division courses distributed among four (4) of the following subdivisions:

I. American Government and Politics

II. Public Law

III. Political Theory and Methodology

IV. Comparative Government and Politics

V. International Relations

The B.A. in Political Economy requires 12 courses:

Economics (6 courses)

AEC 53-Intro. Microeconomics

AEC 55-Intro. Macroeconomics (AEC 51 may be substituted with the advisor's permission)

AEC 111-History of Econ. Thought

AEC 171-Political Economy

Plus two upper division electives to be chosen from AEC 118, 121, 123, 125, 127, 131, 151, 154, and 180.

Political Science (6 courses)

APO 11-Intro. Political Science

APO 41-U.S. Natl. Government

APO 132-Recent and Contemporary Theory

APO 140-Politics and Markets

Plus two upper division electives to be chosen from APO 141, 142, 144, 148, 150, 152, and 164.

See the section on cross-disciplinary majors for the description of this major.

Political Science majors are encouraged to take coursework in the allied fields of history, sociology, economics and public administration.

The Department of Political Science also offers a major in pre-law. See the section on cross-disciplinary majors for the description of this major. See also courses cross-listed under the offerings of the School of International Studies.

The Department also offers a minor in Political Science. Political Science minors take six courses for a minimum of 21 units, 10 of which must be taken at UOP. Students taking a minor in Political Science must complete APO 11-Introduction to Political Science; APO 21-Introduction to Political Theory; APO 41-U.S. National Government; or their approved equivalents; and three additional Political Science courses in two subdivisions of department offerings, two of which must be at the upper divisional level.

The Political Science minor cannot be taken by COP students who are majoring in Political Economy, Pre-Law or International Relations. Likewise, the minor cannot be taken by SIS students who are majoring in International Relations and International Affairs and Commerce.

Course Offerings

Lower Division

APO 11. Introduction to Political Science (4) An examination of the basic functions performed by a political system, comparison to the different organizations and procedures societies have developed for handling these functions, and analysis of recurring patterns of political behavior from the level of the individual to that of the nation-state.

APO 21. Introduction to Political Theory (4) Analysis of contemporary ideas and theories about the nature of politics and government, what forms of government are most desirable and how politics is best studied, with emphasis on democratic theory and alternatives.

APO 31. American Democracy (3) An introduction to American national government. Not open to students who have completed APO 41 or equivalent. This course satisfies the state requirement on the U.S. Constitution. It is designed for non-social science majors.

APO 41. U.S. National Government (4) An analysis of the constitutional structure of the federal government and its functioning, including the political processes involved. Not open to students who have completed APO 31 or equivalent. This course satisfies the state requirement on the U.S. Constitution. It is designed especially for social science majors.

APO 51. International Politics (4) An introduction to the major issues of international politics and the analytical approaches applied to their study. Included among the topics are: the causes of war, intervention, pursuit of economic prosperity and managing global resources. Prerequisite: APO 11 or permission of instructor.

APO 61. Model United Nations I (3) Background briefing and training on the practical functioning of the United Nations of the Far West. Pass/No credit only.

APO 87. Public Affairs Internship (2-4) Work experience in a public agency involving legal, administrative or human relations skills.

Upper Division

APO 102. State and Local Government (4) A structural-functional analysis of American state and local governments. Emphasis on urbanization and problems of municipal governments.

APO 104. Urban Government and Administration (4) The structure and operation of urban units of government with emphasis on intergovernmental relations in the United States. Problems of finance, adequacy of services and planning for future growth are included.

APO 106. California Government and Politics (4) An overview of California governmental structures and selected political, economic and ecological conflicts, both historic and contemporary.

APO 108. The Legislative Process (4) Analysis of the legislative process, including powers and functions of Congress, participants in the legislative process, procedures, reorganization and reform.

APO 110. The American Presidency (4) Study of the Constitutional foundations of the presidency, structure of the office, executive powers and functions and the presidency as compared with other chief executives.

APO 112. Political Parties and Voting Behavior (4) Analysis of political party systems, the electorate and electoral process, role and theory of political parties and developing alternatives thereto.

APO 114. Interest Group Politics (4) Analysis of special interest groups (factions), their membership, leadership, goals and tactics in gaining access to authoritative decision makers and their influence in the policy making process.

APO 116. Mass Media and Political Participation (4) A study of the relationship between the press and government, especially emphasizing news and public affairs functions of the mass media.

APO 120. The American Legal System (4) The role, nature and sources of law, the courts and the adversary system; schools of jurisprudence and emphasis on contemporary problems such as reform, the jury system, selection of judges and selected problems.

APO 122. Constitutional Law (4) A study of the development of the American Constitutional System through court cases. Law school techniques and methods are stressed.

APO 124. American Civil Liberties (4) The analysis of the rights and guarantees contained in the Bill of Rights and other constitutional and statutory provisions.

APO 130. Western Political Theory (4) The nature of political thought from Jewish antiquity to the nineteenth century.

APO 132. Recent and Contemporary Political Theory (4) Nineteenth and 20th century political theory in the western developed world.

APO 133. Quantitative Methods in the Social Sciences (4) Quantitative methods and techniques most commonly used in political science and sociology; the use of computers in social research.

APO 140. Politics and Markets (4) A study of the role of the state in capitalist and developing societies.

APO 141. Comparative Politics of Western Europe (4) Comparative analysis of the political and economic forces that have shaped the advanced industrial states of Western Europe. Issues considered are: 1) state-building, nation-building and industrialization; 2) political and economic reconstruction of France, Great Britain and West Germany; 3) contemporary problems facing the advanced capitalist states of Western Europe. Prerequisite: APO 11 or permission of instructor.

APO 142. Comparative Communist Systems (4) An inquiry into the structure and workings of China, the U.S.S.R., Yugoslavia and North Korea, considering the similarities and differences among these systems toward an understanding of what they have in common that sets them off from non-Marxist systems. Prerequisite: APO 11 or 41.

APO 144. Soviet and East European Politics (4) Comparative analysis of the political systems and dynamics of the U.S.S.R. and the Eastern European countries. Prerequisite: APO 11 or permission of instructor.

APO 146. Latin American Politics (4) A study of the political processes and governmental structures of Latin American states, focusing on Mexico and Brazil, as well as certain other South and Central American countries. Selective attention will be given to the expanding regional and international relations of Latin America.

APO 148. Politics of the Middle East and North Africa (4) Comparative study of contemporary politics in the Middle East, emphasis on the role of the state.

sizing the problems of development, and the background, issues and political forces involved in the Arab-Israeli conflict.

APO 150. Politics in Africa (4) A general political introduction to modern sub-Saharan Africa, beginning with geography, history and culture. Using selected case studies in East, West and Southern Africa, an exploration of problems of development, nation-building and modernization.

APO 152. Politics of Asia (4) A general political introduction to modern East, South-East and South Asia including a survey of geography, history and culture. Using selected case studies in all three areas, an exploration of problems of development and modernization, regional interaction and the relation of Asia to the West.

APO 160. Theories of International Politics (4) Intensive study of the principal analytical and normative theories of international politics and behavior. Prerequisite: APO 51 or permission of instructor.

APO 161. Model United Nations II (3) An advanced leadership experience in the MUN program. Prerequisite: APO 61 Pass/No credit only.

APO 162. International Organization (4) Examination of the role of international organization in the contemporary global political system. Major theories and approaches in the field will be studied in conjunction with topics such as interstate conflict and peacekeeping, arms control and nonproliferation, human rights, economic relations between developed and developing countries, food and nutrition, and management of the global commons. Prerequisite: APO 51 or permission of instructor.

APO 164. International Political Economy (4) An examination of the major analytical and substantive issues in the field of international political economy, exploring the political and economic problems generated by growing interdependence among advanced industrial states and the conflicts between industrialized and developing countries over the structure and functioning of the postwar international economic order. Prerequisite: AEC 55 or permission of instructor.

APO 166. International Conflict and Conflict Management (4) A study of the sources and nature of conflict and methods of conflict management in the international arena, directed especially to identifying and understanding the kinds and functions of non-violent conflict management now in use, including international law, international regimes, negotiation and arbitration. Prerequisite: APO 51 or permission of instructor.

APO 168. Comparative Foreign Policy (4) A comparative study of the formulation and execution of foreign policy in a variety of political systems, focusing especially on the U.S.S.R., China, India, Britain, Japan, France, West Germany and the United States. Prior completion of a basic course in political science is recommended.

APO 170. American Foreign Policy (4) An

examination of the major developments in American foreign policy and various analytical approaches to their study. Among the issues considered: isolationism; manifest destiny; the Cold War and containment; Vietnam and Central America; *detente* and arms control; foreign economic policy; and human rights. Prerequisite: APO 11 and 41.

APO 172. Inter-American Relations (4) Regional principles, laws, treaties and agreements; foreign policy formulation; hemispheric organizations; and exploration and analysis of contemporary trends in Latin American international relations.

APO 191. Independent Study (2-4) Open only to political science majors with a "B" average in their work in political science.

APO 193. Special Topics (4)

Psychology

Professors: Beauchamp (Chair), Gipson, Hannon, Howells, Katz, Matheson, Orpinela
Associate Professor: Cohen
Adjunct Professors: Davis, Dinwiddie, Ingraham, Keating, Lancaster, O'Brien, Ruggles, Stoner

The programs of study offered by the Psychology Department are designed to help the student understand the behavior of human beings and other organisms. Whether it's a high school student trying to solve mathematics problems or a puppy learning to retrieve, behavior is a complicated subject. As a result, there are many ways to understand it. Behavioral variety is reflected in both the course offerings of our department and in the interests of the faculty. Students may study child-abusing parents, white rats that drink alcohol, children learning moral concepts, high school students who are in love, anxious adults, and people who have disorders such as hypertension and chronic pain, all in one academic year.

This diversity of interests and activities is tied together by the faculty's commitment to scientific inquiry. Throughout their coursework, students learn how to answer questions about behavior through empirical research and theoretical analysis.

Several objectives can be met by studying psychology at the University of the Pacific. They include:

1. Increased Understanding of Your Own and Others' Behavior

Students interested in a liberal arts education may satisfy a desire for a better understanding of themselves and others through a major in psychology. The diversity of course, fieldwork and internship offerings provides the student with opportunities to study and have first-hand experience with a wide range of human behaviors and problems. Beyond personal development, the knowledge and skills acquired from this approach to the major have application to a wide variety of activities that students may find themselves engaged in following graduation,

including business, sports and the arts.

2. Career Preparation

The department is unique in offering programs of study that provide the psychology major with psychology-related employment opportunities directly upon receiving the Bachelor's degree. This involves specialization in a) applied behavior analysis, which provides the student with skills to work with a variety of disabled populations and interpersonal skill problems, or b) applications in business, which provides the student, in cooperation with the School of Business and Public Administration, with skills in the use of psychological approaches such as behavior analysis in the personnel, training and performance management areas of business and government.

3. Graduate and Professional School Preparation

Students interested in entering Master's and Doctoral programs in psychology or professional schools such as law and medicine have the opportunity to pursue an intensive series of course, practicum and research experiences that can significantly improve their chances of admission and later achievement. The program provides the student with research and hands-on experience as early as the freshman year, so that by the time of graduation a student may have authored or co-authored research papers and worked with a wide range of applied problems.

Whatever objectives students may select, they will find that the Department provides much more than traditional in-classroom instruction. There are opportunities for direct work with children and adults in a number of community agencies, institutions and businesses. Research experience is encouraged through one or more of the several ongoing research projects, and many courses have laboratory and fieldwork experiences associated with them. As a result, the student can become a part of the continuing work of psychology.

Requirements for the Major

All students majoring in psychology must complete the following four courses:

AMA 35-Elementary Statistical Inference

APY 105-Experimental Psychology

APY 53-Behavior Change I

APY 125-History and Systems of Psychology
Plus one laboratory research course to be chosen from the following:

APY 107-Psychology of Learning

APY 109-Physiological Psychology

APY 173-Biofeedback and Self-Control

Plus one field research/applied course to be chosen from the following:

APY 129-Developmental Psychology

APY 153-Behavior Change II

APY 169-Social Psychology

Plus three other courses counting toward the major and selected according to the interests of the student in consultation with an adviser in the department. Psychology majors are also strongly encouraged to take one course each in Independent Research (APY 197) and Internship or Practicum (APY 87, 187, 89 or 189).

In total, the psychology major must take at least nine courses (36 units) in psychology. More psychology courses may be taken, up to a total of 60 units (including transferred courses), if the student so desires.

Programs of Study

1. Increased Understanding of Your Own and Others' Behavior

In addition to the six courses specified for the major, three other psychology courses are selected according to the interests of the student and in consultation with an adviser in the department. The liberal arts student may concentrate in such subfields of psychology as experimental, developmental, personality and social psychology.

2a. Career Preparation — Applied Behavior Analysis

Students selecting the applied behavior analysis program are required to complete the courses specified for the major, plus the following: APY 153-Behavior Change II, one semester of APY 159-Behavior Analysis and APY 157-Behavior Management in the Community. The behavior analysis program trains the student in four skill areas: a) academic mastery of the content of behavior analysis; b) learning how to apply behavior modification techniques such as observation, reinforcement and data analysis; c) developing and implementing behavior modification programs; and d) interacting effectively with community and social service agencies.

2b. Career Preparation — Applications in Business

A student interested in the applications of psychology in business settings is required to complete all requirements for a psychology major. In addition, a selection of six courses in business is recommended. The specific courses should be selected in consultation with your adviser. Relevant courses from which to select include the following (see course listings under School of Business and Public Administration for prerequisites required for each course): LBA 31-Principles of Financial Accounting LBA 107-Marketing Management LBA 109-Management and Organizational Behavior LBA 134-Conflict Management LBA 141-Marketing Research LBA 147-Consumer Behavior LBA 170-Human Resources Management LBA 171-Individual Group Behavior LBA 173-Designing Effective Organizations LBA 175-Management of Change

Students should also take Internship (APY 89) or Practicum (APY 87) courses in a business setting. A concentration in applied behavior analysis combined with the business concentration provides the student with an especially strong preparation for business-related employment.

3. Graduate and Professional School Preparation

Students planning to do graduate study in psy-

chology or to use psychology as a basis for advanced professional study would take the following sequence of courses in addition to the major requirements: APY 197-Independent Research, AMA 130-Topics in Applied Statistics and APY 183-Research Design. It is strongly recommended that major courses include a representation of the basic subfields of psychology as well as additional Independent Research (APY 197) and Practicum (APY 87) courses. Options including both psychology and other courses provide the student with coursework as well as research and applied experience appropriate to graduate study in all areas of psychology, as well as professional study in Education, Social Work, Medicine, Law and Dentistry. An advanced Clinical Intern program is open to qualified seniors which provides clinical experience in the Behavioral Medicine Clinic.

Course Offerings

APY 29. **Child Development** (4) An introduction to and an overview of human structural and behavioral change from conception to adolescence. The emphasis is on normal processes and patterns of development, research-based information about these patterns and processes, associated theories of human development which emphasize infant and child behavior and the continuities between child and adult behaviors. Practical application of principles is stressed. Limited field observations of young children are required. No prerequisites. Recommended for freshmen and sophomores. Does not count toward major.

APY 31. **Introduction to Psychology** (4) An introduction to the following areas of psychology: 1) history and systems of psychology; 2) experimental methods in psychology; 3) psychology of learning; 4) verbal learning and memory; 5) child and developmental psychology; 6) motivation; 7) personality; 8) abnormal psychology; 9) perception and sensory psychology; 10) physiological psychology; and 11) behavioral medicine. Open to freshmen. Does not count toward major.

APY 53. **Behavior Change I** (4) An introduction to behavior analysis and therapy. Stresses the application of behavior change principles to oneself and to a variety of problems and populations. Students will be taught to observe and measure behavior and to implement and evaluate behavior change interventions. Three hours per week in training settings are required in addition to class meetings. Supervision of undergraduate students will be provided by the instructor and graduate students. No prerequisites. Required for psychology majors. Limited to psychology majors only.

APY 66. **Sex Roles and Sexuality** (4) An exploration of the effects that female and male sex roles have on our behavior and feelings. The similarities and differences in the behaviors and feelings of men and women will first be studied as they relate to the biology and psychology of normal, deviant and dysfunctional sexual

behavior. The more pervasive effects of sex roles on all aspects of life (e.g., marriage, work, parenting) will then be examined. No prerequisites. Recommended for freshmen. Does not count toward major.

APY 87, 187. **Internship** (2 or 4, 2 or 4) Experiences in a work setting, to be contracted on an individual basis. APY 187 represents advanced internship work involving increased independence and responsibility. Students may register for only one course listed below in any semester and may receive no more than four units of credit for any of these courses. Pass/No Credit grading only.

APY 87a, 187a. **Business and Industrial Internship** Supervised experience in performance management and training in business and industrial settings.

APY 87b, 187b. **Developmental Disabilities Internship** Supervised experience in agencies providing services to the developmentally disabled.

APY 87c, 187c. **Educational/Training Internship** Supervised experience in educational and training institutions and agencies.

APY 87d, 187d. **Human Development and Family Intervention Internship** Supervised experience in family, social welfare, educational or correctional settings concerned with the development of physically disabled young people, socially deviant young people and/or physically and socially normal young people.

APY 87e, 187e. **Mental Disabilities Internship** Supervised experience in agencies providing services to the mentally disabled.

APY 89, 189. **Practicum** (2 or 4, 2 or 4) Non-classroom experiences in activities related to the curriculum under conditions determined by the appropriate faculty member. APY 189 represents advanced practicum work involving increased independence and responsibility. Students may register for only one course listed below in any semester and may receive no more than four units of credit for any of these courses. Pass/No Credit grading only.

APY 89a, 189a. **Applied Psychology Practicum** Students will acquire skills necessary to the application of principles of general psychology to solve personal, organizational and social problems while serving as assistants to faculty and professional psychologists.

APY 89b, 189b. **Clinical Aide Practicum** Students will acquire skills necessary to work with clients in behavior change settings while assigned as assistants to clinical treatment professionals.

APY 89c, 189c. **Laboratory Technology Practicum** Students will acquire skills in the use and design of laboratory instrumentation for psychological research while assigned as assistants to faculty conducting laboratory research. APY 89d, 189d. **Research Assistantship Practicum** Students will acquire skills in the design and implementation of psychological research while serving as assistants to faculty conducting research projects.

APY 89e, 189e. **Teaching of Psychology Practicum** Students will acquire skills in the

development and use of Personalized Systems of Instruction, discussion groups and laboratories while serving as assistants to faculty teaching departmental courses.

APY 105. Experimental Psychology (5) Introduction to research methodology in behavioral sciences. The course covers experimental design, elementary statistics and special research topics, and requires an independent research project. All students learn to use a computer based statistics program. Required for psychology majors, recommended in the sophomore year, but open to freshmen. Prerequisite: AMA 35.

APY 107. Psychology of Learning (4) Explanation and prediction of behavior change in humans and animals in terms of simple learning processes. Emphasis on theoretical interpretation of learning phenomena. Prerequisite: APY 105 or permission of the instructor.

APY 109. Physiological Psychology (4) Study of the relationship between behavior and the structure and functioning of the nervous system. Both theoretical research and clinical applications helpful in understanding human behavior are emphasized in lecture and in laboratory exercises. Prerequisite: APY 105 or permission of the instructor.

APY 110. Psychoactive Drugs and Behavior (4) An intensive study of how drugs affect psychological processes and behavior, covering neuroanatomy, neuron physiology, basic psychopharmacological terminology, major psychotherapeutic drugs and the interaction between drug treatments and various psychotherapeutic and behavior change techniques.

APY 111. Abnormal Psychology (4) Study of the etiology, classification and treatment of abnormal behavior. Open to freshmen.

APY 125. History and Systems of Psychology (4) A survey of the history of the various systems and schools of psychology with emphasis upon the interaction of experimentation, observation (empirical contributions) and speculation (theory building) in the development of modern psychology. Required for psychology majors. Prerequisite: senior standing.

APY 128. Abnormal Child Psychology (4) A study of the theories of abnormal child development and the characteristics and treatment of common childhood disorders. The prevention of childhood adjustment problems is also covered. No prerequisites.

APY 129. Developmental Psychology (4) Comparison of major models and specific theories of the development of behavior. Overview of research methodology including those methods particularly appropriate to the study of developmental phenomena. Major emphasis on current empirical theory and data about child development. Completion of a child research study. Prerequisite: APY 105 or equivalent.

APY 131. Adolescence and Young Adulthood (4) A psychosocial examination of the transition from childhood to adulthood. Topics include: conceptual issues and moral development, sexual and personality changes, role conflicts and problems unique to adolescence.

Material has been selected to be of interest both to majors who plan to work with adolescents and to students who want to better understand their own life cycle phase or their future role as parents of adolescents. Prerequisite: sophomore standing or above.

APY 132. Moral Development (4) This course is designed to demonstrate how a life cycle approach can be applied to the area of moral development. It will cover theories of moral development such as psychoanalytic, social learning, cognitive-developmental and social-evolutionary. The principal focus of the course will be the work of Kohlberg which has generated much of the renewed interest in moral development and has engaged scholars from the other perspectives.

APY 153. Behavior Change II (4) A sequel to Behavior Change I that focuses on contemporary issues of behavioral research and treatment. A major goal of the class is to expand students' horizons regarding the range of applications of behavioral techniques. In addition, students will develop an in-depth knowledge in a specialty area of their choosing. Practicum work culminating in an applied research project is a requirement of the class. Required for applied behavior analysis specialization. Prerequisite: APY 53.

APY 157. Behavior Management in the Community (4) Analysis of community-based treatment facilities, parent training, group interactions, program evaluation, ecological problems and ethics. Fieldwork in community setting required. Handles issues of "getting along" with other disciplines, consulting and ethics. Prerequisite: APY 53. Required for applied behavior analysis specialization.

APY 159/259. Behavior Analysis (4) The use of behavior analysis is examined in relation to a specific topic, which varies each time the course is presented. Students read the current literature on the topic and discuss issues of application, theory and research design. Required for applied behavior analysis specialization. May be repeated for credit three times with three different topics. Specific topics include a) aversive control, b) behavioral medicine, c) marital and family therapy, d) self-management, e) treatment of child behavior disorders, f) cognitive behavior therapy, g) business, engineering and computers. Prerequisite: APY 53.

APY 164. Freudian Psychology (4) A course devoted to the examination and analysis of Freud's major insight and the evolving character of his thought. The major emphasis of the course is the problem of rethinking Freud's generalizations in terms of life cycle human development.

APY 165. Humanistic Psychology (4) This course is addressed to the formation of an adequate theoretical base for the varied themes and perspectives that have come to be labeled "humanistic psychology." Attention is given to the work of Rogers, Maslow, May and Erickson. Particular emphasis is given to the nature of human development within the materials and to the continuities and discontinu-

ities of humanistic psychology with behaviorism (especially Skinner) and psychoanalysis.

APY 166. Psychology of Personality (4) A survey of contemporary personality theories and research. Issues in personality assessment will also be covered. The course is for upper division psychology majors and will be taught as a seminar. Prerequisites: APY 105 and 111.

APY 167. Psychology and the Law (4) An examination of the role of psychology and psychologists in the judicial system. Topics include the selection of jurors, accuracy and impact of eyewitness testimony, biases of investigative and identification methods, insanity and competency to stand trial, hypnosis and lie detection, expert psychological testimony, effects of post-traumatic stress, abuse, and neglect, and predictions of dangerousness. Students will regularly attend actual trials in lieu of discussion periods.

APY 169. Social Psychology (4) A study of the interaction of social and psychological factors (how psychological factors affect group behavior and how social factors affect individual behavior).

APY 171. Interpersonal Behavior (4) A social psychological examination of models of human interaction. Emphasis upon how the theories and research relate to students' own life experiences. Topics include development and termination of relationships, attraction, social exchange, personality, equity, mate selection, self-disclosure, intimacy and social skills training. A previous course in psychology or communication is recommended.

APY 173. Biofeedback and Self-Control (4) An introduction to behavioral medicine, biofeedback, and self-control including the control of EMG (muscle tension), EEG (brain waves), electrodermal response, and skin temperature. Biofeedback is a method for providing persons with immediate information about the state of their bodily physiology by means of visual and auditory displays. Laboratory experience with state-of-the-art computerized biofeedback equipment. Topics covered include the use of biofeedback in behavioral medicine such as the control of migraine headaches, muscle tension and anxiety states, facial pain, bruxism, hypertension, pain and the use of hypnosis and relaxation therapy.

APY 175/275. Clinical Psychophysiology (4) Current trends in clinical psychophysiology, emphasizing applications of biofeedback to behavioral medicine. Students complete: a) 15 hours of supervised training in the use of biofeedback and psychophysiology instrumentation including EMG, EKG, peripheral skin temperature, electrodermal response, respiration, and EEG; b) 10 hours of personal biofeedback training with a certified supervisor; c) minimum of 30 hours of observation in a clinical experience utilizing clinic referrals with psychophysiological disorders; d) co-therapy (with instructor) clinical case studies using appropriate data-based clinical methods. Prerequisites: APY 105 and 173 or permission of instructor.

APY 177. **Psychological Stress** (4) An examination of the social and psychological factors that produce stress in individuals and the patterns of behavior which result. The major current theoretical and research areas are reviewed with an emphasis on cognitive models. Approaches to stress management are briefly reviewed. Students are made aware of how personality, thoughts, life style and other factors affect their ability to cope with stress.

APY 183/283. **Research Design** (4) Design and analysis of research using single subjects and groups. Prerequisites: AMA 35, APY 105 and permission of instructor.

APY 191. **Independent Study** (2-4)

APY 193. **Special Topics** (4)

APY 195. **Seminar** (4)

APY 197. **Independent Research** (2 or 4)

APY 252. **Behavior Change Practicum** (4) An overview of behavior therapy, behavior modification and cognitive social learning techniques for behavioral change and assessment. Interviewing skills, rapport building and ethical-legal factors related to behavioral intervention are also covered. A practicum in an applied setting is required to provide direct training in the above skills.

APY 291. **Independent Graduate Study** (2-4)

APY 293. **Special Topics** (4)

APY 295. **Graduate Seminar in Psychology** (4)

APY 297. **Independent Graduate Research** (2 or 4)

APY 299. **Thesis** (2 or 4)

Religious Studies

Professors: Blaney (Chair), Meredith, Schedler
Visiting Lecturer: R. Shapiro

The Department of Religious Studies emphasizes the role of religion in human experience. Religion has been and is a major factor in the development of culture and institutions, and it is significant to individuals as they probe the ultimate questions of life's meaning and create world views and systems of values. Therefore, the courses in the department seek to introduce students to the sacred literature and the institutions and concepts of the major religious traditions of the world, with particular emphasis on the Judeo-Christian tradition. They also assist students in their own religious search and self-understanding by examining cultural, ethical and psychological issues from religious perspectives. Courses in the Department contribute to the liberal education of any University student. All courses in the Department, most of them without prerequisites, are open to non-majors.

Students elect a program in religious studies for various reasons, the most frequent being 1) for their own enrichment and personal growth; 2) as an undergraduate foundation for professional training for the ministry or other church-related vocation; or 3) because of their

interest in teaching religion either at the elementary, secondary or college-university level.

Courses in the Religious Studies Department are divided into five areas: Biblical Studies; Religious Thought and History; Religion and Society; Religion and Psychology; and Religion and the Arts. A major in religious studies leading to a Bachelor of Arts degree requires 32 units in the department, including the following six courses which are distributed among the several departmental areas:

ARS 23-Key Ideas of the Old Testament

ARS 25-Key Ideas of the New Testament

ARS 30-Nature of the Christian Faith

ARS 143-Social Ethics

ARS 151-Psychology and Religion

ARS 170-Religion and Modern Literature

Students are also required to take one course outside of their own religious tradition from the following courses:

ARS 132-Judaism

ARS 134-World Religions

ARS 136-Japanese Religious Thought

Competency in a foreign language is highly recommended.

The balance of the major's program is expected to show a broad distribution of courses in areas such as history, literature, philosophy, political science, psychology and the natural sciences.

A minor in Religious Studies requires five courses (a minimum of 20 units) in the department. Students will be required to take the following courses:

ARS 134-World Religions

Either ARS 23-Key Ideas of the Old Testament
or ARS 25-Key Ideas of the New Testament

Either ARS 30-Nature of the Christian Faith
or ARS 143-Social Ethics

Two (2) courses from the following:

ARS 70-Religion and Cinema

ARS 136-Japanese Religious Thought

ARS 140-Church and the Modern World

ARS 151-Religion and Psychology

ARS 170-Religion and Modern Literature

Note: No more than four units will be accepted as transfer units, and a major in the Pre-Ministerial program is **not** permitted to minor in Religious Studies.

The Religious Studies Department has a faculty with diverse theological, denominational and religious backgrounds who contribute breadth and depth to its program.

Department offerings are designed to provide valuable and exciting electives for students in every department, regardless of their major. Students often choose religious studies as part of a double major.

A typical course in religious studies includes students from a variety of backgrounds and academic disciplines, thereby affording significant opportunity for inter-disciplinary discussion of religious questions.

Career Options: Students majoring in the department may continue in graduate/professional school training for the ministry or pursue

full-time church-related vocations. They may also teach religion and related subjects at the elementary, secondary or college/university level by pursuing a program leading to a multiple subject teaching credential.

Course Offerings

Biblical Studies

ARS 23. **Key Ideas of the Old Testament** (4)

An examination of the fundamental human questions as developed in the literature of the Old Testament, with an introduction to historical and literary criticism. Questions examined may include the nature of God, the problem of human identity and the problems of right and wrong.

ARS 25. **Key Ideas of the New Testament** (4)

An examination of fundamental questions as developed in the literature of the New Testament, with an introduction to literary, form and redaction criticism.

ARS 27. **Life and Teachings of Jesus** (4) An academic study of the life and teachings of Jesus. The course will first examine the sources for such a study and then proceed to a comprehensive examination of Jesus' life and his teachings.

ARS 196a, 296a. **Seminar in Biblical Literature** (4, 4) An in-depth study of a specific book or concept. May be repeated for credit with different themes. Prerequisite: two Bible courses and permission of the instructor.

Religious Thought and History

ARS 30. **Nature of the Christian Faith** (4) An existential theological analysis of the Christian revelation, with particular reference to problems of personal faith in contemporary society.

ARS 31. **Contemporary American Religions** (4) This course is designed to help the student understand the major contemporary forms of religion in America — Judaism, Roman Catholicism, Eastern Orthodoxy and Protestantism. The course centers on current beliefs and practices, rather than on history. Beliefs, ecclesiastical organization, manner of worship and qualifications for clergy will be examined, along with teachings regarding current problems.

ARS 32. **Religion and American Culture** (4)

An examination of the way in which religion has contributed to the shaping of American political, social and cultural life, and the way in which the American experience has in turn shaped religion.

ARS 33. **Introduction to Religion** (4) This

course will seek to encourage students to discover, analyze and understand religious experience, their own and others. Religious faith will be examined, not as an abstraction but as a vital part of one's life. What it means to be fully human will be discussed in the context of various disciplines of the arts and sciences (e.g., sociology, psychology, literature). Students will be encouraged to examine critically various

perspectives. The focus of the course will not be upon history but rather upon the relevance of religion.

ARS 132/232. **Judaism** (4) A basic introduction to Judaism covering its history, beliefs and customs with an emphasis on understanding the Jews of today. (Supported by grants from the Jewish Chautauqua Society and from Temple Israel.)

ARS 134/234. **World Religions** (4) An examination of fundamental religious questions as developed in major religions of the world. Some attention will be given to historical development and to major personalities, but attention will center on the religious questions as developed in each religious system. Not open to freshmen.

ARS 136/236. **Japanese Religious Thought** (4) A study of Japanese religious experience as revealed in traditional practices (Shinto, Taoist, Confucian, Buddhist, Zen), the explosion of the "new religions" of Japan (in McFarland's phrase — "the rush hour of the gods"), and the limited contribution of Christianity. Special attention is given to the relation of religious life to key cultural activities (festivals, sports, martial arts) and the collective consciousness inculcated by education and industry. Readings include primary sources of Japanese tradition (in translation), recent fiction and analyses of Japanese religious culture.

Religion and Society

ARS 40. **Church in the Modern World** (4) An analysis of the role of the church in today's movements of renewal and revolution, specifically the black, feminist, third world and ecumenical liberation movements.

ARS 44. **Human Sexuality and Christianity** (4) Exploration and analysis of human sexuality and religion from a Judeo-Christian perspective including Biblical and psycho-social perspectives, sexual ethics, sexual variations, homosexuality and heterosexuality, sexuality and public policy, and the church as sexual community.

ARS 142/242. **Christianity and Communism** (4) Exploration of Marxism's philosophical and historical roots with special attention to the young Marx's writing in philosophy and society, a survey of 19th and 20th century Marxism and detailed consideration of contemporary Christian-Marxist cooperation in Eastern Europe and the third world. Not open to freshmen.

ARS 143/243. **Social Ethics** (4) Theological (Judeo-Christian) and philosophical foundations of ethical decision-making with consideration of alternative styles of ethics and their application to such contemporary social issues as ecology, medicine, poverty, race, human sexuality, and war and peace. Not open to freshmen.

ARS 145/245. **Biomedical Ethics** (4) A study of the complex issues emerging from the revolutionary developments in biology and medicine, including human experimentation, abortion, genetic manipulation, behavior control, invitro

fertilization, death and dying, health care delivery, organ transplants and human sexuality. Not open to freshmen.

ARS 196b/296b. **Seminar in Social Ethics** (4) An interdisciplinary problem-centered seminar dealing with critical social issues such as professional ethics, violence and non-violence, the struggle for social justice and men's issues.

Religion and Psychology

ARS 51. **Interpersonal Relations** (4) A study of several humanistically-oriented psychological perspectives and counseling techniques involving interpersonal relationships. Explorations made into contemporary religious and psychological insights into interpersonal behavior and the nature of persons.

ARS 150/250. **The Loving Relationship** (4) A study of the quality of experiences found in loving relationships within marriage, family and with other persons in our culture and environment. Attention given to such areas as: friendships and dating, love and sexuality, caring and commitment, single parent and kinship relations, religion and culture, freedom and responsibility, and hedonism and moral values.

ARS 151/251. **Psychology and Religion** (4) A study of the dynamics of religion and psychology to gain understanding of the human predicament and human personality. Examination of the thought of several major psychologists and theologians — e.g., James, Erickson, Freud, Jung, Maslow, Kierkegaard, Tillich and contemporary transpersonal psychologists. Substantive issues — e.g., sin and neurosis, anxiety and faith, psychotherapy and salvation, guilt and reconciliation, emotions and reason, death and destiny — will be compared and interpreted from religious and psychological perspectives.

ARS 152. **Dreams** (4) An introduction to various prominent theories of dreams. Attention given to the religious perspectives of dreams, ways dreams can be used to foster knowledge and personal growth and sleep as it applies to the dream process.

ARS 154. **Meditation East and West** (4) A study of major theories and forms of meditation current and past. Involves analysis of the ways western and nonwestern forms of meditation promote union with God, spiritual growth, self-understanding and self-discipline. Exploration of behavior, feelings, beliefs and attitudes found in various meditational patterns.

ARS 156. **Religion of the Body** (4) An exploration of the existential dimensions of space: time and meaning, spirit and flesh. Religion as incarnation. Explores body consciousness, dance as meditation, psychology of territory, aesthetics of death, sport as art and massage as metaphysics.

Religion and the Arts

ARS 71. **Religion and Cinema** (4) A study of the way religious ideas, institutions and figures are presented on film. The course involves

screening and analyzing a variety of films. The scope of the course will be international and intercultural, but the majority of the images will inevitably be Biblical and Western. The course intends to demonstrate the power of cinematic images to define, enrich and sometimes pervert the religious sensibility.

ARS 72. **Biblical Themes in Western Literature** (4) A reading course in the Bible and the ways in which Biblical themes have informed representative texts in Western literature. A comparison of the Biblical world view with that of later ages by reading such authors as Dante, Dostoevsky, Camus and Hemingway.

ARS 74. **Autobiography and Religion** (4) A reading course in autobiographies written by religious searchers in both the Western and Eastern traditions. Authors studied will include: Saint Augustine, Mohandas Gandhi, Malcolm X, Paramahansa Yogananda, Nikos Kazantzakis, Alan Watts and Carl Gustav Jung. An attempt to assess the religious meaning in the life history of spiritual seekers from ancient times to the present, from India to England, from Crete to Harlem, U.S.A. Will include discussions of Christianity, Hinduism, Black Muslims, religious archetypes, and the spiritual odyssey of "secular saints."

ARS 170/270. **Religion and Modern Literature** (4) An analysis of religious questions and themes in contemporary European and American literature. Authors read will include D. H. Lawrence, Graham Greene, Albert Camus, William Faulkner, Nikos Kazantzakis and Flannery O'Connor. Not open to freshmen.

Special Areas

ARS 87. **Internship** (2-4) Work experience in a church or community agency involving pastoral or human relations skills. Pass/No Credit grading only.

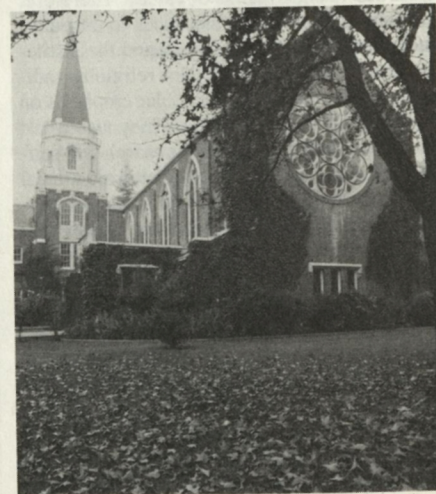
ARS 87a. **Church Agency Internship** (2-4)

ARS 191. **Independent Study** (2-4)

ARS 193/293. **Special Topics** (4)

ARS 291. **Independent Graduate Study** (2-4)

ARS 299. **Thesis** (2 or 4)



Sociology and Anthropology

Professors: Childs, LaBrack, Lewis, J. Phillips, H. Williams (Chair)
Assistant Professors: Jakubowska, Rubin

Sociology offers students an understanding of social structure and interaction and an appreciation of the complexities of human societies, large and small. The program provides a groundwork for careers in areas as diverse as criminal justice, law, journalism, social services, urban planning, education and business. Specialized courses prepare students who seek a professional career in sociology to pursue graduate studies. Students are encouraged to work closely with the faculty in developing programs best suited to their vocational goals. Whatever their emphasis may be, all students of sociology should acquire an appreciation of the manifestations of the human spirit and its milieu.

Anthropology is said to be characterized as the most scientific of the humanities and the most humanistic of the social sciences. Students are taught the theories, methods and content of anthropology through the study of Western and non-Western cultures. When combined with language training and study abroad, the major prepares students for work in a variety of international or multi-cultural settings, such as cross-cultural education, international corporations, and government. It also trains students for graduate education in social sciences, law, or business.

Requirements for the Major in Sociology

The completion of a minimum of nine courses (36 units) is required for the major. All majors are required to take four core courses: Social Psychology (ASO 179), Modern Organizations and Social Structure (ASO 177), Theories of Society (ASO 173) and Social Research Methods (ASO 175). Majors must also complete the departmental statistics requirement by taking Quantitative Methods in the Social Sciences (ASO 171) or an approved course in statistics from another department. To complete the requirements for the major, students must take a minimum of four additional courses in sociology. In most cases, these additional courses form one of the following emphases: criminal justice, organizations, social policy and urban affairs, or social services (see below). Majors may elect to develop their own coherent emphasis in consultation with their faculty adviser.

It is highly recommended that students begin their study of the field by taking Introduction to Sociology (ASO 51) and that their work normally include no more than two introductory level courses. Although not formally required, students majoring in Sociology are strongly advised to take one or more courses

which build skills in computer use. These courses may be taken within the major (ASO 171 is recommended) or through other departments.

An additional major, in social policy and urban affairs, is administered through the Sociology and Anthropology Department. Students interested in the Social Policy and Urban Affairs major should refer to the cross-disciplinary majors section of this catalog for further information.

Criminal Justice Emphasis

The criminal justice emphasis provides students with an opportunity to examine thinking regarding the causation and control of crime as well as to observe directly the functioning of contemporary crime control agencies. This emphasis is intended for students interested in a career in the field, and for students who wish to concentrate their studies on a subject that has important policy implications and which represents much of the best that sociology has to offer. Students electing the criminal justice emphasis will take Criminology (ASO 133), Corrections (ASO 132), Deviant Behavior (ASO 135) and Field Work (ASO 187).

Social Policy and Urban Affairs Emphasis

The social policy and urban affairs emphasis introduces students to the study of urban life and change and combines sociological studies of the city with studies in other social science disciplines. It is designed to appeal to the sociology major and the non-major. Studies in social policy and urban affairs may serve as preprofessional training in urban planning, community organization and government administration. Students interested in the social policy and urban affairs emphasis will ordinarily take Social Problems and Social Policy (ASO 61), Field Work (ASO 187) in the department and two approved electives from other social science disciplines. Only the sociology courses will be applied toward the nine required for a sociology major.

Social Services Emphasis

The social services emphasis allows the student to gain an understanding of the sociological perspective as it applies to the organization, delivery and evaluation of social service programs. Students completing this emphasis will combine classroom work with field experience in agencies which deal with child abuse, care of the elderly, poverty, physical handicaps, drug abuse and other problem areas. This program is designed for all students who are interested in the helping professions. It may serve as preparation for entry level positions in social service agencies, or for students contemplating graduate work in social welfare. Students pursuing the social service emphasis will complete Introduction to Social Services (ASO 81),

Delivery of Social Services (ASO 181) and one of the following: Field Work (ASO 187), Social Problems and Social Policy (ASO 61), Health and Illness (ASO 125) or Family and Marriage (ASO 127).

Organizations Emphasis

The organizations emphasis enables students to study the nature of work, organizations and careers in contemporary life, and to understand the significance of large scale organization for modern society. Such study will facilitate career entry in a variety of profit and non-profit organizations, develop career awareness and organizational skills, and provide a foundation for further professional study. Normally students are introduced to the emphasis by taking Modern Organizations and Social Structure (ASO 177), one of the required courses for all Sociology majors. Additionally, as part of the four course elective requirement within the major, they complete at least two of the following three courses, Introduction to Social Services (ASO 81), Organizations and the Individual (ASO 162), Work and Professions (ASO 164). A capstone organizational fieldwork or internship project is also required. Students complete the emphasis by taking at least one approved course in the study of organizations from outside sociology.

Requirements for the Major in Cultural Anthropology

A minimum of nine courses (36 units) is required for the major. All majors must take five core courses: Cultural Anthropology (ASO 53), Physical Anthropology (ASO 112), Theories of Society and Culture (ASO 173), Social Research Methods (ASO 175), and Field Work (ASO 187). In addition students must take a minimum of four courses: two ethnographic area courses (Africa, Japan, South Asia, Middle East, Latin America, Europe); and two courses with a topical focus such as culture change (ASO 114), gender (ASO 123), kinship and family (ASO 127). Majors are encouraged to link area and topic interests within the general structure of the program. Topical courses should be selected in consultation with an adviser.

Students begin their study of the discipline with the two introductory courses (Cultural, ASO 53 and Physical, ASO 112). Students are also strongly urged to pursue appropriate language training and to complete both Theories of Society and Culture (ASO 173) and Social Research Methods (ASO 175) prior to beginning Field Work (ASO 187). Cultural anthropology majors will complete a research-based Senior Thesis as part of the Field Work course.

Requirements for the Minor

a. Minor in Sociology

The sociology minor consists of five courses (20 units). It is designed to provide a general

introduction to the field and a broad overview of social interaction and structure. Students are required to work closely with a minor adviser in constructing a coherent course of study that includes the following: one introductory course (ASO 51, 61, or 81); one research methods course (ASO 175); one course dealing with social structural analysis; one course dealing with social psychological processes; and a fifth course in sociology that is not at the introductory level and complements the program of study. Students majoring in anthropology may not take a minor in sociology.

b. Minor in Anthropology

The anthropology minor consists of five courses (20 units). It is designed to offer students a broad cross-cultural introduction to the variety of Western and non-Western cultures. The minor requires Cultural Anthropology (ASO 53); Physical Anthropology (ASO 112); one ethnographic "area studies" course (e.g., *People and Cultures of Japan, the Middle East, India, or Latin America*); and one advanced ethnology course (e.g., *Dynamics of Social and Cultural Change* [ASO 114]). One additional course in the Department will be chosen in consultation with the minor adviser in anthropology. Students majoring in sociology may not take a minor in anthropology.

Course Offerings

Introductory Courses

ASO 51. Introduction to Sociology (4) An introduction to the field of sociology with an emphasis upon study of the basic concepts of sociological analysis, their use in the understanding of major institutions and the trends and problems associated with the urban, industrial and political developments in contemporary society.

ASO 53. Cultural Anthropology (4) An introduction to the anthropological view of man, the character and nature of culture and the diversity of the human species. The major concepts and theoretical assumptions of the discipline will be illustrated by applying anthropological perspectives to both exotic peoples and one's everyday life.

ASO 61. Social Problems and Policy (4) The means that sociologists use to approach, define and propose solutions to social problems. Analysis of contemporary problems from a sociological perspective; emphasis upon change, problem solving and social policy.

ASO 81. Introduction to Social Services (4) An introduction to the field of social services. Students will learn and utilize sociological methods to understand the ways in which societies attempt to deal with problems of individuals and groups in need of services, identification of client population, agency organization, competition, funding, program design and evaluation. This course combines classroom work with field work in both public and private agencies.

ASO 93. Special Topics (lower level) (4)

Other Offerings

ASO 104. Sociology of Sport (4) An examination of the institution of sport from a sociological perspective. Theories of sport and related empirical data are analyzed. Special attention will be devoted to the impact of sport on education, racial discrimination in sport and theories of play. Prerequisite: a course in sociology.

ASO 106. Popular Culture (4) An examination of mass, or popular, cultural artifacts and their various linkages with contemporary social structure. Topics examined include: the cultural creator and social restraints; the development and forms of popular cultural industries; cultural diffusion and the differential consumption of cultural artifacts as viewed from the perspective of both social stratification and social differentiation; cross-cultural diffusion of culture.

ASO 108. Food, Culture and Society (4) A focus on the role of food in society, with an emphasis on understanding food in its social and cultural contexts. Topics covered include food and nutrition; problems of over- and under-eating; food fads; food sacrifices and taboos; food and social and ethnic identity; and the global politics of food. Although beginning with a look at American food ways, the course is highly cross-cultural and comparative in nature. No prerequisites.

ASO 110. Religion and Society (4) Every society is engaged in the never-completed enterprise of building a humanly meaningful world. This course will examine the role of religion in that process of world building, approaching the topic both comparatively and in terms of the evolution of societies. We will examine religion in primitive societies, religion and modernization, the process of secularization, the religious dimensions of community, culture formation and the emergence of what is called "the new religious consciousness" in contemporary America.

ASO 112. Physical Anthropology (4) A detailed examination of human origins and an evaluation of man's place in the natural world. Topics will include geological environments, nature of life, reproduction and genetics, the fossil record, primatology, early man, the classification and distribution of living races, the question of "nature vs. nurture," the social and ethical implications of genetic engineering and the new sociobiology.

ASO 114. Dynamics of Social and Cultural Change (4) An advanced examination of how societies have responded to a variety of pressures and undergone substantial changes. The effects of the agricultural, industrial and technological revolutions upon selected cultures from around the world will be detailed and related to such topics as population, rise of political bureaucracy, peasantry as a social class, colonialism, nationalism and the consequences of technical modernization on religion and the family. Prerequisite: ASO 51, 53 or permission of instructor.

ASO 123. Sex and Gender (4) A comparative

analysis of the social construction of gender in a wide range of contemporary societies, both western and non-western. The following topics will be addressed: gender as symbolic ordering, gender as culturally constructed identity, domains of power and authority, production and reproduction, colonialism and the underdevelopment of women and the Third World response to western feminism.

ASO 125. Health and Illness (4) Using basic sociological concepts, the course explores the complexities of the contemporary health care system. Cross-cultural materials are employed to give international perspective. Areas studied include: definition of health and illness, patient-practitioner relationship, health professions, medical institutions and social epidemiology. Prerequisite: sophomore status or above.

ASO 127. Family and Marriage (4) Deals with the social dynamics of human intimacy and places the family in its broader societal context. The evolution of the family is studied both historically and comparatively. Special attention is given to the social meaning of sexuality; changing roles of men and women; intimacy, marriage and divorce; domestic violence; parenthood, childhood and aging; and the future of the nuclear family and alternative ways of living together.

ASO 132. Corrections (4) History and theories of and current practices in institutional and non-institutional programs addressed to the correctional treatment of juvenile and adult offenders.

ASO 133. Criminology (4) Analysis of the nature and distribution of crime; theories of crime causation; examination of the operation of police and judicial agencies.

ASO 135. Deviant Behavior (4) An examination of the various theoretical approaches to the study of deviant behavior. Special attention is given to the problem of defining deviance in the context of its culturally relative nature.

ASO 160. Urban Society and Culture (4) Analysis of the city as a social system. Concepts of city and community. Urbanization, urbanism, stratification, power and community organization. Applications and selected problems in urban planning, administration and social change, in national and international contexts.

ASO 162. Organizations and the Individual (4) A sociological study of the way in which the structure of organizations impinge upon the lives of individuals. Special attention will be given to the structural determinants of motivation, opportunity, power and participation within organizations. Organizational culture (roles and images), the processes of organizational change and the recent efforts to improve the quality of work life and productivity in organizations will be examined.

ASO 164. Work and Professions (4) To understand the place of work in a society is to understand, in a most immediate way, how that society functions. Work also has a profound effect on individual development — one's sense of self. The course examines the ways in which

work is organized and how it relates to societal values, the structure of the family, education and individual motivation. Particular attention will be given to the structure of the labor market and what it means to be a professional. Students are encouraged to relate what is learned in the course to their own life/work planning.

ASO 166. Social Science, Ethics and Policy (4) The relationship between social science and policy will be explored and specific social practices will be examined in the light of work ethics and the concern for the quality of life (e.g., policies related to the poor, the older adult, education, who plans for whom). Attention will be given to the application of sociological theory and empirical research to the process of policy formation. The relationship of societal values to the definition of societal problems and the processes of planning and change will be examined.

ASO 171. Quantitative Methods in the Social Sciences (4) Quantitative methods and techniques most commonly used in political science and sociology; the use of computers in social research (same as APO 133.)

ASO 181. Delivery of Social Services (4) Various facets of the role of the social service worker. The sociological perspective will be used to examine the relationship of the social service worker to the client, co-workers, the agency and the community. The emphasis will be on recognizing, analyzing and resolving problems which impede effective delivery. Weekly class sessions will be supplemented with a regular supervised field experience in a local social service agency. Prerequisite: ASO 81 or permission of the instructor.

Core Courses

These courses must be taken to fulfill major requirements.

ASO 173. Theories of Society and Culture (4) This course traces the development of sociological theory with special attention to the relationship between ideas and social contexts. Key concepts such as community, authority and alienation will be examined in the work of major theorists in the field. The latter part of the course will relate social theory to contemporary research and the attempt to address critical social issues facing our society and world. Prerequisite: one of the following: ASO 51, 53, 61 or permission of the instructor.

ASO 175. Social Research Methods (4) The review and application of the various methods most used in social science research. Prerequisite: one of the following: ASO 51, 53, 61 or permission of the instructor.

ASO 177. Modern Organizations (4) Analysis of the basic structures of human society. Explorations of relations between organizations, society and the individual. Case studies in industrial, political, educational and community organization. Prerequisite: one of the following: ASO 51, 53, 61 or permission of the instructor.

ASO 179. Social Psychology (4) The study of

the relationships between the individual and his social environment. Prerequisite: one of the following: ASO 51, 53, 61 or permission of the instructor.

Special Areas

ASO 187a, b. Field Work (2-4, 2-4) Supervised observation and experience in community and agency settings. Field work sites may be local or away from campus, and may be undertaken as part of a study abroad program. Eligibility to enroll presupposes familiarity with issues and problems in the field in which one is to work — most usually demonstrated by acceptable work in a related on-campus course. ASO 187b can be either an experience in a second community or agency setting or a second experience in the same setting focused at a more advanced level than ASO 187a. Specific responsibilities for each course will be set in conference with the instructor. Note: Only four units of ASO 187 may count toward fulfilling major requirements. Prerequisites: for ASO 187a, permission of instructor; for ASO 187b, 187a and permission of instructor. Pass/No Credit grading only.

ASO 191. Independent Study (2-4) Available to majors with a "B" average in the major field by permission of individual instructor.

ASO 193. Special Topics (upper level) (4)

ASO 197. Independent Research (2-4)

Graduate Courses

Most undergraduate courses may be taken for graduate credit. Responsibilities for graduate credit are worked out individually in conference with the instructor.

ASO 291. Graduate Independent Study (2, 4)

ASO 293. Graduate Special Topics (2, 4)

ASO 295. Graduate Seminar (4)

ASO 297. Graduate Independent Research (2, 4)

ASO 299. Thesis (2, 4)

Sport Sciences

Professor: Albaugh

Associate Professors: Boelter, Ciccolella, Stubbs (Chair), Sutton

Assistant Professors: Koehler, Snell

Lecturer: Klein

The Department of Sport Sciences offers programs of study leading to both the Bachelor of Arts and Master of Arts degrees. The purpose of the Sport Sciences major is to educate and prepare students for a wide variety of careers in the field broadly defined as sport.

A set of required core courses provides majors with a common base of knowledge and understanding about the philosophical, sociological, psychological and scientific concepts within the discipline. In addition to the core, majors must successfully complete one of the following tracks: physical education, sports medicine, or sport management. Students seek-

ing a physical education teaching credential may also earn an additional specialist credential in adapted physical education. All majors must also attain nationally recognized certification in First Aid and Cardiopulmonary Resuscitation (CPR).

Additional programs, which enjoy broad University participation, include a wide range of physical activity classes, informal recreational opportunities, intramural sports, club sports, and intercollegiate athletics.

Sport Sciences Core

All majors must successfully complete the following core courses:

ASP 125 Foundations of Sport Sciences

ASP 127 Philosophical Perspectives of Sport and Physical Activity

ASP 135 Physiology of Exercise

ASP 137 Psycho-Social Foundations of Sport

ASP 195 Senior Seminar

Physical Education Track

The Physical Education Track focuses on and provides an opportunity to study those aspects of human movement and human performance as a reflection of personal values and as an expression of an individual's physical, psychological and social nature. In addition to successfully completing the Sport Sciences Core, the physical education student must complete a series of courses that culminate with options to qualify for teaching and adapted specialist credentials, coaching certification, or advanced study. Degree requirements for this track also include the successful demonstration of a variety of motor skill proficiencies.

Students seeking a single-subject teaching credential are required to complete the following courses, in addition to courses required by the School of Education:

ASP 43 Contemporary Issues in Health Science

ASP 121 Team Sports

ASP 123 Individual Sports

ASP 131 Assessment and Evaluation

ASP 133 Kinesiology

ASP 143 Athletic Training

ASP 151 Movement Experiences for the Elementary School Child

ASP 153 Adapted Physical Education

ASP 159 Physical Education in the Secondary Schools

ASP 161 Biomechanics of Human Movement

ASP 165 Sport and Liability

Motor Skill Proficiencies

Sport Sciences majors completing the Physical Education Track must also demonstrate ten proficiencies over six areas: aquatics (1); gymnastics and tumbling (1); combatives and/or martial arts (1); dance (1); individual sports (3); and team sports (3). The ten proficiencies must include a minimum of two advanced, four intermediate and four beginning skills. Proficiencies may be met by successfully completing

ASP 121 and ASP 123 and/or successfully completing appropriate activity classes.

Specialist Credential in Adapted Physical Education (Optional)

Students interested in pursuing a specialist Credential in Adapted Physical Education are also required to complete:

- ASP 253 Advanced Concepts and Techniques in Adapted Physical Education
- FES 123 The Exceptional Child
- FES 192w Laboratory Services: Learning Handicapped Pupils
- FES 192x Laboratory Services: Severely Handicapped Pupils

Coaching Concentration (Optional)

The coaching concentration is recommended for both sport sciences and other teaching majors who are interested in pursuing coaching careers. The additional courses required for majors in the Physical Education Track and courses required for non-majors are as follows:

Majors

- ASP 139 Applied Sport Psychology
- ASP 189f, g Practicum in Coaching

Non-Majors

- ASP 41 Heart, Exercise and Nutrition
- ASP 137 Psycho-Social Foundations of Sport
- ASP 143 Athletic Training
- ASP 198f, g Practicum in Coaching

Advanced Study (Optional)

Students preparing for advanced study in the physiological, sociological and/or psychological areas shall select, by advisement, additional cognate courses which will strengthen their preparation for research and/or graduate study.

Sports Medicine Track

The Sports Medicine Track is specifically designed to provide the theoretical background and practical learning experiences requisite to therapy programs, advanced scientific study, athletic trainer certification (NATA) and employment in agency, business and industrial fitness/wellness positions. Thus, students can apply their knowledge and scientific principles to the maintenance, enhancement or rehabilitation of human performance through the medium of exercise and/or sport.

In addition to successfully completing the Sport Sciences Core, Sports Medicine students must successfully complete a series of courses within the department and courses drawn from the life and physical sciences.

Department Courses

- ASP 131 Assessment and Evaluation
- ASP 133 Kinesiology
- ASP 143 Athletic Training
- ASP 145 Sports Medicine
- ASP 147 Clinician in Sports Medicine
- ASP 153 Adapted Physical Education

Life and Physical Science Courses

- ABS 51 Principles of Biology

- ABS 61 Principles of Biology
- ABS 71 Human Anatomy
- ABS 81 Human Physiology
- ACH 25 General Chemistry
- APS 23 General Physics

Athletic Training Certification (Optional)

Students in the Sports Medicine Track who are interested in pursuing athletic training certification must also complete ASP 149 (Evaluation, Treatment, Rehabilitation of Athletic Injuries) and 1500 hours of internship experience in the athletic training/clinical setting.

Sport Management Track

The Sport Management Track is designed to develop an understanding of sport and fitness from a managerial perspective. Through a unique combination of specialized courses within the Department of Sport Sciences and courses from related disciplines, students gain insights into both the theoretical and applied aspects of managing the sport or fitness enterprise.

In addition to completing the Sport Sciences Core, Sport Management students must successfully complete a series of courses within the department and adjunct courses from liberal studies, business and computer science. Special attention is given to the behavioral dimensions of sport, management and organizational skills, economic and business concerns, and legal and ethical issues in sport.

Degree requirements also include completion of two separate internship experiences in selected sport or fitness settings. These include, but are not restricted to, professional sports, intercollegiate athletics, campus sports/intramurals, amateur sports, community recreation, private sport clubs, corporate fitness, hotel fitness and resorts, and sport retailing/merchandising.

Department Courses

- ASP 165 Sport and Liability
- ASP 167 Introduction to Sport Management
- ASP 169 Managing Sport Enterprises
- ASP 175 Problem Solving in Sport Management
- ASP 187a Internship
- ASP 187b Internship

Adjunct Courses

- ACO 43 Introduction to Interpersonal Communication
- ACS 25 Computers and Information Processing
- AEC 53 Introductory Microeconomics
- LBA 31 Principles of Financial Accounting
- LBA 107 Marketing Management

General Service (Activity) Classes

A variety of physical activity classes are available for all interested University students who

wish to acquire new motor skills, maintain a routine of physical activity and continue or start an exercise or fitness program. The "how" and "why" of various activities are stressed. These classes vary in course credit from one to two units and students can enroll on a voluntary basis. Examples are swimming, scuba, ice skating, bowling, running for health, volleyball, badminton, tennis, golf, racquetball, weight training, aerobic workout, yoga, aikido, kung fu, and weight and figure control.

Students on the Stockton campus can apply a combined total of eight units of ASP 11 activities, ASP 13 intercollegiate athletics and ADR 13 dance activities toward graduation; however, no more than four of the eight units can be in intercollegiate athletics. A one-unit activity class can be repeated only once; no two unit activity class may be repeated for credit. All activity and intercollegiate athletics classes will be evaluated on the Pass/No Credit basis.

Informal Recreation

Facilities are made available so interested faculty, staff and students may voluntarily engage in activity on an informal recreational basis.

Intramural Sports

Intramural activities are presented to provide a program of competitive individual and team sports on a broad base. These varied activities, which include flag football, basketball, volleyball, softball, tennis, badminton, racquetball, triathlon, soccer, and golf are offered for men and women and coed groups.

Club Sports

Clubs are designed for students, faculty and staff who have attained an intermediate or advanced skill level in an activity and wish to continue participating in that activity in an organized recreational setting.

Clubs have been established in badminton, crew, lacrosse, running, snow skiing, soccer, volleyball and water skiing.

Intercollegiate Sports

The University is a member of the Big West Conference and participates in seven men's and seven women's sports. The opportunity to compete is open to all students who can qualify.

Men

- Baseball
- Basketball
- Football
- Golf
- Swimming
- Tennis
- Water Polo

Women

- Basketball
- Cross Country
- Field Hockey
- Softball
- Swimming
- Tennis
- Volleyball

Course Offerings

- ASP 11. **General Activity Classes** (1-2) Open to entire University student body. Pass/No Credit grading only.
- ASP 13. **Intercollegiate Athletics** (1) Open to all University student-athletes. May be repeated up to four unit maximum. Pass/No Credit only.
- ASP 23. **First Aid** (1) This course is designated to help the student achieve Red Cross certification in Standard First Aid and CPR. In addition to developing safety awareness, the student will obtain a body of knowledge and practice skills relating to proper medical emergency responses. Lab fee required.
- ASP 25. **Advanced First Aid** (2) Advanced First Aid and Emergency Care reviews concepts and theories in Standard First Aid and includes more sophisticated skill development: triage, extrication, traction splinting and water rescue. Cardiopulmonary resuscitation is incorporated into the course. Standard First Aid is not a prerequisite although it is recommended that students have some basic first aid knowledge. Lab fee required.
- ASP 41. **Heart, Exercise and Nutrition** (4) An in-depth exploration of the cardiovascular, musculo-skeletal systems, and their dependence on proper nutrition in maintaining optimal efficiency. Individually prescribed aerobic and exercise programs are the focal issues in twice-weekly lab experiences. Lab fees required.
- ASP 43. **Contemporary Issues in Health Science** (4) A survey of health related topics including mental wellness, human development, substance use and abuse, diet, nutrition, fitness, risk factors, disease and community well-being. Emphasis is on the development of informed and effective consumers of health care products and services. This course fulfills California Legislative requirements for teacher credential candidates.
- ASP 87. **Fieldwork** (2-4) Laboratory work in school and community agencies. Open to non-majors by permission. Pass/No Credit only.
- ASP 89/189. **Practicum** (2, 2, 2, 2) Non-classroom experiences in activities related to Sports Medicine, under conditions determined by the appropriate faculty member. ASP 189 represents advanced practicum work involving increased independence and responsibility. Enrollment is limited to six units maximum of 89/189a, b, c, d offerings and no category within a course may be repeated for credit. A list of specific courses follows.
- ASP 89a/189a. **Practicum in Adapted Physical Education** (2, 2)
- ASP 89b/189b. **Practicum in Athletic Training** (2, 2)
- ASP 89c/189c. **Practicum in Biomechanics** (2, 2)
- ASP 89d/189d. **Practicum in Exercise Physiology** (2, 2)
- ASP 121. **Team Sports** (3) An applied motor learning approach to skill acquisition for team sports. In addition to personal skill development, students will learn how to prepare for the introduction, explanation, and demonstration of sports skills; develop and maintain skill levels through practice and reinforcement; and use cognitive processes to improve performance. Eight to twelve different team sports will be presented and instruction time per sport will vary. Prerequisite: Sport Sciences major and/or permission of instructor.
- ASP 123. **Individual Sports** (3) An applied motor learning approach to skill acquisition for individual sports. In addition to personal skill development, students will learn how to prepare for the introduction, explanation, and demonstration of sports skills; develop and maintain skill levels through practice and reinforcement; and use cognitive processes to improve performance. Eight to twelve different individual sports will be presented and instruction time per sport will vary. Prerequisite: Sport Sciences major and/or permission of instructor.
- ASP 125. **Foundations of Sport Sciences** (1) A survey of the academic programs, and career opportunities in the field of sport sciences focused on the basic concepts central to the study of sport and physical activity.
- ASP 127. **Philosophical Perspectives of Sport and Physical Activity** (3) A critical examination of the meaning in sport, athletic, fitness, recreation and physical education activities. Arguments from major classical and contemporary philosophical positions are used to address questions relative to personal identity, moral considerations, ethics, aesthetics, and the nature of competition. Leading theorists in the various fields of human movement studies are reviewed.
- ASP 131. **Assessment and Evaluation** (3) Development of competencies of Sport Sciences majors for the design and implementation of procedures to appropriately measure and evaluate students, clients, and/or programs. Basic data acquisition methods and statistical analysis techniques are presented.
- ASP 133. **Kinesiology** (4) A functional study of musculo-skeletal anatomy and its relationship to human movement. Prerequisite: ABS 11, 51 and 61, 71 or permission of instructor.
- ASP 135. **Physiology of Exercise** (4) A study of human physiological functions under conditions of muscular activity with special emphasis on activity in physical education and athletic settings. A laboratory experience is provided for the demonstration and practice of commonly used testing procedures in physical education and athletics as well as the demonstration of basic physiological responses to exercise. Prerequisite: ABS 11, 51 and 61, 81 or permission of instructor.
- ASP 137. **Psycho-Social Foundations of Sport** (3) A study of the psycho-social foundations of sport, from the perspective of participants and spectators, to enhance understanding and enjoyment of sport of every type and all levels of complexity. Topics include: aggression and violence; gender roles in sport; political, economic and religious implications; value of youth sports; performance enhancement; lifetime sports; learning sport skills.
- ASP 139. **Applied Sport Psychology** (4) An

application of sport psychology theories specific to learning and performing sport skills. Topics include: coaching roles, emotional states, intervention techniques, self monitoring processes, transfer of training, goal setting, behavior observation and reinforcement. The course will satisfy the State of California coaching certification requirements. Prerequisite: ASP 137 or equivalent.

ASP 141. **Sports in America** The passions and politics of American sport are a significant theme in our society. The sport experience will be thoroughly examined for its virtues, as well as its myths and criticisms. Topics will include age group sport, women in sport, sport in the schools and colleges, media, economics, racism, government control, violence and sport as it relates to health.

ASP 143. **Athletic Training** (3) A functional application of anatomy, physiology and kinesiology necessary in the understanding, assessment, treatment and rehabilitation of medical problems confronted by the trainer, coach, physical therapist or physical educator. Prerequisite: ABS 11, 51 and 61, 71 or permission of instructor. Lab fee required.

ASP 145. **Sports Medicine** (3) This course is designed to provide breadth and depth of knowledge in the field of sports medicine, with content emphasis on non-traumatic aspects of sports medicine. Topics of study are intended to serve the needs of students who are human-oriented and scientifically based in their undergraduate course of study, e.g., sports medicine, pre-physical therapy, athletic training, and physical education. Prerequisite: ASP 143 or permission of instructor.

ASP 147. **The Clinician in Sports Medicine** (3) An advanced course in sports medicine combining in-depth classroom theoretical analysis with community-based clinical experience (10 hours a week). Students individually conduct extensive examinations of theoretical sports medicine topics for classroom presentation. Prerequisite: six hours of completed coursework in Sports Medicine Track.

ASP 149. **Evaluation, Treatment, Rehabilitation of Athletic Injuries** (3) An advanced course for Sports Medicine students focused on the development of clinical skills essential for evaluating, treating and directing rehabilitation of common orthopedic injuries occurring in athletic participation. Prerequisites: ASP 133 and 143.

ASP 151. **Movement Experiences for the Elementary School Child** (4) Lecture/laboratory experiences in elementary school physical education programs. Curriculum development, classroom techniques and procedures are studied.

ASP 153. **Adapted Physical Education** (4) A broad-based examination of the physical education needs of disabled children and adults. Components of course focus on physiological profiles of disabled individuals, federal and state legislative mandates, assessment and design of individual educational programs, and instructional and evaluative techniques in adapted and special physical education.

ASP 159. Physical Education in Secondary Schools (3) This course is the last in a series of professional courses and is to be taken by Physical Education Track students just prior to their directed teaching experience. Classwork will be fieldwork-based. The units of material to be covered include: classroom management, interpersonal relations, planning for instruction (unit and daily plans), execution of instruction, assessment of instruction, school policies and professional role development. Prerequisites: Completion or concurrent enrollment in all Physical Education Track courses, and other courses required for the major and motor skill proficiencies, permission of instructor.

ASP 161. Biomechanics of Human Movement (4) An introduction to the biomechanics of human movement and the analytic procedures and techniques for subsequent application in the sport sciences and related fields. Included is a review of basic functional/mechanical human anatomy and kinesiology. Outcome objectives are an understanding of mechanical principles governing human movement, skill in use of a variety of measurement techniques commonly applied in biomechanics, an ability to analyze motor skill performance via cinematographic/computer methodologies, and skill in prescriptively communicating results of analysis.

ASP 163. Recreation and American Society (4) A study of the role of recreation and leisure services as an American social institution, interacting with other institutions and social movements throughout history and within contemporary social order; analysis of social conditions, current organizational patterns and concerns of public, private, commercial and voluntary community organizations.

ASP 165. Sport and Liability (4) To present legal issues and responsibilities relevant to professionals in the areas of sports medicine, sport management, physical education, and athletics. Exposure to liability in the areas of negligence, contract law, criminal prosecution, governance structures, anti-trust laws, and unlawful discrimination will be offered. General legal principles will be studied in concert with a review of current case law.

ASP 167. Introduction to Sport Management (4) An introductory course for Sport Management Track students and students interested in sport business. Study will include career opportunities in sport enterprises, agencies and facilities, basic management functions, scope of sport managers responsibilities and a survey of relevant literature.

ASP 169. Managing Sport Enterprises (4) The application of theory and concepts to agency management. Study areas include: management theories and formal organization relevant to organizational goals, legal concerns and policy development, decision-making, marketing, time management, budgeting and financial management, personnel management and communication, motivation, crisis management, productive training and evaluation. An essential part of the course lies in the development of individual management skills.

ASP 172. Case Analysis in Sport and Fitness Management (4) This course addresses the principles and practices pertinent to the development and operation of the private and commercial sport or fitness enterprise. The case study method will be used to focus on designing and implementing the prospectus, feasibility studies, and the analysis of organizational effectiveness. Topics of special interest may include the planning and controlling of resources, facility operations, and strategies for production and operations management.

ASP 175. Problem Solving in Sport Management (4) An advanced course of study providing breadth and depth of understanding about the field of sport management. Study of selected topics will include pertinent applications of theory and principles essential to managing sport enterprises and/or facilities. Prerequisites: ASP 167 and 169, junior or senior standing and permission of instructor.

ASP 179. Introduction to Research (4) Rationale for and status of professional research; research designs and their applicability to students' disciplines, review, critique and synthesis of selected literature; development of research proposal and pretest of instrument.

ASP 187a, b. Internship (4, 4) Pre-professional agency leadership experience for upper division majors who have successfully completed the majority of theory courses. Registration is limited to one four-unit course per semester or session and an overall maximum of eight units. Pass/No Credit grading only.

ASP 189a, b, c, d. Practicum (2, 2, 2, 2) Advanced practicum work in Sports Medicine. See ASP 89 for sub-categories and enrollment limitations.

ASP 189e. Practicum in Physical Education (2-4) A supervised leadership experience in the elementary or secondary school setting. The student will be working as a physical education specialist developing and conducting appropriate physical activity programs. Prerequisites: ASP 151 or 159 and permission of instructor.

ASP 189f, g. Practicum in Coaching (2, 2) Students will be assigned to an intercollegiate or interscholastic sport team for the semester and will participate in practice sessions throughout the specific sport season. Written guidelines will be developed cooperatively by the supervisor, coach and student. Prerequisites: ASP 137 and 139.

ASP 191. Independent Study (2-4)

ASP 193. Special Topics (3, 4)

ASP 195. Senior Seminar (2) This course is designed around the critical analysis and synthesis of knowledge and issues within the sport sciences. Focus will be on new directions with the disciplinary tracks, current trends in the professions and their potential implications. Prerequisite: senior standing or permission of instructor.

ASP 233. Advanced Kinesiological Analysis of Motor Performance (4) A scientific analysis of motor skills and human movement. Prerequisite: ASP 133, graduate standing or permission of instructor.

ASP 235. Advanced Physiological Analysis of Motor Performance Advanced study of physiological responses to exercise with heavy emphasis on laboratory methods and procedure for testing and demonstrating these responses for research application. Prerequisites: ASP 135 or equivalent, and permission of instructor.

ASP 237. Advanced Sport Psychology (4) A graduate seminar designed for advanced students exploring theoretical concepts of psychology as they relate to individual and group behavior in the sport environment. Prerequisite: ASP 137 or equivalent and permission of the instructor.

ASP 239. Advanced Applied Sport Psychology (4) A graduate seminar dealing with the application of psychological theories to sport environments. There will be specific focus on coaching methods and self monitoring processes for individual athletes. Prerequisite: ASP 139 or equivalent and permission of instructor.

ASP 241. Advanced Sociology of Sport (4) A graduate seminar dealing with theoretical concepts of sociology related to the American sport environment. Topics are racism, sex roles, politics, media, economics, government and violence.

ASP 247. The Clinician in Sports Medicine (4) An advanced course in sports medicine combining in-depth classroom theoretical analysis with community-based clinical experience (10 hours per week). Students individually conduct extensive examinations of theoretical sports medicine topics for classroom presentation. Prerequisite: ASP 143.

ASP 253. Advanced Concepts and Techniques in Adapted Physical Education (4) This course provides the culminating learning experience for those teaching credential candidates who are completing the waiver program with an emphasis in adapted physical education.

ASP 261. Advanced Biomechanical Analysis (4) Advanced study of mechanical principles which influence human movement; both non-cinematographic and cinematographic techniques are used to analyze and evaluate motor skills and errors in performance; critical evaluation of current research findings in biomechanics. Prerequisites: undergraduate course in kinesiology or biomechanics or permission of instructor.

ASP 265. Advanced Sport and Liability (4) Legal issues and responsibilities relevant to professionals in the areas of sports medicine, sport management, physical education, and athletics. Exposure to liability in the areas of negligence, contract law, criminal prosecution, governance structures, anti-trust laws, and unlawful discrimination will be offered. General legal principles will be studied in concert with a review of current case law.

ASP 269. Advanced Management of Sport Enterprises (4) A graduate seminar designed to provide for gaining breadth and depth of knowledge about the application of theory and concepts to program and/or agency management not included in the introductory level course.

ASP 272. Advanced Case Analysis in Sport and Fitness Management (4) A graduate seminar designed to provide breadth and depth of topical knowledge beyond that covered in the introductory course.

ASP 275. Advanced Sport Management (4) A seminar designed for advanced students providing in-depth examination/research of problems unique to sport management, technological developments and trends. Prerequisite: ASP 175 or permission of instructor.

ASP 279. Research Methods in Sport Sciences (3) An in-depth evaluation of the various methods used in the disciplines of the sport sciences, including historical, experimental, normative-survey and statistical; means of selecting a research problem and planning its solution; important considerations regarding review of the literature; overview of proper form and style in research writing. Student must sign up for and satisfactorily complete a one-unit ASP 297-Independent Research project in the semester immediately following satisfactory completion of this course. Prerequisites: graduate standing and completion of course in statistics.

ASP 287a, b. Graduate Internship (4, 4) Professional leadership experience for graduate students. Agency placement is based on student goals and professional leadership background.

ASP 287c. Graduate Clinical Experience in Sports Medicine (4) A graduate clinical experience for students who have completed ASP 133, 135 and 143. Interns will be assigned as trainers in local high schools, as assistant to physical therapists or in other clinical environments. Prerequisites: undergraduate courses and permission of instructor.

ASP 289a. Graduate Practicum in Administration of Sport Sciences (4) This course is designed to provide students with a practical experience in the application of administrative theory. Prerequisite: ASP 169/269 or equivalent.

ASP 289b. Graduate Practicum in Coaching (4)

ASP 291. Independent Study (2-4)

ASP 293. Special Topics (3, 4) Prerequisite: graduate standing or permission of instructor.

ASP 297. Independent Research (1-4)

ASP 299. Thesis (4)

ricula of programs in Human Development (see page 97), Organizational Studies (see page 36), Entertainment Management (see page 96) and the Honors Program (see page 36).

AID 55. Introduction to Human Development (4) This course is designed to introduce students to the development and potentialities of human beings over the full life span. The approach is interpersonal and intergenerational, with the primary focus upon interaction within the family and the work career. These interactions form the basis from which the stages of the life cycle will be studied.

AID 57. Foundations of the Helping Relationship (2) This course provides the foundations of student development theory and interpersonal communication for students who will serve in the positions of Student Adviser or Resident Assistant. Topics include Perry's theory of moral and cognitive development, psychological types as exemplified in the Myers-Briggs Type Indicator and the theory and practice of the helping process. Prerequisites: successful completion of the Resident Assistant/Student Adviser selection process.

AID 85. Washington Center Seminar (4) An evening seminar conducted by the Washington Center in their residence complex for members of the Washington Center Internship Program. Topics change each semester and are usually keyed to the area of the full-time work experience; seminars are selected before leaving campus and only with the approval of the Director of the Center for Integrated Studies. Pass/No Credit grading usual; letter grade option available only with concurrent registration in Independent Study.

AID 87a, 187a. Organizational Internship (4, 4) Supervised experience offering opportunities for participant observation in an organizational setting. Students will apply organizational theories to projects in organizational planning, research and coordination. AID 187 represents advanced work in organizational analysis based on prior internship experience or course preparation. Pass/No Credit grading only.

AID 187b. Entertainment Management Internship (2-4) A "capstone" experience to bridge the gap between the academic experience and the working career. Practical, non-paid work experience in the private sector of the entertainment industry. Fifteen (15) weeks; three (3) to five (5) working days per week commensurate with units of credit. Assistance is provided in obtaining the internship best suited to needs. Permission of adviser and instructor required.

AID 87c, 187c. Washington Center Internship (4, 4) A full-time work experience in the nation's capital, arranged by the Washington Center and supervised by their staff and a UOP faculty member. Job placement may be in a wide variety of settings in government or private agencies. Course 187c represents a greater degree of job responsibility and utilization of special skills. Attendance at an orientation workshop is required before the internship will be approved. Pass/No Credit grading only.

AID 87H, 187H. Honors Internship (2-4, 2-4) Honors internships are normally supervised by faculty participating in College honors programs and emphasize learning through observation and participation in off-campus work settings. Honors internships are undertaken as an integrated part of honors study. Course 187H represents advanced work based on prior independent learning or course preparation.

AID 91, 191. Independent Study (2-4, 2-4) An independent learning project which may include library research or other similar learning activities, normally pursuing interdisciplinary or cross-disciplinary learning objectives. Any appropriate faculty within the University may serve as sponsor. Ordinarily students work cooperatively with faculty sponsors to design independent learning projects.

AID 91H, 191H. Honors Independent Study (1-4, 1-4) An independent learning project which may include library research or other activities, undertaken as an integrated part of study within the College honors program.

AID 93, 193. Special Topics (2-4, 2-4)

AID 97, 197. Independent Research (2-4, 2-4) Experience in original research designed and undertaken by the student under faculty supervision. AID 197 represents advanced work supported by prior study in one or more courses in the area of the research, including research methodology or equivalent preparation.

AID 97H, 197H. Honors Independent Research (1-4, 1-4) Research experience open to students in College of the Pacific honors program. Emphasizes independent research effort which is designed and undertaken by the student as an integrated part of an honors study program. AID 197H represents advanced work supported by prior or concurrent study in one or more courses in the area of the research, including research methodology or equivalent preparation.

AID 151. Late Life (4) This course is designed to study late life. It studies the over-65 segment of the population from the perspective of the full life cycle rather than simply looking at the aged per se. Major efforts of the course are the following: 1) to examine the interaction of social and psychological perspectives, with particular attention to the impact of social structure upon psychological structure; 2) to separate developmental factors from historical factors; 3) to plot the course of normal aging as opposed to reading features of the frail elderly onto all the aged; and 4) to determine factors that can enhance life in old age.

AID 183. Internship Workshop (2) A reflective interaction and assessment of the experiences of living and working in the nation's capital. Attention will also be given to Sociology of Work and Leisure, Public Service Theory and Practice and Organizational Theory. Open only to persons previously enrolled in the Washington Center Internship Program.

Center for Integrated Studies

Director: Dash
Professors: Orpinela, Reinelt

The Center for Integrated Studies fosters and supports a variety of interdisciplinary programs relevant to the changing social, cultural and technological conditions facing today's world. The courses listed below form part of the cur-

Cross-Disciplinary Majors

The College of the Pacific offers a variety of cross-disciplinary majors in which two areas of study are combined, such as political economy and mathematics-economics. The College also offers multidisciplinary majors such as liberal studies and human development which draw upon the resources of several departments and programs. The cross-disciplinary programs are directed by faculty members from the co-operating departments. Students interested in one of the following programs should contact the directors of the program-listed below for specific information.

Cross-Disciplinary Bachelor of Science

Students may enroll in a properly designated cross-disciplinary Bachelor of Science degree program involving the Departments of Biological Sciences, Chemistry, Geology and Geography, Mathematics and Physics. This program permits the student to develop an integrated major from courses in any of the two cooperating departments. Under this program, students plan their own major program with the departmental adviser to include courses in that department and in another department. The chairperson or an appointed faculty member in the second department serves as an adviser to students in the design of their programs.

Applied Mathematics - Physics Major

Directors: Roland di Franco and Carl Wulfman

The Departments of Mathematics and Physics offer an inter-disciplinary major in Applied Mathematics-Physics leading to a Bachelor of Science degree. Problem solving using the computer may be integrated into the program. Approval of both departments is required for admission to the major.

The program is intended to prepare students for graduate study and to meet the growing need for people with a solid knowledge of applied mathematics at the bachelor's degree level. Students may prepare themselves to go directly into industrial and government positions. Alternatively, they may prepare for graduate work in mathematics or physics or in a number of disciplines that depend heavily upon applied mathematics.

The major consists of fifteen courses, eight in mathematics and seven in physics. The major courses in mathematics include: AMA 51, 53, 55-Calculus I, II, III, AMA 57-Ordinary Differential Equations, AMA 110-Numerical Analysis, AMA 140-Linear Algebra, AMA 151-Vector Analysis and AMA 153-Mathematical Methods in the Physical Sciences. The major courses in physics include: APS 53, 55-

Principles of Physics (2 semesters), APS 101-Electricity and Magnetism, APS 111-Atomic Physics, APS 181-Theoretical Mechanics, and APS 183-Theoretical Physics or a Physics elective, plus one course from APS 161-Thermal Physics, APS 204-Statistical Mechanics or APS 211-Quantum Mechanics. Recommended courses include: AMA 155-Introduction to Real Analysis and AMA 143-Abstract Algebra from mathematics. Only courses passed with a grade of "C-" or better meet program requirements. The same grade requirement is applied in evaluating specified prerequisite courses.

Chemistry - Biology Major

Directors: P. Richmond (Biology) and M. Minch (Chemistry)

The Departments of Biological Sciences and Chemistry offer an interdepartmental program leading to the Bachelor of Science degree. This major is recommended for students interested in graduate work in cellular and molecular biology and biological chemistry. It is also tailored to meet the needs of students considering a career in biomedical research. The major consists of seven courses in biology including the following: Principles of Biology (ABS 51, 61), Genetics (ABS 101), Ecology (ABS 175) or Evolution (ABS 179), and three electives (excluding ABS 191 and ABS 197). The major also requires seven courses in chemistry including the following: General Chemistry (ACH 25, 27), Organic Chemistry (ACH 121, 123), Physical Chemistry (ACH 161 or ACH 169), and two electives (excluding ACH 191 and ACH 197). A year of physics (APS 23, 25 or APS 53, 55) and a year of calculus are also required. Experience in research (ABS 197 or ACH 197) is recommended.

Geophysics Major

Directors: J. Curtis Kramer and Richard L. Perry

The Department of Physics and the Department of Geology and Geography offer an interdepartmental program in solid earth geophysics leading to the Bachelor of Science degree. This major prepares students for graduate studies in geophysics or for a career in exploration geophysics. The major consists of six courses in physics, including the following: APS 53, 55-Principles of Physics (two semesters), APS 101-Electricity and Magnetism, APS 111-Atomic Physics, APS 161-Thermal Physics, and APS 181-Theoretical Mechanics. The candidate must complete five courses in geology: AGE 83-Physical Geology, AGE 101-Mineralogy, AGE 110-Petrology, AGE 140-Structural Geology, and AGE 161-Geologic Field Methods. In addition, the student must complete the following courses in other departments and schools: four semesters of Calculus (AMA 51, 53, 55, 57), AMA 37-Probability and Statistics, ACH 25, 27-General Chemistry (two

semesters), GCE 130-Fluid Mechanics I and one semester of computer programming.

Liberal Studies Major

Director: Roy C. Bergstrom

The Liberal Studies major is designed for students seeking a diversified major program, and includes a breadth requirement and a disciplinary or interdisciplinary concentration.

The Liberal Studies major requires a minimum of twenty-two courses and eighty units. Contact the Liberal Studies adviser in the College of the Pacific Dean's Office for information on courses which meet the following requirements.

Language Arts (five courses, minimum 18 units)

1. a course in composition
2. a course in literary analysis
3. a course in language and language acquisition
4. a course in communication
5. a language arts elective

Mathematics/Science (four courses, minimum 16 units)

6. a course in college mathematics
7. a course in life science
8. a course in physical science
9. a mathematics/science elective

Humanities/Social Studies (six courses, minimum 21 units)

10. a course in the development of civilization
11. a course in American history and institutions
12. a course in global/intercultural/gender studies
13. a course in multicultural/ethnic/gender studies
14. a humanities elective
15. a humanities/social science elective

Performing Arts (three courses, minimum 11 units)

16. a course in visual arts
17. a course in music
18. a course in performing arts

Human Development (one course, minimum 3 units)

19. a course in human development

Concentration (three or four courses, minimum 11 units)

- 20, 21, 22, (23). three or four additional courses.

Linguistics Major

Director: Robert Cox

Courses applicable to the linguistics major are offered by several departments in the College and by the School of Education. The major prepares students for graduate work in one of the several areas of linguistics or provides additional preparation for graduate study in anthropology, communication, education, foreign languages or English language teaching. Students who major in linguistics usually also

complete a second major in an allied discipline. The linguistics major consists of a minimum of eight courses and must include an introduction to general linguistics, courses in both phonology and syntax and a senior thesis. Additional courses to complete the major may be taken in anthropology, psycholinguistics, sociolinguistics, computer science, mathematical logic, logic, semantics, syntactical, morphological and phonological analysis of particular languages, historical and comparative linguistics and communicative disorders. The student, the faculty adviser and the director of the program will decide which additional courses would best meet the student's particular needs. At least an intermediate level proficiency in a second language must be demonstrated.

Mathematics-Economics Major

Directors: Walter Zimmermann and Peter Meyer

The Departments of Mathematics and Economics offer an inter-departmental program leading to a Bachelor of Science degree. The program is designed for students preparing for graduate studies in quantitative economics, management science or business administration or wishing to enter industry or government in some area of quantitative decision-making. See departmental listings.

Medicinal Chemistry Major

Director: Charles Matuszak

The Bachelor of Science in Medicinal Chemistry is offered with the cooperation and support of the School of Pharmacy and is designed to prepare the student for employment in the pharmaceutical industry or for graduate studies in health science and related fields.

Required are two semesters each of calculus, physics (preferably calculus based), general chemistry, organic chemistry, general biology, physiology, pharmacology, medicinal chemistry and one semester each of biochemistry, analytical chemistry, physical chemistry and microbiology. Additional physical chemistry courses are suggested. In addition, students are required to take the two semesters each of human physiology and anatomy, pharmacology-toxicology and medicinal chemistry in the School of Pharmacy. Transfer students are reminded that both the COP general education requirements and departmental requirement of a minimum of four COP chemistry courses must be met for all COP chemistry degrees.

Music Major (B.A.)

Co-Directors: Roy C. Bergstrom, Associate Dean, College of the Pacific; Carl E. Nosse, Dean, Conservatory of Music

In cooperation with the Conservatory of Music, students within the College of the Pacific may complete a Bachelor of Arts degree with a major in music. The major in music requires a

minimum of 44 units in music. The total number of music units counted toward the Bachelor of Arts may not exceed 60. Bachelor of Arts majors must complete eight units in applied music and five to six units in ensembles. All music courses must be approved by the music adviser in the Conservatory of Music. For additional information, please see the Conservatory of Music section within this catalog.

Political Economy Major

Co-Directors: Michael Hatch, Peter Meyer

The Political Economy major provides the student with a selection of courses which will enable him or her to analyze and evaluate the interrelationships which exist between the disciplines of political science and economics, and thus, to become acquainted with the possible as well as the ideal solutions to problems involving both the economic and political processes. Although the major will include areas in both economic and political theory, its primary emphasis will be on courses in which the student can observe how the policy recommendations of the theory must be tempered by the political and economic realities of the society within which individuals function.

See departmental listings for specific major course requirements.

Pre-Dance Therapy Major

Director: Chairperson, Drama and Dance

The Pre-Dance Therapy major is designed to prepare students for graduate study in dance therapy. Since graduate-level study requires training in the fields of dance (technique and theory), psychology, communication and human biology, courses from among these disciplines are required in the major. Required dance courses include: ADR 12-Expression Through Movement, ADR 121- Dance Improvisation and Choreography, ADR 189e-Practicum: Dance Therapy, ADR 197-Independent Research: Senior Project and courses totaling ten units in dance technique (ADR 13, 23 and 123).

Suggested technique schedule: Beginning Ballet I and II, Int./Adv. Modern, and beginning Jazz or Tap. As necessary for graduate study in Dance Therapy, emphasis is placed on Modern Dance.

Other required courses include: APY 111-Abnormal Psychology, ABS 11-Human Anatomy and Physiology and ETH 11-Introduction to Creative Arts Therapy.

Production requirements: completion of production assignments on a minimum of eight Departmental productions throughout four years. Junior transfers must participate in a minimum of four Departmental productions. Participation includes both technical theatre and performance requirements.

Strongly recommended optional courses include: ADR 189f-Practicum in Theatre and

Dance: Pedagogy, AMA 35-Elementary Statistical Inference, APY 105-Experimental Psychology, APY 129-Developmental Psychology, ADR 41-Technical Theatre, ADR 43-Stage Costume.

Pre-Dance Therapy students will receive careful advising in the Drama and Dance Department.

Pre-Law Major

Director: Wallace F. Caldwell

For students interested in an inter-disciplinary approach to pre-law, the Department of Political Science administers an optional Pre-Law major which is designed to prepare students for admission to accredited law schools. The four-year program consists of twelve courses, or equivalents, from the offerings of various departments of the College of the Pacific. A Pre-Law major is also expected to develop a concentration of at least five courses in one of the following disciplines: economics, history, political science, psychology, communication, English, philosophy, business and public administration or sociology.

A three-year matching degree option with McGeorge Law School is provided for a limited number of students who meet qualifications. Students under this option transfer to McGeorge Law School after completing their junior undergraduate year and receive a bachelor's degree from the College of the Pacific upon successful completion of the first year of law school.

Pre-Ministerial Major

Director: Gilbert Schedler

An undergraduate major for pre-seminary students leading to a Bachelor of Arts degree, the Pre-Ministerial major requires a broad general education and some depth of concentration in one or more areas. The major requires four courses from religious studies and one course from each of the following: political science, history, literature (may be in English or in a foreign language), philosophy, psychology, sociology and either a natural science or a philosophy of science course. In addition, there must be a concentration of five courses in one of the above areas. Competence in a foreign language is highly recommended.

Pre-Physical Therapy Program

Advisers: Gary Howells (Psychology), F. M. Nahhas (Biology), Margaret Ciccolella (Sports Medicine)

The following courses are suggested as only a minimum preparation for an entry-level master's degree program in physical therapy: one year of general chemistry; a one-semester or one-year sequence in general biology; one year of general physics; one semester each of human anatomy, human physiology, abnormal psychology and English composition. Areas

which are required or strongly recommended for admission to some physical therapy programs include organic chemistry; sociology; statistics; oral communication; an introduction to computer science; community and public health, including health agencies and communicable diseases; and an additional course in psychology. The latter three courses are required for the University of the Pacific master's program. All courses in the physical and life sciences must include laboratories.

Social Policy and Urban Affairs Major

Director: Roy Childs

Social Policy and Urban Affairs is an interdisciplinary program applying social science knowledge and methods to the study of contemporary social problems. The program introduces students to many of the social, political, economic, and ethical issues involved in the solution of social problems. Special attention is given to social policies related to areas such as citizen participation, social inequality, occupations and employment, the community and the family.

The Social Policy and Urban Affairs program is useful for students interested in careers in social service, urban and regional planning, law, politics, criminal justice and public administration.

The Social Policy and Urban Affairs program consists of a core of eight courses and a concentration (four courses) in one of the following areas: community planning and development, organizations, social services or urban studies. The core program begins with an orientation course: Social Problems and Policy (ASO 61); three courses providing background in economics and social research methods; an additional course in ethics and human values; an internship or practicum; and a capstone experience focusing on a specific policy/problem area.

Major Programs for Students Seeking a Teaching Credential

A student in the College of the Pacific seeking a Single Subject (SS) preliminary credential through the University of the Pacific must complete: a major program leading to a baccalaureate degree; subject matter credential requirements specified by the University or passage of a state examination; a course or successful test on the Constitution of the United States; and specified professional preparation courses offered by the School of Education. Recent California law requires success on the California Basic Educational Skills Test (CBEST) before receipt of the first teaching credential. See the section on the School of Education in this catalog for information on CBEST. Students seeking entry into Teacher Education Credential Candidacy need a minimum GPA of 2.50.

A COP student seeking a credential may complete any major program. However, the College offers a variety of baccalaureate degree programs which fulfill the degree requirements and the subject matter credential requirements simultaneously.

Required professional coursework and its prerequisites are:

- | | |
|---|----------|
| 1. Prerequisites | Units |
| FEG 87-Fieldwork |(2) |
| FEG 105-Foundations for Teaching |(3) |
| 2. Professional Coursework | |
| Multiple Subjects | |
| FEP 121-Learning and the Learner |(3) |
| FEI 131-Curriculum and Instruction Social Studies (MS) |(3) |
| FEI 133-Curriculum and Instruction Math/Science (MS) |(3) |
| FEI 135-Reading/Language Arts Development (MS) |(3) |
| FEI 158-Directed Teaching (MS) |(14) |
| FEI 195b-Seminar: Directed Teaching |(2) |
| Single Subject | |
| FEP 121-Learning and the Learner |(3) |
| FEI 171-Curriculum and Instruction Organization, Planning and Evaluation (SS) |(3) |
| FEI 173-Curriculum and Instruction: Instructional Methodology (SS) |(3) |
| FEI 175-Reading/Language Arts Development (SS) |(3) |
| FEI 178-Directed Teaching (SS) |(14) |
| FEI 195b-Seminar: Directed Teaching |(2) |

See the section on the School of Education in this catalog for additional details on these courses and the subject matter credential requirements specified by the University.

The following major programs in the College of the Pacific are recommended for students seeking a teaching credential.

Major Programs for Single Subject Credential

Details of credential programs may be obtained from the credential secretary counter in the lobby of the School of Education.

Single Subject Area	Recommended Major Program
Art	Art (B.A.) Studio Art (B.F.A.) Graphic Design (B.F.A.)
English	English (B.A.) Drama (B.A.) Communication (B.A.)
Foreign Languages	French (B.A.) German (B.A.) Japanese (B.A.) Spanish (B.A.)
Life Sciences	Life Sciences (B.A.) Biology (B.S.)
Mathematics	Mathematics (B.A.)
Music	Music Education (B.M.) in the Conservatory

Physical Education	Physical Education (B.A.)
Physical Sciences	Physical Sciences (B.A.) Chemistry (B.A.) Geology (B.A.) Physics (B.A.)
Social Science	Social Science (B.A.) History (B.A.)

The department major programs recommended for the Single Subject areas are described in the departmental sections of this catalog. The cross-disciplinary programs recommended for the Single Subject credential areas are described below.

Life Sciences Major (B.A.)

A student desiring a single-subject teaching credential may elect a course of study leading to a B.A. in Life Sciences. The common requirement, at least 30 units in biology, physiology, ecology, botany, marine biology and zoology, can be met by taking the following pattern of courses: Biology (three courses: Principles of Biology [ABS 51, 61], Genetics [ABS 101]); Physiology (one course chosen from Human Anatomy and Physiology [ABS 11] or Human Physiology [ABS 81]); Ecology (one course chosen from Environmental Problems and Perspectives [ABS 35], Natural Environments of California [ABS 110] or Ecology [ABS 175]); Botany (one course chosen from Plant Kingdom [ABS 130] or California Flora [ABS 135]); Marine Biology (one course chosen from Marine Biology [ABS 76] or Marine Birds and Mammals [ABS 122]); Zoology (one course chosen from Biology of Insects [ABS 74] or Vertebrate Biology [ABS 172]). In addition the student must meet a breadth requirement consisting of at least 20 units chosen with the approval of a faculty Life Sciences adviser and including a minimum of 15 units of General Chemistry, General Physics and Geology (AGE 83 or above), and additional units from the following areas to bring the total to at least 20 units: Chemistry (General Chemistry or above), Physics (General Physics or above), Geology (AGE 83 or above), Physical Geography, Mathematics (at the level of AMA 31 or above).

Physical Sciences Major (B.A.)

A student desiring a single subject teaching credential may elect a course of study leading to a B.A. in Physical Sciences. The common requirement, at least 30 units in chemistry, physics and earth science, may be met by taking the following pattern of courses. **Chemistry:** three courses, including General Chemistry (ACH 25 and 27) and Organic (ACH 121 or 135). **Physics:** two courses, Principles of Physics (APS 53 and 55). **Earth Science:** two courses, including Physical Geology (AGE 83) and Physical Geography (AGE 99). **Concentration:** four additional courses in one of the above. In addition, students must take 15 units of breadth requirements from the following.

Calculus: two courses (AMA 51 and 53). **Computer math or computer science:** one course (ACS 11). **Biology:** one course (ABS 51). Please see the College of the Pacific Physical Sciences adviser for a list of specific course recommendations for all courses required for the major.

Social Sciences Major (B.A.)

A minimum of 48 semester units, distributed as follows. **History:** six courses, including one course in California history, two courses in the history of Western Civilization, two courses in U.S. history and one course in the history of a non-U.S., non-European country or region. **Political Science:** three courses, including one course in U.S. national government, one course in U.S. state and local government and one course dealing with either a) comparative politics and government, b) politics and government of a foreign country or c) international relations. **Sociology:** two courses, including one course dealing with the basic concepts of Sociology and one course dealing with either a) structural analysis, b) social psychological analysis or c) cultural anthropology. **Economics:** one introductory course. **Geography:** one course in world geography. **Quantitative methods:** one course, selected with the approval of the Social Science adviser. Please see the College of the Pacific Social Science adviser for a list of specific course recommendations for all courses required for the major.

Programs in the Pre-Health Professions*

F. M. Nahhas (Biology), Chair
Pre-Health Professions Committee

Pre-medical, pre-dental, pre-physical therapy, pre-nursing and medical technology students may major in any academic subject they prefer as long as they also fulfill the entrance requirements for the medical, dental, nursing schools, medical technology or physical therapy programs to which they plan to apply.

The University does not list a premedical, pre-dental, pre-physical therapy or pre-nursing major. A student in any of these programs must declare an academic major prior to graduation in order to be a candidate for a baccalaureate degree in the College of the Pacific.

Details of these and other majors appear in this catalog under the section describing the departmental majors and cross-disciplinary majors of the College of the Pacific.

Pre-Medical Program*

Advisers: M. Minch (Chemistry), P. Richmond (Biology)

The following courses are suggested as only a minimum preparation for medical school: one year of general chemistry; one year of organic chemistry; one year of beginning biology plus an additional three to five courses in biology;

one year of physics; one semester of calculus; and additional coursework in English, behavioral and social sciences and humanities.

Pre-Dental Program*

Advisers: L. Christianson (Biology), K. Chaubal (Biology), L. Spreer (Chemistry)

The following courses are suggested as only a minimum preparation for dental school: one year of general chemistry; one semester of organic chemistry; one year of general biology; one year of general physics; and one year of English including both literature and composition.

Honors Pre-Dental Programs

Advisers: L. Spreer (Chemistry), Roy Bergstrom (Associate Dean)

In conjunction with the UOP School of Dentistry in San Francisco, the College offers two honors pre-dental programs. In the **Five-Year Program** qualified students may meet the pre-dental requirements on the Stockton campus in two years and then complete the accelerated 36-month curriculum at the UOP Dental School to obtain a D.D.S. degree in five years. In the **Six-Year Program** qualified students may complete pre-dental and general education requirements on the Stockton campus in three years and then complete the accelerated 36-month program at the UOP Dental School. Based on science courses completed during the first year of Dental School, students receive a baccalaureate degree; the D.D.S. degree is then awarded at the end of the third year of Dental School.

Pre-Nursing Program

Adviser: F. M. Nahhas (Biology)

The following courses are suggested as only a minimum preparation for nursing school: one year of general chemistry; organic chemistry (required by a few nursing schools); one semester of animal biology; microbiology; nutrition; human anatomy; human physiology; two semesters of psychology; one course each in English composition and literature; and one sociology course.

Medical Technology Program

Adviser: F. M. Nahhas (Biology)

The following courses are suggested for students planning to enter a training program in medical technology: one year of general biology and the following biology courses: human physiology, genetics, animal histology, microbiology, medical microbiology, parasitology, immunology and serology and a course in hematology; one year of general chemistry; one year of organic chemistry; one semester of analytical chemistry; one semester of biochemistry; one year of physics and a course in mathematics, preferably statistics.

Publications on Admissions Requirements

Medical School Requirements, USA and Canada, Association of American Medical Schools, One Dupont Circle NW, Washington, D.C. 20036. **Admission Requirements of U.S. and Canadian Dental Schools**, American Association of Dental Schools, 1619 Massachusetts Avenue, N.W., Washington, D.C. 20036.

*Correspondence regarding the Pre-Dental Program should be directed to L. Christianson, Department of Biological Sciences. Correspondence regarding the Pre-Medical Program should be directed to P. Richmond, Department of Biological Sciences. Correspondence regarding the other programs in the Pre-Health Professions should be directed to F. M. Nahhas, Department of Biological Sciences.

College of the Pacific Faculty

Dean Robert R. Benedetti
Associate Dean Roy C. Bergstrom
Assistant Dean B. Jan Timmons

Art

Gilbert Dellinger, 1973, Professor and Chair, B.A., California State University, Hayward, 1971; M.A., California State University, San Francisco, 1972.

Barbara Flaherty, 1988, Assistant Professor, B.F.A., Hamline University, 1962; M.A., University of California, Davis, 1966.

Dick Kakuda, 1983, Professor, B.A., San Jose State University, 1969; M.A., 1971.

Daniel Kasser, 1984, Associate Professor, B.A., Humboldt State University, 1980; M.A., University of New Mexico, 1984.

J. Ronald Pecchenino, 1970, Professor, B.A., College of the Pacific, 1956; M.F.A., California College of Arts and Crafts, 1969.

Merrill Schleier, 1982, Associate Professor, B.A., The City College of New York, 1973; M.A., University of California, Berkeley, 1976; Ph.D., 1983.

Ray VarnBuhler, 1980, Professor, B.F.A., Wayne State University, 1960; M.F.A., Art Institute of Chicago, 1965.

Biological Sciences

Lee Christianson, 1967, Professor and Chair, B.S., University of North Dakota, 1963; M.A., Southern Illinois University, 1965; Ph.D., University of Arizona, 1967.

Steven C. Anderson, 1970, Professor, B.A., University of California, Riverside, 1957; M.A., San Francisco State College, 1961; Ph.D., Stanford University, 1966.

Kishori Chaubal, 1972, Assistant Professor, B.S., Poona University, 1954; B.T., 1959; M.S., University of the Pacific, 1970; Pharm.D., 1977.

Alice S. Hunter, 1970, Professor, B.S., Queens College, New York, 1944; M.S., Columbia University, 1946; Ph.D., 1951.

Dale W. McNeal, 1969, Professor, B.A., Colorado College, 1962; M.S., New York State College of Forestry at Syracuse University, 1964; Ph.D., Washington State University, 1969.

Fuad M. Nahhas, 1964, Professor, B.A., College of the Pacific, 1958; M.A., 1960; Ph.D., Purdue University, 1963.

Paul A. Richmond, 1979, Professor, B.A., University of Minnesota, 1966; Ph.D., University of Pennsylvania, 1977.

Richard Tenaza, 1975, Professor, B.A., San Francisco State College, 1964; Ph.D., University of California, Davis, 1974.

Chemistry

Michael J. Minch, 1974, Professor and Chair, B.S., Oregon State University, 1965; Ph.D., University of Washington, 1970.

Richard P. Dodge, 1964, Professor, B.S., University of Wichita, 1954; Ph.D., University of California, Berkeley, 1958.

Paul H. Gross, 1966, Professor, B.A., Freie University (Germany), 1955; M.A., 1958; Ph.D., 1961.

Patrick R. Jones, 1974, Professor, B.A., University of Texas, 1966; B.S., 1966; Ph.D., Stanford University, 1971.

Charles A. Matuszak, 1963, Professor, B.S., University of Oklahoma, 1952; M.S., 1953; Ph.D., Ohio State University, 1957.

Silvio Rodriguez, 1978, Professor, M.S., University of California, Santa Barbara, 1970; Ph.D., 1978.

Larry O. Spreer, 1970, Professor, B.S., University of Kansas, 1965; Ph.D., University of Colorado, 1969.

Donald K. Wedegaertner, 1963, Professor, B.S., University of California, Berkeley, 1958; Ph.D., University of Illinois, 1962.

Roy A. Whiteker, 1976, Professor, B.S., University of California, Los Angeles, 1950; M.S., 1951; Ph.D., California Institute of Technology, 1956.

Classics

Martha W. Bowsky, 1984, Associate Professor and Chair, B.A., University of North Carolina, 1972; M.A., 1974; Ph.D., University of Michigan, 1983.

Lynn Krainak, 1987, Assistant Professor, B.A., University of California, Berkeley, 1973; M.A., 1976; Ph.D., 1984.

Communication

Kenneth D. Day, 1987, Associate Professor and Chair, B.S., Indiana University, 1970; M.A., 1975; M.S., 1976; Ph.D., 1980.

Kent R. Colbert, Sr., 1989, Associate Professor, B.S., Florida State University, 1977; M.S., 1980; Ph.D., 1986.

Donald F. Duns, 1961, Professor and Dean, University College and Lifelong Learning, B.A., College of the Pacific, 1958; M.A., Northwestern University, 1959; Ph.D., 1961.

Victoria Goff, 1989, Assistant Professor, B.A., George Washington University, 1967; M.A., California State University, Los Angeles, 1972.

Carol Ann Hall, 1985, Associate Professor, B.A., California State University, Sacramento, 1961; M.A., The Ohio State University, 1984; Ph.D., 1985.

Randall J. Koper, 1985, Associate Professor, B.A., Michigan State University, 1974; M.A., 1984; Ph.D. 1985.

Linda L. Nolan, 1985, Associate Professor, B.A., The Ohio State University, 1980; M.A., 1982; Ph.D., 1985.

R. Alan Ray, 1987, Assistant Professor, B.S., Memphis State University, 1977; M.A., 1980; Ph.D., University of Missouri, 1986.

Jon F. Schamber, 1980, Professor, B.A., University of the Pacific, 1974; M.A., 1975; Ph.D., University of Oregon, 1982.

B. Jan Timmons, 1971, Professor, B.A., University of Northern Iowa, 1951; M.A., University of Kansas, 1962; Ph.D., 1965.

Communicative Disorders

Virginia L. Puich, 1969, Associate Professor and Chair, B.A., San Diego State University, 1952; M.S., University of Oregon, 1957.

Rachel Cole, 1990, Clinic Supervisor, B.A., University of the Pacific, 1981; M.A., University of the Pacific, 1982.

Paul T. Fogle, 1979, Associate Professor, B.A., California State University, Long Beach, 1970; M.A., 1971; Ph.D., University of Iowa, 1976.

Robert E. Hanyak, 1985, Associate Professor, B.A., University of the Pacific, 1979; M.S., University of Utah, 1981.

Janet Nantz, 1988, Clinic Supervisor, B.A., University of California, Berkeley, 1966; M.A., University of the Pacific, 1985.

Celeste Roseberry-McKibbin, 1991, Assistant Professor, B.A., California State University, Fresno, 1980; M.A., California State University, Fullerton, 1982; Ph.D., Northwestern University, 1987.

Simalee Smith, 1983, Assistant Professor, B.S., University of Wyoming, 1976; M.A., University of the Pacific, 1982.

Computer Science

Douglas B. Smith, 1970, Professor and Chair, B.S., University of Washington, 1964; M.A.T., Harvard University, 1965; Ph.D., University of Washington, 1970.

William H. Ford, 1974, Professor, B.S., Massachusetts Institute of Technology, 1967; Ph.D., University of Illinois, 1972.

Joseph L. Ibrahim, 1990, Assistant Professor, B.A., Houghton College, 1977; M.S., Lehigh University, 1981; Ph.D., 1988.

Charles E. Neilsen, 1986, Assistant Professor, B.S., University of the Pacific, 1982; M.S.S.M., University of Southern California, 1985.

William R. Topp, 1970, Professor, B.A., St. Louis University, 1963; M.A., 1964; M.S., University of Washington, 1967; Ph.D., 1968.

Drama and Dance

Sandra L. Persels, 1976, Professor and Chair, B.S.E., Emporia State University, 1967; M.S., 1968.

Scott Eckern, 1986, Assistant Professor, B.A., University of California, Santa Barbara, 1980; M.F.A., Brigham Young University, 1983.

Darrell C. Persels, 1965, Professor, B.A., Simpson College, 1956; M.A., California State University, Sacramento, 1963.

William J. Wolak, 1975, Professor, B.S., Central Connecticut State College, 1959; M.A., St. Louis University, 1961; Ph.D., Tulane University, 1967.

Economics

Peter J. Meyer, 1985, Associate Professor and Chair, A.B., Harvard University, 1972; Ph.D., University of California, Berkeley, 1979.

John P. Carew, 1967, Professor, B.A., Southern Illinois State University, 1958; M.A., Stanford University, 1959; Ph.D., University of California, Berkeley, 1969.

Dennis O. Flynn, 1979, Professor, B.S., University of Nevada, 1968; M.S., 1972; Ph.D., University of Utah, 1977.

William E. Herrin, 1985, Associate Professor, B.S., Wilkes College, 1980; M.A., State University of New York, Binghamton, 1982; Ph.D., 1985.

David E. Keefe, 1978, Associate Professor, B.S., Cornell University, 1965; Ph.D., University of California, Berkeley, 1980.

Timothy P. Opiela, 1986, Assistant Professor, B.A., California State University, Sacramento, 1982; Ph.D., Texas A&M University, 1987.

Lori D. Warner, 1987, Assistant Professor, B.S., University of Nevada, Reno, 1975; Ph.D., University of Utah, 1986.

English

John D. Smith, 1970, Professor and Chair, B.A., University of Kansas, 1956; M.A., 1963; Ph.D., University of Wisconsin, 1968.

Diane M. Borden, 1971, Professor, B.A., Lone Mountain College, 1964; M.A., San Francisco State College, 1966; Ph.D., University of California, Santa Cruz, 1971.

Robert S. Cox, 1971, Professor, B.A., Northern Arizona University, 1959; Ph.D., Indiana University, 1965.

Arlen J. Hansen, 1969, Professor, B.S., Iowa State University, 1958; M.A., University of Iowa, 1962; Ph.D., 1969.

Robert T. Knighton, 1967, Professor, B.S., Utah State University, 1961; M.S., 1962; Ph.D., University of Colorado, 1972.

Reinhart Lutz, 1991, Assistant Professor, B.A., Free University of Berlin, 1983; M.A., University of California, Santa Barbara, 1985; Ph.D., University of California, Santa Barbara, 1991.

Heather J. Mayne, 1988, Assistant Professor, B.A., Oakwood College, 1982; M.A., Loma Linda University, 1984.

Maurice L. McCullen, 1970, Professor, B.S., Iowa State University, 1957; M.A., Purdue University, 1961; Ph.D., University of Colorado, 1966.

Roger Mueller, 1969, Professor, B.A., Macalester College, 1957; M.A., University of Minnesota, 1965; Ph.D., 1968.

Gilbert W. Schedler, 1967, Professor, B.A., Concordia College, 1957; B.D., Concordia Seminary, 1960; M.A., Washington University, 1963; Ph.D., University of Chicago, 1970.

John E. Seaman, 1969, Professor, B.A., Princeton University, 1954; M.A., Stanford University, 1959; Ph.D., 1962.

Douglas Tedards, 1982, Associate Professor, B.A., Vanderbilt University, 1966; M.A., University of Florida, 1969; D.A., University of the Pacific, 1976.

John S. Williams, 1965, Professor, B.A., Cornell College, 1958; M.A., University of Chicago, 1961, Theology; M.A., 1964, English; Ph.D., 1968.

Geology and Geography

Eugene Pearson, 1971, Professor and Chair, B.A., Pomona College, 1967; Ph.D., University of Wyoming, 1972.

Roger Barnett, 1965, Professor, B.A., Cambridge University, 1960; M.A., 1964; M.A., University of California, Berkeley, 1965; Ph.D., 1973.

Lydia K. Fox, 1990, Assistant Professor, B.S.E., Princeton University, 1981; Ph.D., University of California, Santa Barbara, 1989.

J. Curtis Kramer, 1975, Professor, B.S., University of California, Davis, 1968; Ph.D., 1976.

History

George P. Blum, 1962, Professor and Chair, B.A., Hamline University, 1956; M.A., University of Minnesota, 1958; Ph.D., 1962.

William H. Brennan, 1976, Associate Professor, B.A., California State University, Chico, 1966; M.A., University of California, Santa Barbara, 1967; Ph.D., University of Oregon, 1971.

Erling A. Erickson, 1969, Professor, B.A., Luther College, 1958; M.A., University of North Dakota, 1959; Ph.D., University of Iowa, 1967.

Donald H. Grubbs, 1963, Professor, B.A., University of Florida, 1958; M.A., 1959; Ph.D., 1963.

Paul J. Hauben, 1969, Professor, B.A., Brooklyn College, 1958; Ph.D., Princeton University, 1963.

Ronald H. Limbaugh, 1966, Professor, B.A., College of Idaho, 1960; M.A., University of Idaho, 1962; Ph.D., 1967.

Sally M. Miller, 1967, Professor, B.A., University of Illinois, 1958; M.A., University of Chicago, 1963; Ph.D., University of Toronto, 1966.

Reuben W. Smith III, 1972, Associate Professor and Dean, Graduate School, B.A., University of California, Berkeley, 1951; M.A., 1952; Ph.D., Harvard University, 1963.

Mathematics

Walter S. Zimmermann, 1970, Professor and Chair, B.A., University of California, Los Angeles, 1960; Ph.D., University of California, Berkeley, 1966.

Roy C. Bergstrom, 1980, Associate Professor and Associate Dean, College of the Pacific, B.A., Knox College, 1973; M.A., University of Illinois, 1975; Ph.D., 1980.

Deann J. Christianson, 1967, Assistant Professor, Director of Mathematics Resource Center, B.A., University of North Dakota, 1963; M.S., University of Arizona, 1967; Ed.D., University of the Pacific, 1983.

Roland B. di Franco, 1972, Professor, B.S., Fordham University, 1958; M.S., Rutgers University, 1960; Ph.D., Indiana University, 1965.

Vincent D. Panico, 1984, Associate Professor, B.S., University of Illinois, 1969; Ph.D., Northwestern University, 1978.

Dennis K. Parker, 1985, Associate Professor, B.S.E., University of Oklahoma, 1974; M.N.S., 1978; Ph.D., 1985.

Coburn C. Ward, 1977, Professor, B.A., University of California, Berkeley, 1965; M.S., University of Chicago, 1970; Ph.D., 1975.

Elaine M. Werner, 1985, Assistant Director, Mathematics Resource Center, B.A., Mankato State University, 1961.

Keith E. Whittington, 1987, Assistant Professor, B.S., University of California, Riverside, 1975; Ph.D., University of Texas, 1980.

Sarah J. Whittington, 1987, Lecturer, B.A., University of Texas, 1975; M.A., 1979.

Modern Language and Literature

Barbara Sayles, 1962, Associate Professor and Chair, B.A., MacMurray College, 1952; M.A., University of California, Los Angeles, 1956; Ph.D., 1960.

Robert W. Dash, 1964, Professor, B.A., Baldwin-Wallace College, 1961; M.A., Middlebury College, 1964; D.M.L., 1977.

Arturo Giraldez, 1990, Assistant Professor, B.A., Universidad Complutense de Madrid, 1976; M.A., 1979; Ph.D., University of California, Santa Barbara, 1990.

Paul A. Karpuk, 1987, Assistant Professor, B.A., Stanford University, 1976; M.A., Uni-

versity of California, Berkeley, 1979; Ph.D., 1987.

Janine Kreiter, 1959, Professor, B.A., Ohio State University, 1951; M.A., 1959; Doctorat 3^e Cycle, Université de Nice, 1970.

Robert A. Kreiter, 1960, Professor, B.A., Ohio State University, 1956; M.A., 1959; Ph.D., University of California, Berkeley, 1968.

Paul H. Krieger, 1989, Assistant Professor, B.A., University of Colorado, 1970; M.A., University of California, Santa Barbara, 1979; Ph.D., University of Minnesota, 1989.

Francis M. Sharp, 1979, Professor, B.A., University of Missouri, 1964; M.A., University of California, Berkeley, 1969; Ph.D., 1974.

Ted T. Takaya, 1979, Professor, B.A., Reed College, 1951; M.A., Columbia University, 1961; Ph.D., 1969.

Catherine Triantaphilides, 1979, Assistant Professor, B.A., Hunter College, 1968; M.A., 1970; Ph.D., City University of New York, 1977.

Philosophy

James D. Heffernan, 1972, Professor and Chair, B.A., Fordham University, 1964; M.A., 1967; Ph.D., University of Notre Dame, 1976.

Gwenneth L. Browne, 1968, Professor, B.A., Queens College, 1960; Ph.D., Columbia University, 1968.

Gerald J. Hewitt, 1969, Professor, B.A., University of Notre Dame, 1963; M.A., University of Chicago, 1966; Ph.D., 1973.

Robert Orpinela, 1970, Professor, B.A., University of Redlands, 1957; M.A., University of California, Berkeley, 1961; B.D., Berkeley Baptist Divinity School, 1964; Th.D., Graduate Theological Union, 1970.

Herbert R. Reinelt, 1962, Professor, B.A., University of Washington, 1951; B.D., Yale University, 1954; M.A., 1958; Ph.D., 1962.

Physics

Richard L. Perry, 1961, Professor and Chair, B.A., Linfield College, 1952; M.S., Oregon State College, 1955; Ph.D., 1961.

Joseph F. Alward, 1979, Assistant Professor, B.A., Sacramento State College, 1968; M.A., University of California, Davis, 1973; Ph.D., 1976.

Alex T. Granik, 1982, Associate Professor, M.S., Odessa Institute of Technology (USSR), 1961; Ph.D., University of Odessa (USSR), 1967.

Neil L. Lark, 1962, Professor, B.A., Chico State College, 1955; Ph.D., Cornell University, 1960.

Andres F. Rodriguez, 1964, Professor, D. of Science, Havana University (Cuba), 1955.

Carl E. Wulfman, 1961, Professor, B.S., University of Michigan, 1953; Ph.D., University of London, 1957.

Political Science

Wallace F. Caldwell, 1970, Professor and Chair, B.A., Washington State University, 1956; M.A., University of Washington, 1959; J.D., Humphreys College of Law, 1975; Ph.D., University of Washington, 1965.

Robert R. Benedetti, 1989, Professor and Dean, College of the Pacific, B.A., Amherst College, 1964; M.A., University of Pennsylvania, 1967; Ph.D., 1975.

Jerry B. Briscoe, 1964, Professor, B.S., Northwestern University, 1948; M.A., University of Chicago, 1949; Ph.D., 1954.

Lee C. Fennell, 1968, Professor, Registrar and Dean of Institutional Research, B.S., University of Florida, 1959; M.A., 1965; Ph.D., 1970.

Michael T. Hatch, 1985, Associate Professor, B.A., Utah State University, 1970; M.A., Johns Hopkins University, 1973; Ph.D., University of California, Berkeley, 1983.

Gerald J. Hewitt, 1969, Professor, B.A., University of Notre Dame, 1963; M.A., University of Chicago, 1966; Ph.D., 1973.

Brian E. Klunk, 1987, Assistant Professor, B.A., Pennsylvania State University, 1977; M.A., University of Virginia, 1980; Ph.D., 1985.

Larry L. Pippin, 1965, Professor, B.A., University of Wisconsin, 1951; M.A., 1952; Ph.D., Stanford University, 1965.

Cortlandt B. Smith, 1970, Professor, B.A., University of California, Berkeley, 1968; M.A., 1969; Ph.D., 1975.

Psychology

Kenneth L. Beauchamp, 1969, Professor and Chair, B.A., Whitman College, 1962; M.A., Claremont Graduate School, 1965; Ph.D., 1968.

Esther Cohen, 1979, Associate Professor, B.A., Boston University, 1973; M.A., University of the Pacific, 1975; Ph.D., University of Utah, 1979.

Martin T. Gipson, 1965, Professor, B.A., Chico State College, 1959; Ph.D., Vanderbilt University, 1968.

Roseann Hannon, 1970, Professor, B.S., Frostburg State College, 1965; M.S., Pennsylvania State University, 1967; Ph.D., University of South Dakota, 1970.

Gary N. Howells, 1971, Professor, B.A., Oregon State University, 1964; M.A., University of Utah, 1970; Ph.D., 1971.

Roger C. Katz, 1974, Professor, B.A., University of California, Berkeley, 1967; M.A., University of Utah, 1970; Ph.D., 1971.

Douglas W. Matheson, 1968, Professor, B.A., Whitman College, 1961; M.A., Claremont Graduate School, 1966; Ph.D., 1967.

Robert Orpinela, 1970, Professor, B.A., University of Redlands, 1957; M.A., University of California, Berkeley, 1961; B.D., Berkeley Baptist Divinity School, 1964; Th.D., Graduate Theological Union, 1970.

Religious Studies

Robert W. Blaney, 1966, Professor and Chair, B.A., University of California, Los Angeles, 1953; M.P.A., 1958; S.T.B., Boston University, 1959; Th.D., 1966.

Lawrence Meredith, 1966, Professor, B.A., Southwestern University, 1946; B.D., Perkins School of Theology, 1953; Ph.D., Harvard University, 1962.

Gilbert W. Schedler, 1967, Professor and Chair, B.A., Concordia College, 1957; B.D., Concordia Seminary, 1960; M.A., Washington University, 1963; Ph.D., University of Chicago, 1970.

Sociology and Anthropology

Harvey R. Williams, 1977, Professor and Chair, B.A., University of California, Berkeley, 1963; M.A., Vanderbilt University, 1970; Ph.D., 1977.

Roy Childs, 1973, Professor, B.S., University of Denver, 1963; M.B.A., 1964; M.A., Stanford University, 1970; Ph.D., 1973.

Longina Jakubowska, 1987, Assistant Professor, M.A., University of Warsaw, 1976; Ph.D., State University of New York, Stony Brook, 1985.

Bruce W. LaBrack, 1975, Professor, B.A., University of Arizona, 1967; M.A., 1969; M.Phil., Syracuse University, 1975; Ph.D., 1979.

George H. Lewis, 1970, Professor, B.A., Bowdoin College, 1965; M.A., University of Oregon, 1968; Ph.D., 1970.

John C. Phillips, 1976, Professor, B.A., San Jose State College, 1963; M.A., 1965; Ph.D., University of Oregon, 1974.

Deborah S. Rubin, 1989, Assistant Professor, B.A., Brown University, 1975; M.A., The Johns Hopkins University, 1985; Ph.D., 1986.

Sport Sciences

S. Thomas Stubbs, 1963, Associate Professor and Chair, and Associate Athletic Director, B.A., Ripon College, 1956; M.A., Ohio State University, 1957; Ed.D., University of Arkansas, 1978.

Glen R. Albaugh, 1971, Professor and Golf Coach, B.A., San Jose State College, 1954; M.A., 1960; Ph.D., University of Utah, 1970.

John B. Boelter, 1989, Associate Professor, B.A., University of Southern California, 1969; Ph.D., 1974.

Margaret E. Ciccolella, 1985, Associate Professor, B.S., University of Colorado, 1970; M.S., Brigham Young University, 1972; Ed.D., 1978.

Linda Koehler, 1989, Assistant Professor, B.A., Purdue University, 1971; M.S., University of New Mexico, 1975; Ph.D., University of Illinois, 1982.

Christopher Snell, 1990, Assistant Professor, B.A., Bedford College, England, 1987; M.S., University of Oregon, 1990.

J. Connor Sutton, 1963, Associate Professor,

B.A., University of the Pacific, 1961; M.A., 1964; Ph.D., University of Oregon, 1970.

Athletic Staff

Edward (Ted) Leland, 1989, Director of Athletics, B.A., University of the Pacific, 1970; M.A., 1973; Ph.D., Stanford University, 1982.

Tod Bannister, 1990, Assistant Men's Basketball Coach, B.A., California State University, 1986.

Scott Barnes, 1990, Executive Director, Pacific Athletic Foundation, B.A., Cal State Fresno, 1986; M.A., 1988.

Steve Bridges, 1990, Assistant Football Coach, B.A., San Diego State University, 1984; M.A., Azusa Pacific, 1985.

Scott Criner, 1989, Assistant Football Coach, B.A., Boise State University, 1983.

Melissa DeMarchi, 1988, Head Women's Basketball Coach, B.S., Kent State University, 1974; M.A., 1982.

Don Dunn, 1990, Assistant Football Coach, B.S., Eastern Tennessee State, 1976; M.A., Union College, 1980.

John Dunning, 1985, Head Volleyball Coach, B.A., San Diego State, 1972.

Jim Fenwick, 1990, Assistant Football Coach, B.A., Wichita State, 1970; M.A., Cal Lutheran, 1972.

Mary Harper, 1989, Assistant Softball Coach, B.A., University of the Pacific, 1988.

Walt H. Harris, 1989, Head Football Coach, B.A., University of the Pacific, 1968; M.A., 1969.

Kathleen Simpson Klein, 1975, Lecturer and Assistant Athletic Director, B.S., Rutgers University, 1968; M.S., University of North Carolina, 1972.

Carla Konet, 1979, Field Hockey Coach, Director of Intramurals and Coordinator of Women's Athletics, B.S., Valparaiso University, 1969; M.A., University of the Pacific, 1982.

J. Theresa Lowry, 1982, Head Softball Coach, B.A., University of the Pacific, 1982.

Tony Marcopulos, 1990, Assistant Men's Basketball Coach, B.S., Stanislaus State, 1987; M.A.T., University of the Pacific, 1990.

Bill Maze, 1990, Women's Tennis Coach, B.S., Stanford University, 1978; M.B.A., Golden Gate University, 1988.

John McBride, 1989, Strength and Conditioning Coach, B.S., Central Connecticut State, 1984.

Jayne McHugh, 1989, Assistant Women's Volleyball Coach, B.A., University of the Pacific, 1982.

William T. McQueary, 1978, Assistant Football Coach, B.A., San Francisco State University, 1969; M.A., 1971.

John Neal, 1989, Assistant Football Coach, B.S., Brigham Young University, 1980.

Quincey Noble, 1989, Head Baseball Coach, B.S., S. Dakota State, 1984; M.S., Ed., N.W. Missouri State University, 1986.

Chris Pond, 1990, Athletic Trainer, B.S.,

Utah State, 1988; M.S., University of Arizona, 1990.

John Shannon, 1989, Assistant Football Coach, B.S., Eastern Illinois University, 1976; M.A., Western Kentucky, 1977.

Dave Shoemaker, 1988, Assistant Basketball Coach, B.S., California State University, Fullerton, 1981; M.A., California State University, Stanislaus, 1988.

Stan Stolte, 1990, Assistant Baseball Coach, B.S., St. Ambrose University, 1985; M.S.Ed., N.W. Missouri State, 1987.

Jim Taketa, 1988, Head Women's Swimming Coach.

John E. Tanner, 1985, Aquatics Director, Head Men's Swimming Coach, Head Men's Waterpolo Coach, B.A., Stanford University, 1982.

Robert L. Thomason, 1988, Head Basketball Coach, B.A., University of the Pacific; 1971; M.A., 1985.

Sam Tilton, 1989, Head Women's Cross Country Coach, B.A., Azusa Pacific, 1984.

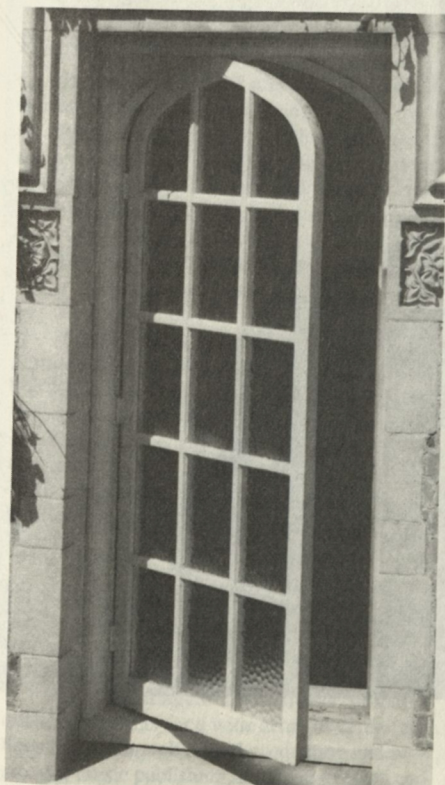
Dave Vande Pol, 1989, Head Men's Tennis Coach, B.A., Central College, 1981; Master of Divinity, Texas Christian University, 1986.

Vincent White, 1990, Assistant Football Coach, B.A., Stanford University, 1984.

Brian Williams, 1989, Assistant Football Coach, B.S., University of Kentucky, 1986.

Stacey Wolf, 1990, Athletic Trainer, B.S., University of New Mexico, 1987; M.Ed., UNLV, 1990.

Joe Wortmann, 1991, Assistant Volleyball Coach, B.A., Loyola Marymount, 1978.



“Emphasizing personal attention; we are dedicated to upholding our tradition of musical excellence. . . , offering uncommon experiences in educating students for 21st century musical career opportunities.”



**Carl E. Nosse, Dean
Conservatory of Music**

CONSERVATORY OF MUSIC

A professional school of the University of the Pacific dedicated to the teaching of the art and discipline of music in six major areas: Performance, Music Education, Music Therapy, Music History, Music Composition and Music Management-Business.

The Conservatory of Music is a professional school which regards music as both an art and a discipline. It recognizes the artistic values of creativity, experimentation, and music discrimination as well as the disciplinary attributes of scholarship, independent and critical thinking, self-motivation, skill development, and dedication. Musical performance is a vital component of all programs of study. A nurturing environment reflects high regard for the musical legacies of the past as well as for the challenges of the future.

The Conservatory prepares musicians for professions in music education, music history, music management/business, performance, music composition/theory, and music therapy. The Conservatory serves as a cultural well-spring for the campus and community, providing abundant opportunities for enriching musical experiences.

The Conservatory is accredited by the National Association of Schools of Music and the National Association for Music Therapy. Music Education programs are accredited by the National Council for the Accreditation of Teacher Education and the California Commission on Teacher Credentialing through the University's School of Education.

Bachelor of Music

Six areas of professional study are available in the Bachelor of Music degree.

Performance prepares students for careers as instrumentalists in symphony orchestras, singers in opera and musical theatre, solo recitalists, accompanists, conductors, private and college teachers, and church musicians.

Music Education prepares musicians for careers as music teachers at all levels in public and private schools.

Music Therapy combines the study of music with study in the behavioral sciences, and builds skills for careers as music therapists in hospitals, special education programs for the handicapped, mental health and rehabilitation centers, convalescent homes, correctional facilities, development centers, and in the community on contract as specialists in music therapy.

Music History and Music Composition are areas of study for those planning to teach these subjects at the college level, or remain active as scholars, authors, conductors or composers.

Music Management-Business prepares qualified students for a wide array of career options in phonograph record production and promotion, music publishing, arts management and

administration, business and legal relationships in the entertainment media and a host of other interests in the music industry.

Bachelor of Arts in Music

The Bachelor of Arts in Music is a degree designed with an emphasis in the study of music within a liberal arts curriculum. This degree program is offered in conjunction with the College of the Pacific, the University's liberal arts college. As compared to the Bachelor of Music degree with approximately 65% of the courses in music, the Bachelor of Arts degree requires approximately 40% of the courses to be in music. This provides an opportunity for students to enroll in a broader spectrum of courses selected from academic areas throughout the University. While not a highly concentrated music program, the Bachelor of Arts in Music degree provides an appropriate preparation for future graduate study and careers in music.

Music Minor

The Conservatory of Music offers a Music Minor to University students with an interest and ability in music. Students applying for admission to the Music Minor program are required to take a placement audition in an instrument or voice. Students admitted to the Music Minor program will be assigned a faculty adviser to direct their courses of study. Applications are available at the Office of Student Services, Room 301, Conservatory Building.

Creativity and Craft

To encourage creativity and experimentation is to encourage spontaneity, self-expression, and imagination. This can be seen in the amount of freedom given to the students in selecting their own way in meeting musical needs both on and off campus. It is evidenced in the student composer's solution to a harmony exercise or in the performer's participation in a local professional symphony orchestra. Students studying music education and music therapy are encouraged to develop this creative thrust in their programs by involving themselves in school and community projects. By channeling the student's creativity into professional activities, the Conservatory of Music hopes to produce a creative professional.

Creativity, however, is not enough for the professional musician who must also develop the tools of the profession, the craft of musicianship. Therefore, the Conservatory places heavy emphasis upon performance skills, com-

positional skills, teaching skills and aural-musical skills to prepare for productive careers in which the musician must express personal artistic values and interpret faithfully the work of other artists.

Creativity and craft both need an atmosphere conducive to their growth. The Conservatory maintains an excellent physical environment and stresses musical activity and artistic commitment as important ingredients in encouraging the growth of its students. A full spectrum of musical activities (including orchestra, various large and small wind ensembles, opera/musical theater, several choral groups and smaller chamber organizations) provides rich opportunities for this growth. In addition, professional groups frequently employ Pacific music majors. The atmosphere is further enhanced by students participating in graduate programs in performance, music education, music therapy and music composition. The faculty is committed to providing ultimate leadership in its artistic commitment, be it composition, performance or teaching.

The effectiveness of the Conservatory's programs can be seen in the activities of its graduates as they occupy positions of prominence in opera companies and symphony orchestras, on the faculties of colleges and universities, in music comedy, television and film, in the public schools, in facilities for the handicapped and in various positions in the music business. Graduates of the Conservatory have been accepted for graduate study without qualification at other leading schools of music in the United States and Europe.

Academic Structure

The Conservatory of Music is a professional school within the total academic structure of the University of the Pacific. As well as providing instruction for professional preparation, the Conservatory of Music offers specific courses as part of the liberal learning component of the University's general education program. The Bachelor of Arts in Music is awarded by the College of the Pacific and the Bachelor of Science with a concentration in Arts and Entertainment Management is awarded by the School of Business and Public Administration. Music Education degrees are offered in conjunction with the School of Education.

Facilities and Equipment

The Conservatory of Music occupies a complex of five buildings. The landmark **Conservatory Building**, completely renovated in 1987,

houses the 1,000-seat Faye Spanos Concert Hall, the Opera Department, faculty studios, student practice rooms, and the Conservatory of Music Administration Offices. The **Recital Hall**, constructed in 1986, seats 120 and is specifically designed for student recitals, masterclasses and workshops. The **Rehearsal Center**, dedicated in 1986, houses an instrumental rehearsal hall, a choral rehearsal hall, performance music library and performance ensemble offices. The **Frank and Eva Buck Hall**, completed in 1991, is the center for Conservatory classrooms and faculty teaching studios, a conference room and student commons and study areas. **Owen Hall** houses additional classrooms, teaching laboratories, chamber ensemble rehearsal studios and 30 student practice rooms. The **Music/Audio Visual Library**, integrated within the University's Holt-Atherton Library adjacent to the music buildings complex, houses books and reference materials, computers for computer assisted instruction; "Tapmaster" equipment to enhance rhythmic development; and VCR video and film reader visuals. Music scores, recordings, phonograph disc, compact disc, reel-to-reel tape and cassette tape audio equipment are readily available for student use in the Music/Audio Visual Library.

Traditional teaching and concert instruments include Steinway, Baldwin, Yamaha and Kawai pianos; a four manual concert pipe organ, a 1991 J. W. Walker tracker action, pipe organ, four practice pipe organs by Wicks, Moeller and Schlicker; a Wm. Dowd Harpsichord; and a collection of wind, percussion and orchestral string instruments of professional quality.

Electronic music equipment includes computers and electronic printers, a Yamaha DX-7/II Midi interface keyboard, various electronic keyboards and audio tape recorders. "Professional Performer" and "Professional Composer" software is available for computer applications. For more complex and experimental music applications, students have access to a local professional recording studio with extensive, state-of-the-art, audio sound generation and recording equipment.

Degrees Offered

The Conservatory of Music offers these degrees and majors: **Bachelor of Music** in performance, music education, music therapy, music composition, music history and music management/business; **Master of Arts** in music, and music therapy; **Master of Music** in performance, music education and music composition.

The **Bachelor of Arts** degree with a music major is offered through the College of the Pacific. The **Master of Arts in Teaching** and **Doctor of Education** in music education are offered through the School of Education and the Graduate School.

Baccalaureate Degrees General Requirements During Residence

1. All music majors are required to pass a piano proficiency examination for graduation. Conservatory departments or applied areas may elect to waive the examination requirement by substituting four semesters of applied music keyboard or completion of the Freshman Piano Examination.

2. Lessons in applied music (principal instrument or voice) must be taken each semester of residence according to the major field specifications. Literature and technical requirements for various levels of instruction are noted in the courses of study in the applied music handbook, on file in the Conservatory office and in the music library.

3. All students are required to participate for credit in one major ensemble each semester of residence.

4. All undergraduate music majors must enroll in solo class each semester of residence.

General Education Requirement

Conservatory of Music students must complete the requirements of the University-wide program.

Core Curriculum in Music

All music majors take a basic core of music courses, studies and activities. This core curriculum educates the musician in the art form. It strives to improve music literacy, develop artistic sensitivity and provide a broad artistic experience for all music students. Further, it is designed to raise the quality of music-making in each student regardless of individual professional goals. The core is required of all music majors in the University:

Theory and Theory Drill	16 units
Music History	9 units
Jazz Composition and	
Scoring	2 units
or	
Vocal Composition and	
Scoring	2 units
EMP 82 or 83 Major Vocal	
Ensemble (one year)	2 units
Applied music	8 units

Placement Examinations on Entrance

All prospective music majors (and music minors) must perform an instrumental or vocal audition to determine music major (minor) status and performance placement level. Results determine music major status, level of applied music study and teacher assignment. All music majors, except keyboard concentration students, must perform a piano proficiency exam at entrance. This is NOT a pass/fail examination; it is for placement purposes only.

The Numbering of Courses

Courses numbered from 1 through 99 are lower division undergraduate music courses normally taken by first and second year students. Some of these courses are prerequisite to a number of upper division courses.

Courses numbered from 101 through 199 are upper division undergraduate courses and require (other than specified prerequisites) junior standing for enrollment.

Courses numbered from 201 through 399 are graduate courses. 300 courses and above are for doctoral study.

Course numbers separated by a comma imply that the first is prerequisite to the second; numbers separated by a semicolon imply that either course may be taken independently of the other.

Grade System in Conservatory

The Conservatory adheres to the "letter" grading system as described elsewhere in this catalog with the following exceptions:

1. Pass-Fail (P/F) is used only in EMP 50, EED 113.

2. The Pass/No Credit system is not used in the Conservatory courses for Bachelor of Music degree students but is a grading option in Conservatory courses ETC 2, EHI 5 and EED 100, which are not available to Bachelor of Music degree students.

Class Attendance

Professional school students are normally expected to attend all classes, rehearsals, lessons and other specified assignments where attendance is pertinent. The instructor of each class in the Conservatory of Music will explain what is expected of the student in each course and ensemble as far as attendance is concerned. In some classes (ensembles, etc.) attendance is an important factor in the formulation of grades.

Bachelor of Arts Degree

All candidates for the Bachelor of Arts degree with a major in music must complete a minimum of 44 units in music. The total number of music units counted toward the Bachelor of Arts may not exceed 60 units. Bachelor of Arts majors must complete eight units in applied music and six units in ensembles. All course lists for registration must be approved by the music adviser in the Conservatory of Music.

The following courses must be completed prior to graduation:

ETC 11, 13, 15, 17, 18.

Theory 13 units

ETC 12, 14, 16. Theory Drill 3 units

EHI 11, 12, 13. Survey of

Music History I, II, III 9 units

ETC 121 or 122. Jazz Composition and Scoring or Vocal

Composition and Scoring 2 units

EMP 82 or 83. Major Choral Ensemble.....	2 units
EAP 10/111/112. Applied Music (including piano proficiency) ¹	8 units
Music history or music theory electives.....	3 units
Ensembles ²	4 units
	<u>44³ units</u>

¹ Students must study applied music on their principal instrument for a minimum of six semesters.

² See General Requirements During Residence for ensemble requirements.

³ Students wishing to take additional units beyond the 44-unit minimum must select courses from theory, composition or music history.

Bachelor of Music Degree

The University of the Pacific confers the Bachelor of Music degree upon students who complete the prescribed courses in music, and academic subjects satisfactorily. Major fields are: performance, music composition, music history, music education, music therapy and music management-business. Conservatory of Music students must complete the requirements of the University General Education Program.

During the third year, performance majors perform a half or whole recital.

During the senior year, candidates must demonstrate their competencies and qualifications for the degree by doing some special work in the lines of their respective major subjects. A performance major presents a public recital. A music education major presents one-half a public recital. Composition majors prepare a creative or analytical project of major propor-

tions. Public performance or presentation of this senior project is encouraged. Music therapy majors contribute research in their field. Music history majors submit a senior research paper. Music management majors have a senior project required.

The Bachelor of Music degree is designed to take four years to complete. Students working towards a B.M. degree with a double major should expect to take an additional semester or year. Students must be aware that some required courses are offered only once every other year, and if a student misses them, particularly if changing majors after the beginning of the junior year, the student may find it necessary to spend an extra semester or year waiting for those courses to be taught again.



Major in Performance — Piano or Organ**First Year**

EAP 12. Principal Instrument	.4
EH1 11. Survey of Music History I	.3
Major Choral Ensemble	.2
EMP 50. Solo Class	.0
ETC 11, 13. Theory	.6
ETC 12, 14. Theory Drill	.2
Electives ¹⁻²	.14
	31

Second Year

EAP 12. Principal Instrument	.4
EH1 12, 13. Survey of Music History II, III	.6
EMP 50. Solo Class	.0
ETC 15. Theory	.3
ETC 16. Theory Drill	.1
ETC 17. Theory 4, Scoring	.2
ETC 18. Theory 4A, Adv. Form	.2
Major Ensemble	.2
Electives ¹⁻²	.10
	32

Third Year

EAP 112. Principal Instrument	.8
EMP 50. Solo Class	.0
EMP 140. Pedagogy of Piano	.2
ETC 121. Jazz Scoring or	
ETC 122. Vocal Composition	.2
and Scoring	.2
Mus. Theory & Mus. Hist. Elective	.2
Major Ensemble	.2
Electives ¹⁻²	.15
	31

Fourth Year

EAP 112. Principal Instrument	.8
EH1 142. Chamber Music Lit.	.3
Mus. Theory and Mus. Hist. Elective	.2-3
EH1 143a, b. Keyboard Lit.	.6
EMP 50. Solo Class	.0
EMP 151 & 152 or 153.	
Conducting	.4
Major Ensemble	.2
Electives ¹⁻²	.5-6
	30-32

¹ Students must complete the requirements of the University General Education Program.

² All keyboard performance majors are required to take EMP 130-Accompanying, each semester up to 6 units.

Major in Performance — Piano with Concentration in Accompanying, Vocal Emphasis²**First Year**

EAP 12. Piano	.4
EH1 11. Survey of Music History I	.3
Major Choral Ensemble	.2
EMP 20, 21. Intro. to Lyric Diction	.4
EMP 50. Solo Class	.0
EMP 130. Accompanying	.2
ETC 11, 13. Theory	.6
ETC 12, 14. Theory Drill	.2
Electives ¹	.8
	31

Second Year

EAP 12. Piano	.4
EH1 12, 13. Survey of Music History II, III	.6
EMP 50. Solo Class	.0
EMP 120, 121. Lyric Diction	.4
EMP 130. Accompanying	.2
ETC 15. Theory	.3
ETC 16. Theory Drill	.1
ETC 17. Theory 4, Scoring	.2
ETC 18. Theory 4A, Adv. Form	.2
Major Ensemble	.2
Electives ¹	.5
	31

Third Year

EAP 112. Piano	.6
EH1 141. Opera Lit. or EHI 144 Vocal Lit.	.3
EMP 50. Solo Class	.0
EMP 151 & 152. Conducting	.4
EMP 130. Accompanying	.4
ETC 121. Jazz Scoring or	
ETC 122. Vocal Composition	.2
and Scoring	.2
Major Ensemble	.2
Electives ¹	.10
	31

Fourth Year

EAP 112. Piano	.8
EAP 5. Voice	.2
EH1 142. Chamber Music Lit.	.3
EH1 141. Opera Lit. or EHI 144 Vocal Lit.	.3
EH1 143a, b. Keyboard Lit.	.6
EMP 50. Solo Class	.0
EMP 130. Accompanying	.4
Major Ensemble	.2
Electives ¹	.3
	31

¹ Students must complete the requirements of the University General Education Program. One semester of German and one semester of French.

² During the Junior and Senior years the student will accompany a total of six full recitals. At least four of these should be vocal recitals. In the Senior year a half solo recital is also required.

Major in Performance — Voice**First Year**

EAP 12. Voice	.4
EAP 1 or 5. Piano	.2
EH1 11. Survey of Music History I	.3
EMP 20, 21. Intro. to Lyric Diction	.4
EMP 50. Solo Class	.0
Major Choral Ensemble	.2
ETC 11, 13. Theory	.6
ETC 12, 14. Theory Drill	.2
Electives ¹	.8
	31

Second Year

EAP 12. Voice	.4
EAP 5. Piano	.1
EH1 12, 13. Survey of Music History II, III	.6
EMP 50. Solo Class	.0
ETC 15. Theory	.3
ETC 16. Theory Drill	.1
ETC 17. Theory 4, Scoring	.2
ETC 18. Theory 4A, Adv. Form	.2
Major Ensemble	.2
Beginning German or French ³	.8
Electives ¹	.2
	31

Third Year

EAP 112. Voice	.6
EMP 50. Solo Class	.0
Major Ensemble ²	.2
ETC 121. Jazz Scoring or	
ETC 122. Vocal Composition	.2
and Scoring	.2
Drama Elective	.4
Beginning German or French ³	.8
Electives ¹	.9
	31

Fourth Year

EAP 112. Voice	.6
EH1 144. Vocal Lit.	.3
EMP 50. Solo Class	.0
EMP 120, 121. Lyric Diction	.4
EMP 141. Pedagogy of Voice	.2
Major Ensemble ²	.2
Mus. Theory or Mus. History	
Electives	.4-6
EMP 151, 152. Conducting	.4
Electives ¹	.4-6
	29-33

¹ Students must complete the requirements of the University General Education Program.

² During Junior and Senior years, each student must have one year of Opera Production or Workshop and one year of a Major Choral Ensemble.

³ Eight (8) units of both German and French are required or proficiency satisfied by examination.

In addition to the senior recital or senior jury, voice majors are required to complete a senior examination during the final undergraduate year as set forth in the course of study in the applied music handbook.

Major in Performance — Strings**First Year**

EAP 12. Principal Instrument	.4
EAP 1 or 5. Piano	.2
EH1 11. Survey of Music History I	.3
EMP 50. Solo Class	.0
EMP 70. Orchestra	.2
Major Choral Ensemble	.2
ETC 11, 13. Theory	.6
ETC 12, 14. Theory Drill	.2
Electives ¹	.10
	31

Second Year

EAP 12. Principal Instrument	.4
EAP 5. Piano	.1
EH1 12, 13. Survey of Music History II, III	.6
EMP 50. Solo Class	.0
EMP 60. String Ensemble	.1
EMP 70. Orchestra	.2
ETC 15. Theory	.3
ETC 16. Theory Drill	.1
ETC 17. Theory 4, Scoring	.2
ETC 18. Theory 4A, Adv. Form	.2
Electives ¹	.10
	32

Third Year

EAP 112. Principal Instrument	.8
EH1 140. Symphonic Literature	.3
EMP 50. Solo Class	.0
EMP 160. String Ensemble	.1
EMP 170. University Symphony Orchestra	.2
ETC 121. Jazz Scoring or	
ETC 122. Vocal Composition	.2
and Scoring	.2
Electives ¹	.14
	30

Fourth Year

EAP 112. Principal Instrument	.8
EH1 142. Chamber Music	.3
EMP 50. Solo Class	.0
EMP 151, 153. Conducting	.4
EMP 160. String Ensemble ²	.1
EMP 170. University Symphony Orchestra	.2
Electives ¹	.13
	31

¹ Students must complete the requirements of the University General Education Program.

² String bassists normally meet the requirement by playing string bass ensembles.

Major in Performance — Woodwinds², Brass³, or Percussion

First Year		Second Year		Third Year		Fourth Year	
EAP 12. Principal Instrument	4	EAP 12. Principal Instrument	4	EAP 112. Principal Instrument	8	EAP 112. Principal Instrument	8
EAP 1 or 5. Piano	2	EAP 5. Piano	1	EMP 50. Solo Class	0	EHI 140. Symphonic Literature	3
EHI 11. Survey of Music History I	3	EHI 12, 13. Survey of Music		ETC 121. Jazz Scoring or		Major Ensemble	2
Major Ensemble	2	History II, III	6	ETC 122. Vocal Composition		Adv. Ensemble (Woodwind, Brass,	
Ensemble (Woodwind, Brass or		EMP 50. Solo Class	0	and Scoring	2	or Perc.)	1
Perc.)	1	ETC 15. Theory	3	Adv. Major Ensemble	2	EMP 50. Solo Class	0
Major Choral Ensemble	2	ETC 16. Theory Drill	1	Adv. Ensemble (Woodwind, Brass,		EMP 151, 153. Conducting	4
EMP 50. Solo Class	0	ETC 17. Theory 4, Scoring	2	Perc.)	1	Mus. Theory or Mus. History	
ETC 11, 13. Theory	6	ETC 18. Theory 4A, Adv. Form	2	Electives ¹	18	Elective	2-3
ETC 12, 14. Theory Drill	2	Major Ensemble	2		31	Electives ¹	10-11
Electives ¹	9	Ensemble (Woodwind, Brass, or					30-32
	31	Perc.)	1				
		Electives ¹	9				
			31				

¹Students must complete the requirements of the University General Education Program. ²Flute, oboe, clarinet, bassoon, alto saxophone. ³Trumpet, French horn, trombone, euphonium, tuba.

Major in Performance — Guitar

First Year		Second Year		Third Year		Fourth Year	
EAP 12. Guitar	4	EAP 12. Guitar	4	EAP 112. Guitar	8	EAP 112. Guitar	8
EAP 1 or 5. Piano	2	EAP 5. Piano	1	EMP 50. Solo Class	0	Mus. Theory or Mus. Hist. Elective	2
EHI 11. Survey of Music History I	3	EHI 12, 13. Survey of Music		ETC 121. Jazz Scoring or		EMP 50. Solo Class	0
Major Choral Ensemble	2	History II, III	6	ETC 122. Vocal Composition		EMP 151 & 152 or 153.	
EMP 50. Solo Class	0	EMP 50. Solo Class	0	and Scoring	2	Conducting	4
ETC 11, 13. Theory	6	ETC 15. Theory	3	Mus. Th. or Mus. Hist. Elective	2	Major Ensemble	2
ETC 12, 14. Theory Drill	2	ETC 16. Theory Drill	1	Major Ensemble	2	Electives ¹	15
Electives ¹	12	ETC 17. Theory 4, Scoring	2	Electives ¹	17		31
	31	ETC 18. Theory 4A, Adv. Form	2		31		
		Major Ensemble	2				
		Electives ¹	10				
			31				

¹ Students must complete the requirements of the University General Education Program.

Major in Performance — Harp

First Year		Second Year		Third Year		Fourth Year	
EAP 12. Harp	4	EAP 12. Harp	4	EAP 112. Harp	8	EAP 112. Harp	8
EAP 1 or 5. Piano	2	EAP 5. Piano	1	EMP 50. Solo Class	0	EHI 140. Symphonic Lit.	3
EHI 11. Survey of Music History I	3	EHI 12, 13. Survey of Music		ETC 121. Jazz Scoring or		EMP 50. Solo Class	0
Major Choral Ensemble	2	History II, III	6	ETC 122. Vocal Composition		EMP 151, 153. Conducting	4
EMP 50. Solo Class	0	EMP 50. Solo Class	0	and Scoring	2	Mus. Theory or Mus. History	
ETC 11, 13. Theory	6	ETC 15. Theory	3	Major Ensemble ²	2	Elective	2-3
ETC 12, 14. Theory Drill	2	ETC 16. Theory Drill	1	Electives ¹	19	Major Ensemble ²	2
Major Ensemble ²	2	ETC 17. Theory 4, Scoring	2		31	Electives ¹	11-12
Electives ¹	10	ETC 18. Theory 4A, Adv. Form	2				30-32
	31	Major Ensemble ²	2				
		Electives ¹	10				
			31				

¹ Students must complete the requirements of the University General Education Program.

² Harp students should be enrolled in orchestra whenever feasible.

Major in Music Composition

First Year		Second Year		Third Year		Fourth Year	
EAP 10. Principal Instrument	2	EAP 10. Principal Instrument	2	EAP 10. Principal Instrument	2	EAP 10, 11. Principal Instrument	2
EAP 5. Piano ²	4	EAP 5. Piano ²	4	EMP 50. Solo Class	0	EMP 50. Solo Class	0
EHI 11. Survey of Music History I	3	EHI 12, 13. Survey of Music		ETC 107. 16th Century Counterpoint, or		EMP 151 & 152 or 153. Conducting	4
Major Choral Ensemble	1	History II, III	6	ETC 108. 18th Century Counterpoint	3	ETC 107. 16th Century Counterpoint	3
EMP 50. Solo Class	0	EMP 50. Solo Class	0	ETC 111. 20th Century Devices	4	ETC 109. Adv. Orchestration	2
ETC 11, 13. Theory	6	ETC 15. Theory	3	ETC 19. Music and Computer		ETC 113. Adv. Analysis	3
ETC 12, 14. Theory Drill	2	ETC 16. Theory Drill	1	Technology	2	ETC 20. Electronic and Computer	
ETC 4. Intro. to Composition or		ETC 17. Theory 4, Scoring	2	ETC 121. Jazz Scoring, and/or		Applications: Comp. & Perf.	2
ETC 24. Composition	2	ETC 18. Theory 4A, Adv. Form	2	ETC 122. Vocal Scoring	2-4	ETC 124. Composition	4
Major Ensemble	2	ETC 24. Composition	2	Electives in Music History	3-4	Major Ensemble	2
Gen'l Educ. Electives ¹	8	Gen'l Educ. Electives ¹	8	Major Ensemble	2	Free Electives	4
	30	Major Ensemble	2	Gen'l Educ. Electives ¹	8	Gen'l Educ. Electives ¹	6
			32		31-34		32

¹ Students must complete the requirements of the University General Education Program.

² Piano concentration students may elect other courses in music.

Due to course rotation, certain upper division courses may appear otherwise than shown above; careful checking is suggested!
Composition majors are urged to participate in ETC 138-Arts Nova Ensemble.

Major in Music History

First Year	
EAP 5. Piano ¹	2
EHI 11. Survey of Music History I	3
EMP 50. Solo Class	0
Major Choral Ensemble	2
ETC 11, 13. Theory	6
ETC 12, 14. Theory Drill	2
German or French ⁴	8
Electives ²	12
	35

Second Year	
EAP 5. Piano ¹	2
EHI 12, 13. Survey of Music	6
History II, III	6
Major Ensemble	2
German or French ⁴	8
EMP 50. Solo Class	0
ETC 15. Theory	3
ETC 16. Theory Drill	1
ETC 17. Theory 4, Scoring	2
ETC 18. Theory 4A, Adv. Form	2
Electives ²	6
	32

Third Year	
EAP 5. Piano ¹	2
EMP 50. Solo Class	0
Major Ensemble	2
French or German ⁴	8
ETC 107. 16th Century Counterpoint or	3
ETC 108. 18th Century Counterpoint	2
ETC 121. Jazz Scoring	2
ETC 122. Vocal Comp. and Scoring	2
Music Theory Elective	3
Mus. Hist. Electives ³	6
ETC 124. Composition	2
	30

Fourth Year	
EAP 5. Piano ¹	2
Major Ensemble	2
EHI 180. Res. in Mus. History	4
EMP 50. Solo Class	0
EMP 151 & 152 or 153.	4
Conducting	12
Mus. Hist. Electives ³	10
Electives ²	34

¹ EAP 10 if piano is the principal instrument.

² Students must complete the requirements of the University General Education Program. Electives must include one 3-4 unit course each in English and Western Civilization.

³ These courses are to be selected from EHI 150, 151, 152, 153, 154, 155, 156, 157, 158, 159a, b, or 160. Special topics courses may be substituted with the permission of the department chairman.

⁴ The student will take four semesters of German and two semesters of French.

Major in Music Management-Business

First Year	
ETC 11, 13. Theory	6
ETC 12, 14. Theory Drill	2
EHI 11. Survey of Music History I	3
Major Choral Ensemble	2
Major Ensemble	2
EMP 50. Solo Class	0
EAP 1 or 5. Piano	2
EAP 10. Principal Instrument	4
AEC 53. Elements of Microeconomic Theory	4
LBA 81. Intro. to Business	4
EMB 11. Music, Entertainment in U.S. Society	3
EMB 11L. Music, Entertainment in U.S. Society Seminary	1
	33

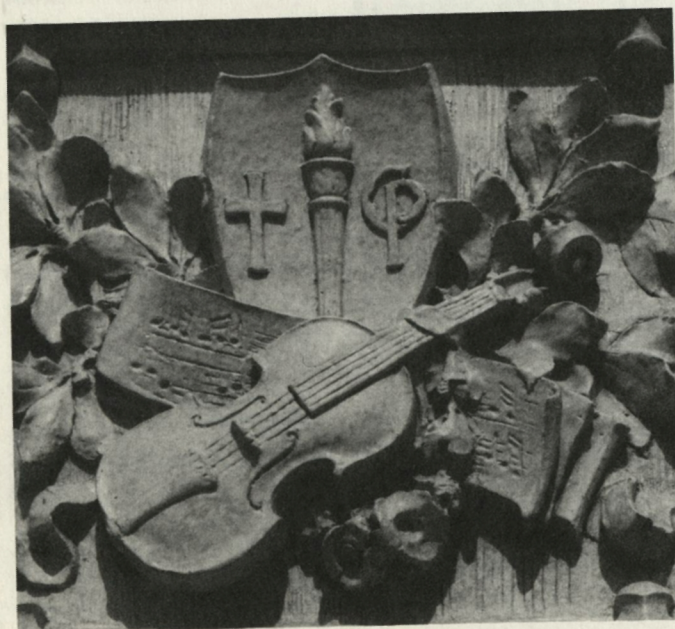
Second Year	
ETC 15. Theory	3
ETC 16. Theory Drill	1
ETC 17. Theory 4, Scoring	2
ETC 18. Theory 4A, Adv. Form	2
EHI 12, 13. Survey of Music	6
History I, II	6
Major Ensemble	2
EMP 50. Solo Class	0
EAP 5. Piano	2
EAP 10. Principal Instrument	4
LBA 39. Management Accounting	4
AMA 35. Elemental Statistical Inference	4
EMP 65 or 67. Chorus	1
Electives	4
See below	35

Third Year	
ETC 121. Jazz or	2
ETC 122. Vocal Scoring	2
EHI 13. Survey of Music	3
History III	3
Major Ensemble	2
EAP 10 or 11. Principal Instrument	2
EMP 151. Principles of Conducting	2
EMP 50. Solo Class	0
EMB 96. Music in the Recording Studio	3
LBA 107. Marketing Management	4
LBA 109. Mgmt. & Organizational Behavior	4
EMB 195. Music Industry Analysis: From Creation to Consumer	4
Electives	8
See below	34

Fourth Year	
EAP 10, 11. Principal Instrument	2
Major Ensemble (1 semester waived if in conflict with Internship)	2
EMB 153. Entertainment Law	4
EMP 50. Solo Class	0
Business Admin. Elective (with approval of Cons./Bus. advising team)	4
LBA 183. Internship or Music Bus. Elective (Co-op with both professional schools-spring sem.)	1-4
Electives	8
See below	21-24

Students must complete the requirements of the University General Education Program. There are 128 required units for completion of this degree program, including liberal arts units and a minimum of 64 music units. For those who qualify, the EMB 198 Internship is strongly recommended.

The UOP School of Business and Public Administration offers several educational options for students interested in careers in a management position in the arts and entertainment industries. Students electing one of these options may receive a Bachelor of Science degree in Business Administration with a **concentration** in Arts and Entertainment Management. Within this concentration students focus their interests on Entertainment Management (Music), Visual Arts Management, or Theatre Arts Management. For further information contact the School of Business and Public Administration, the Conservatory of Music, the College of the Pacific Art Department, or the Department of Drama and Dance.



Major in Music Education

The Conservatory of Music offers two degree plans leading to a major in Music Education, one with a concentration in instrumental music and the other with a choral concentration. The Bachelor of Music degree is normally awarded at the completion of a four-year program. Several directed teaching programs are offered at the University of the Pacific leading to the California Single-Subject Teaching Credential with a major in Music:

1. A student teaching plan which requires two part-time semesters of student teaching during the fourth year.
2. A student teaching plan which requires one semester of student teaching (ten units) during the fourth year plus a summer of video-microrehearsal and field teaching.
3. A video-microrehearsal/internship plan in which selected students participate in the summer video-microrehearsal/field teaching program and teach under contract in neighboring school districts during the fifth year.
4. A student teaching plan which requires one full-time semester of student teaching.

All music education majors must pass a minimum proficiency examination in functional guitar and must have 100 hours of laboratory teaching experience in elementary and secondary schools.

Instrumental Concentration

First Year

EAP 11. Principal Instrument ¹	4
EAP 1 or 5. Piano or Voice ²	2
ETC 11, 13. Theory.....	6
ETC 12, 14. Theory Drill.....	2
EHI 11. Survey of Music History I.....	3
Major Choral Ensemble.....	2
Major Ensemble ⁷	2
From EED 101, 102, 103, 104, 105, 107, 108 ⁴	2
General Ed. Elect. ³	11
EMP 50. Solo Class.....	0
	34

Second Year

EAP 11. Principal Instrument ¹	4
EAP 1 or 5. Piano or Voice ²	2
ETC 15. Theory.....	3
ETC 16. Theory Drill.....	1
ETC 17. Theory 4, Scoring.....	2
ETC 18. Theory 4A, Adv. Form.....	2
EHI 12, 13. Survey of Music History II, III.....	6
EED 111. Choral Development.....	2
Major Ensemble ⁷	2
From EED 101, 102, 103, 104, 105, 107, 108 ⁴	4
General Ed. Elect. ³	5
EMP 50. Solo Class.....	0
	33

Third Year

EAP 111. Principal Instrument ¹	4
ETC 121. Jazz Scoring.....	2
ETC 122. Vocal Comp. & Scoring.....	2
EMP 151, 153. Conducting.....	4
EED 115, 117. Mus. for Child and Teenager.....	4
EED 114, 116. Mus. in Schools.....	4
FEG 105. Foundations for Teaching.....	3
EED 113. Lab Ensemble.....	1
FEP 121, FEI 173 and 175 ⁵	9
EMP 50. Solo Class.....	0
Major Ensemble ⁷	2
	32-35

Fourth Year

EAP 111. Principal Instrument ¹	4
From EED 101, 102, 103, 104, 105, 107, 108 ⁴	1
EED 110. Marching Band Tech. ⁸	1
EED 113. Lab Ensemble.....	1
Major Ensemble ⁷	2
FEI 178. Directed Teaching ⁶	14
FDI 195. Seminar ⁶	2
EMP 50. Solo Class.....	0
General Ed. Elect. ³	8
	33

Choral Concentration

First Year

EAP 11. Principal Instrument ¹	4
EAP 1 or 5. Piano or Voice ²	2
ETC 11, 13. Theory.....	6
ETC 12, 14. Theory Drill.....	2
EHI 11. Survey of Music History I.....	3
Major Choral Ensemble ⁷	2
From EED 101, 102, 103, 104, 105, 107, 108 ⁴	2
EMP 20, 21. Lyric Diction.....	4
General Ed. Elect. ³	7
EMP 50. Solo Class.....	0
	32

Second Year

EAP 11. Principal Instrument ¹	4
EAP 1 or 5. Piano or Voice ²	2
ETC 15. Theory.....	3
ETC 16. Theory Drill.....	1
ETC 17. Theory 4, Scoring.....	2
ETC 18. Theory 4A, Adv. Form.....	2
EHI 12, 13. Survey of Music History II, III.....	6
EED 111. Choral Development.....	2
Major Choral Ensemble ⁷	2
EMP 69. Opera Workshop.....	1
General Ed. Elect. ³	9
EMP 50. Solo Class.....	0
	34

Third Year

EAP 111. Principal Instrument ¹	4
ETC 121. Jazz Scoring.....	2
ETC 122. Vocal Composition and Scoring.....	2
EMP 151, 152. Conducting.....	4
EED 115, 117. Mus. for Child & Teenager.....	4
EED 114, 116. Mus. in Schools.....	4
FEG 105. Foundations for Teaching.....	3
EED 113. Lab. Ensemble.....	1
FEP 121, FEI 173 and 175 ⁵	9
EMP 50. Solo Class.....	0
Major Choral Ensemble ⁷	2
	32-35

Fourth Year

EAP 111. Principal Instrument ¹	4
From EED 101, 102, 103, 104, 105, 107, 108 ⁴	2
EED 113. Lab Ensemble.....	1
Major Choral Ensemble ⁷	2
FEI 178. Directed Teaching ⁶	14
FEI 195. Seminar ⁶	2
EMP 50. Solo Class.....	0
General Ed. Elect. ³	8
	33

¹ Music Education majors are required to take applied music instruction in their principal instrument every semester of residence, with a minimum total of 14 units. At least three semesters (six units) of instruction must be at EAP 112 or 111 level. A half recital must be presented during the Senior year. With the consent of the applied teacher and the chair of the Department of Applied Music, transfer students may waive up to six units of lower division applied instruction by audition.

² Students with keyboard as principal instrument are required to have four semester units of applied voice instruction. All other principal instruments are required to enroll for piano until the piano minimum examination is passed. (This normally requires two years of piano study.)

³ Credential candidates must demonstrate an understanding of the U.S. Constitution through coursework or examination. They must demonstrate competency in reading, writing and math by passing the CBEST Examination.

⁴ Seven instrumental techniques courses are required for an instrumental concentration; five instrumental techniques courses, are required for a choral concentration.

⁵ Credential requirements. Students not working toward a teaching credential may substitute free elective courses to complete the required 124 units for the Bachelor of Music degree.

⁶ Students who become interns may substitute electives for the student teaching listed here in the fourth year. Not a degree requirement.

⁷ Major ensemble must relate to the student's proposed teaching area as specified by advisers.

⁸ Except string concentrations.

Major in Music Therapy

The program in music therapy is approved by the National Association for Music Therapy. The Bachelor of Music degree is earned at the completion of four years of course work. One is eligible for national registration as a music therapist upon the completion of a six-month internship at an approved clinical facility. A Board Certification Examination follows registration.

In order to complete the music therapy program, students must obtain a grade of C or better in music therapy courses and demonstrate personal and professional skills appropriate to the clinical profession as evaluated by the music therapy department.

General requirements for music therapy students during residence are:

1. All students must enroll for keyboard study to meet the piano proficiency requirement preferably by the end of the junior year.
2. All students are required to participate for credit in their major instrument ensemble each semester of residence. In addition, instrumentalists are required to participate in a major choral ensemble for two semesters.

First Year

ETH 11. Introduction to Creative Arts Therapy.....	3
EHI 11. Survey of Music History I.....	3
ETC 11, 13. Theory.....	6
ETC 12, 14. Theory Drill.....	2
EAP 10. Applied Music.....	2
Major Ensemble (Instru/Vocal).....	2
General Education.....	8
Instrumental Methods.....	1
EAP 1. (Group Guitar).....	1
EAP 10. Applied: Piano.....	2
Solo Class.....	0
	30

Second Year

ETH 118. Basic Skills in Special Education.....	3
EHI 12, 13. Music History.....	6
ETC 15. Theory.....	3
ETC 16. Theory Drill.....	1
ETC 17. Theory 4, Scoring.....	2
ETC 18. Theory 4A, Adv. Form.....	2
EAP 10. Applied Music.....	2
Major Ensemble (Instru/Vocal).....	2
General Education.....	4
B/H/NA: Exceptional Child.....	4
Instrumental Methods.....	1
EAP 1. Applied (Class Voice).....	1
EAP 1. Applied: Piano.....	2
Solo Class.....	0
	33

Third Year

ETH 135. Music Therapy Tech. with Children.....	4
ETH 140. Psychology of Music.....	4
ETC 121 or 122. Jazz or Vocal Composition and Scoring.....	2
EAP 10. Applied Music.....	2
General Education.....	4
B/H/NS.....	4
General Education: Abnormal Psychology.....	4
General Education: Anatomy and Physiology.....	4
Instrumental Methods.....	2
EAP 10. Applied: Piano.....	2
Solo Class.....	0
	32

Fourth Year

ETH 141a. Influence of Music on Behavior: Adults I.....	4
ETH 141b. Music in Therapy: Adults II.....	4
EAP 10. Applied Music.....	2
General Education.....	4
B/H/NS.....	4
Music Electives.....	3
Electives (non-music).....	6
EAP 152 or 153. Conducting.....	2
Solo Class.....	0
	29

Music Minor

The Conservatory of Music offers a Music Minor to University students with an interest and ability in music. Students applying for admission to the Music Minor program are required to take an audition in an instrument or voice and a placement test in Music Theory. Students admitted to the Music Minor program will be assigned a faculty adviser to direct each individual's course of study. Applications are available in the Office of Student Services, Conservatory Room 301.

Music Minor Course of Study (Minimum of 21 units)

A. CORE

- ETC 11. Theory I3 units
ETC 12. Theory Drill1 unit
EHI 5. Music Appreciation4 units
Select one course from the following:
ETC 13. Music Theory II3 units
ETC 14. Theory Drill1 unit
EHI 11 or 12 or 13. Music

History Survey3 units

B. APPLIED MUSIC. Instrument or Voice.

- EAP 10. The minimum requirement is two semesters of study2 units
ENSEMBLE. The minimum requirement is two semesters of participation in any ensemble1-2 units
EMP 50-SOLO CLASS. The minimum requirement is two semesters of enrollment0 units

C. ELECTIVES

With the approval of the Music Minor Faculty Adviser, students will select 6 to 9 units of music courses to complete a minimum of 21 units6-9 units

A qualified student may pass out of ETC 1-Foundations of Music Theory and take ETC 11/12, then elect to take ETC 13/14 or one semester of EHI 11 or 12 or 13.

ETC 2-Fundamental Structures of Music is not an eligible elective course for the Music Minor program.

Graduate Study

The Conservatory of Music, through the Graduate School of the University of the Pacific, offers the Master of Music in performance, music education and composition, and the Master of Arts degree in music and music therapy. It also cooperates with the School of Education and the Graduate School in offering both the Master of Arts in Teaching and the Doctor of Education degree with a concentration in music education. Complete information on these degrees is available in the Graduate School Catalog.

Course Offerings

Music Performance Department: Applied

- EAP 1. Applied Music, Class Lessons (1)

Enrollment in applied music classes requires an applied music fee per unit.

EAP 5. **Applied Music** (1-2) Applied Music for non-music majors or for music majors in a non-principal applied medium. Enrollment in applied music classes requires an applied music fee per unit.

EAP 10. **Applied Music** (1-2) For music majors in music theory composition, music history, music therapy and music management in their principal applied media, Bachelor of Arts students with a major in music, and music minors. Enrollment in applied music classes requires an applied music fee per unit.

EAP 11. **Applied Music** (1-2) For music education majors in their principal applied media. Enrollment in applied music requires an applied music fee per unit.

EAP 12. **Applied Music** (1-4) For performance majors. Voice, piano, harp, organ, harpsichord, violin, viola, cello, double bass, flute, oboe, clarinet, bassoon, French horn, trumpet, trombone, baritone horn, saxophone, tuba, percussion and guitar. Enrollment in applied music requires an applied music fee per unit.

EAP 111. **Advanced Applied Music for Music Education Majors** (1-2) For upper division music majors who have passed sophomore concentration examination in their principal instrument or voice. Required for music education majors. Enrollment in applied music requires an applied music fee per unit.

EAP 112. **Advanced Applied Music for Performance Majors** (1-4) For upper division music majors who have passed the sophomore applied major examination in their principal instrument or voice. Required for performance majors. Enrollment in applied music requires an applied music fee per unit.

EAP 121. **Vocal Coaching** (1) Preparation of songs and arias for public performance. Emphasis on musical and dramatic style and interpretation. Private and group lessons. Carries applied music fee. Prerequisite: permission of the instructor.

EAP 191. **Independent Study** (1-2)

EAP 210. **Graduate Applied Music for Non-performance Majors** (1-2) By audition only.

EAP 212. **Graduate Applied Music for Performance Majors** (1-4) By audition only.

EAP 291. **Independent Study** (1-4)

EAP 299. **Thesis Recital** (2, 4)

Music Education Department

EED 100. **Music for Children** (2) Music resources, concepts and activities for the pre-adolescent child. Open to non-music majors only. Required for elementary credential candidates. Prerequisite: ETC 2 or equivalent.

EED 101. **Woodwind Instruments** (1)

EED 102. **Woodwind Instruments** (1)

EED 103. **Brass Instruments** (1)

EED 104. **Brass Instruments** (1)

EED 105. **Percussion Instruments** (1)

EED 107. **String Instruments** (1)

EED 108. **String Instruments** (1)

EED 110. **Marching Band Techniques** (1)

Fundamentals of marching; show band maneuvers; full formations and precision drill techniques; study of charting and the half-time show.

EED 113. **Laboratory Ensemble** (½) Laboratory practice of rehearsal teaching skills, secondary instruments and vocal ensemble techniques.

EED 114. **Music in Elementary School and Community** (2) Role of music investigated within the elementary school and its environment. Includes 50 hours of laboratory observation/teaching in the elementary schools. Must be taken with FEG 105 and EED 115.

EED 115. **Music Experiences for the Child** (2) Music specialist approach to materials and techniques for developing music experiences for preteen children. Must be taken with EED 114. Open to music majors only.

EED 116. **Music in Secondary School and Community** (2) Role of secondary school music investigated. Includes 50 hours of laboratory observation/teaching in secondary schools. Must be taken in conjunction with EED 117. Open to music majors only.

EED 117. **Music for Teenagers** (2) Music specialist approach to materials and techniques for developing music experiences for adolescents. Must be taken with EED 116. Open to music majors only.

EED 118. **Advanced Teaching Practicum** (1-3) Supervised practical observation/teaching experiences in both public and private schools. Prerequisites: EED 114 and 116, or equivalent.

EED 119. **Choral Development** (2) Concepts and techniques for choral ensembles. Includes vocal and choral fundamental field observation.

EED 191. **Independent Study** (1-2)

EED 193. **Special Topics** (1-2)

EED 200. **Video Microrehearsal for Music Teaching Candidates** (3) Microrehearsals, seminars, individual and group viewing sessions to define and develop rehearsal-teaching techniques with video recording as basic tool. Prerequisites: Bachelor's degree in music, approval by Music Education faculty.

EED 201. **Video Microrehearsal for Experienced Music Teachers** (2) Restructuring of music teaching techniques using video recording techniques; microrehearsals, seminars, individual and group viewing sessions; field application of new procedures. Prerequisites: Bachelor's degree in music, two years of full time music teaching in public schools, permission of the instructor.

EED 202. **Fieldwork in Music Education** (3) Advanced work in schools. May include music drama, special ensembles, unique curriculum design.

EED 210. **Seminar in Music Education** (2) Discussion, research and writing related to music education.

EED 211. **Philosophy of Music Education** (3) Development of individual music education philosophy through study of history, aesthetics, sociology, psychology and school practice.

EED 212. **Introduction to Research in Music Education** (3) Scrutiny of resources dealing

with music education research; identification of various types of appropriate research.
EED 220. Instrumental Organization, Conducting and Literature (3)
EED 221. Choral Organization, Conducting and Literature (3)
EED 222. Advanced Problems in Elementary Music Teaching (3)
EED 291. Independent Study (1-4)
EED 293. Special Topics (1-2)
EED 299. Thesis (3)
EED 312, 313. Graduate Research in Music Education (1-3, 1-3)
EED 391. Independent Graduate Study (1-3)
EED 393. Special Topics (1-2)

Music History Department

EHI 5. Music Appreciation (4) A study of the basic elements of music, musical instruments, form and the important styles in music history. Open to non-music majors only.
EHI 6. Music of the World's Peoples (3) Survey of folk, primitive, popular, and classical traditions of Asia, Africa, Europe and North and South America. Open to all students. No prerequisites.
EHI 11. Survey of Music History I (3) Survey of music history and style from Greek music through music of the Renaissance. Prerequisite: knowledge of fundamentals. Open to all students.
EHI 12. Survey of Music History II (3) Survey of music history and style from the Baroque era through Beethoven. Prerequisite: EHI 11 or equivalent.
EHI 13. Survey of Music History III (3) Survey of music history and style of the Romantic and Modern eras. Prerequisite: EHI 11 or 12 or equivalent.
EHI 140. Symphonic Literature (3) History of the symphony from Baroque antecedents to contemporary examples. Prerequisites: ETC 11-16, EHI 11, 12, 13 or equivalent.
EHI 141. Opera Literature (3) Survey of the development of opera from 1600 to the present day, with special emphasis on major operatic works. Analysis of scores. Relationship of opera to world history. Prerequisite: ETC 11-1, EHI 11, 12, 13 or equivalent or permission of instructor.
EHI 142. Chamber Music Literature (3) Formal and stylistic study of chamber music literature. Analysis of specific works. Prerequisites: ETC 11-16, EHI 11, 12, 13 or equivalent.
EHI 143a. Keyboard Literature (3) Historical, formal and stylistic study of keyboard literature from 1450 through 1825. Prerequisites: ETC 11-16, EHI 11, 12, 13 or equivalent and permission of instructor.
EHI 143b. Keyboard Literature (3) Keyboard music from 1825 to present. Prerequisites: ETC 11-16, EHI 11, 12, 13 or equivalent and permission of instructor.
EHI 144. Vocal Literature (3) Survey of vocal compositions of major composers with emphasis on 19th century repertoire; songs of Schu-

bert, Schumann, Brahms, Wolf, Faure and Debussy stressed. Prerequisites: ETC 11-16, EHI 11, 12, 13; demonstrated ability to sing in German and French; permission of the instructor.

EHI 150. Medieval Music (3) Topics in music history to c. 1450. Prerequisites: EHI 11, 12, 13, equivalent or permission of the instructor.
EHI 151. Music in the Renaissance (3) Topics in the history of the music of the 15th and 16th centuries. Prerequisites: EHI 11, 12, 13, equivalent or permission of the instructor.

EHI 152. Music in the Baroque (3) Topics in music history from c. 1580 to c. 1750. Prerequisites: EHI 11, 12, 13, equivalent or permission of the instructor.

EHI 153. Studies in the Classical Period (3) Study of music from c. 1750-1810 with stress on evolution of style and historical factors which relate to this evolution. Prerequisites: EHI 11, 12, 13, equivalent or permission of the instructor.

EHI 154. Studies in the Romantic Period (3) Study of music of the 19th century and its relationship to other art forms and historical developments. Prerequisites: EHI 11, 12, 13, equivalent or permission of the instructor.

EHI 155. 20th Century Music (3) Study of the important style streams of contemporary music. Prerequisites: EHI 11, 12, 13, equivalent or permission of the instructor.

EHI 180. Research in Music History (4) Research culminating in a senior paper, designed to acquaint music history majors with research skills which can be used at the graduate level. Prerequisite: Senior standing as a music history major.

EHI 191. Independent Study (1-2)

EHI 193. Special Topics (1-2)

EHI 250. Medieval Music (3) Topics in music history to c. 1450. Emphasis will be on research methodology. Prerequisites: EHI 11, 12, 13, equivalent or permission of the instructor.

EHI 251. Music in the Renaissance (3) Topics in the history of the music of the 15th and 16th centuries. Prerequisites: EHI 11, 12, 13, equivalent or permission of the instructor.

EHI 252. Music in the Baroque (3) Topics in music history from c. 1580-1750. Prerequisites: EHI 11, 12, 13, equivalent or permission of the instructor.

EHI 253. Studies in the Classical Period (3) Study of music from c. 1750-1810 with stress on evolution of style and historical factors which relate to this evolution. Prerequisites: EHI 11, 12, 13, equivalent or permission of the instructor.

EHI 254. Studies in the Romantic Period (3) Study of music of the 19th century and its relationship to other art forms and historical developments. Emphasis will be on research methodology. Prerequisites: EHI 11, 12, 13, equivalent or permission of the instructor.

EHI 255. 20th Century Music (3) Study of the important style streams of contemporary music. Prerequisites: EHI 11, 12, 13, equivalent or permission of the instructor.

EHI 260. Special Studies in Music Literature.

(2) Historical studies in music literature. May be repeated for a maximum accumulation of six units.

EHI 263. Musicology Seminar (2) Studies pertinent research problems and methods, dealing with theory, form and music history.

EHI 265. Music Bibliography (3) An investigation of available music resources and reference materials.

EHI 291. Independent Study (1-4)

EHI 293. Special Topics (1-2)

EHI 299. Thesis (3)

Music Management/ Business Department

EMB 11. Music, Entertainment in U.S. Society (3) An introduction to the roles that the business and legal considerations play in the music to which our society listens. Examines records, films, television, video, and "live" concerts as each of them contribute to and are affected by business in music and entertainment.

EMB 11L. Music, Entertainment in U.S. Society Seminar (1) Concurrent registration with EMB 11.

EMB 96. Commercial Music in the Recording Studio (3) All aspects of in-studio audio recording, "hands on" in technical production (one time lab fee \$70).

EMB 97. Performing Arts Administration (3) A practical approach to management and business issues affecting primarily non-profit arts organizations, including program planning, budget development, fund-raising, community relationships, and concert promotion.

EMB 153. Entertainment Law (4) All aspects of legal relationships and rights problems in films, television, music and records. Prerequisite: EMB 11.

EMB 154. Arts Law and Grant Writing (3) An examination of legal issues affecting arts administration, with emphasis on arts legislation, contractual considerations in the arts, ownership of intellectual property, and the interface of law with the establishment, existence and fund-raising efforts of non-profit arts organizations.

EMB 191. Independent Study (1-2)

EMB 193. Special Topics (1-2)

EMB 195. Music Industry Analysis: From Creation to Consumer (4) An in-depth analysis of the music industry, beginning with the business of creating music, tracing its path through the music publisher, to the recorded performance, and finally to the consumer. Emphasis on contractual relationships and business problem-solving. Prerequisite: EMB 11.

EMB 198. Music Management Internship (2-4) An opportunity for qualifying students to spend a semester working in an area of the music business industry which interests them. Coordinated in conjunction with the UOP Office of Cooperative Education.

Music Performance Department: Ensembles

Courses EMP 60-84 are performance ensembles with membership open to all students except as noted.

- EMP 60. **String Ensemble** (½)
 EMP 61. **Woodwind Ensemble** (½)
 EMP 62. **Brass Ensemble** (½)
 EMP 63. **Percussion Ensemble** (½) Open to all students by audition.
 EMP 64. **Harp Ensemble** (½)
 EMP 65. **Guitar Ensemble** (½)
 EMP 66. **Jazz Ensemble** (½) Open to all students by audition.
 EMP 67. **Experimental Jazz Ensemble** (½) Open to all students by audition and permission of the instructor.
 EMP 69. **Opera Theatre Workshop** (1) Major ensemble.
 EMP 70. **University Symphony Orchestra** (1) Open to all students by audition. Major ensemble.
 EMP 71. **Football Band** (1) Open to all students by audition.
 EMP 72. **Symphonic Wind Ensemble** (1) Open to all students by audition. Major ensemble.
 EMP 73. **Concert Band** (1) Open to all students by audition. Major ensemble.
 EMP 80. **Opera Production** (1)
 EMP 82. **The Oriana Choir (Women's Chorus)** (1) Open to all students by audition. Major ensemble.
 EMP 83. **University Chorus** (1) Open to all students by audition. Major ensemble.
 EMP 84. **Pacific Singers** (1) Open to all students by audition. Major ensemble.

Music Performance Department: Supportive Courses

- EMP 20, 21. **Introduction to Lyric Diction** (2, 2) Fundamentals in technique of articulation and pronunciation; drills in acquiring maximum activity, fluency and flexibility of speech organs involved in diction; the study of the International Phonetic Alphabet; introduction to English, Italian, German and French diction. 20 is prerequisite to 21.
 EMP 50. **Solo Class** (0) Weekly performance recital for all music majors.
 EMP 120, 121. **Lyric Diction** (2, 2) Theory and practice of singing Italian, German, English and French. Translation and declamation of texts. Prerequisites: EMP 20, 21.
 EMP 130. **Accompanying** (1) Practical training in vocal and instrumental piano accompaniments. (Two units by instructor's permission).
 EMP 131. **Studio and Recital Accompanying** (1) Practicum in accompanying. Open to piano performance majors only, for major ensemble credit, for a maximum of two years.
 EMP 140. **Pedagogy of Piano** (2) Study of teaching methods and materials for elementary, intermediate and advanced piano students. Pre-

requisite: permission of the instructor.

EMP 141. **Pedagogy of Voice** (2) Theory and practice of the teaching of singing; physiology of the voice; consideration of discoveries of modern science as well as the important classical treatises; teaching materials; vocal studies and vocalises. Prerequisite: Permission of the instructor.

EMP 151. **Principles of Conducting** (2) Techniques of the baton, score reading and interpretation. Prerequisite: ETC 11-16.

EMP 152. **Choral Conducting** (2) Principles of conducting applied to choral rehearsals and repertoire. Prerequisite: EMP 151.

EMP 153. **Instrumental Conducting** (2) Principles of conducting applied to band and orchestra rehearsal and repertoire. Prerequisite: EMP 151.

EMP 171p. **Football Band** (1) Open to all students by audition.

Courses EMP 160-184 are performance ensembles with membership open to all students except as noted.

- EMP 160. **String Ensemble** (½)
 EMP 161. **Woodwind Ensemble** (½)
 EMP 162. **Brass Ensemble** (½)
 EMP 163. **Advanced Percussion Ensemble** (½) Open to all students by audition.
 EMP 164. **Harp Ensemble** (½)
 EMP 165. **Guitar Ensemble** (½)
 EMP 166. **Advanced Jazz Ensemble** (½) Open to all students by audition.
 EMP 168. **Collegium Musicum** (½) This group specializes in the performance of music before 1750.
 EMP 169. **Advanced Opera Theatre Workshop** (1)
 EMP 170. **Advanced University Symphony Orchestra** (1) Open to all students by audition. Major ensemble.
 EMP 171. **Advanced Marching Band** (1) Open to all students by audition.
 EMP 172. **Advanced Symphonic Wind Ensemble** (1) Open to all students by audition.
 EMP 173. **Advanced Concert Band** (1) Open to all students by audition. Major Ensemble.
 EMP 180. **Advanced Opera Production** (1)
 EMP 182. **Advanced The Oriana Choir (Women's Chorus)** (1) Open to all students by audition. Major ensemble.
 EMP 183. **Advanced University Chorus** (1) Open to all students by audition. Major ensemble.
 EMP 184. **Advanced Pacific Singers** (1) Open to all students by audition. Major ensemble.
 EMP 191. **Independent Study** (1-2)
 EMP 220, 221. **Advanced Lyric Diction** (2, 2) Further development of technique of articulation, pronunciation and enunciation in Italian, German and French; and to include advanced diction literature class. Prerequisites: EMP 120/121.
 EMP 269. **Advanced Opera Theatre Workshop** (1)
 EMP 280. **Advanced Opera Production** (1)
 EMP 291. **Independent Study** (1-4)

Music Composition Department

ETC 1. **Foundations of Music Theory** (2) Covers materials and concepts requisite to study of theory. Must be passed, or competency demonstrated through examination, before entry into theory program is permitted. Course does not earn graduation credit for music majors. No prerequisite.

ETC 2. **Fundamental Structures, Section 1** (3) Music fundamentals, music reading and harmonization of simple melodies. Open to non-music majors only. Education majors enroll in Section 2.

ETC 2. **Fundamental Structures, Section 2** (3) Music fundamentals, music reading and harmonization of simple melodies. Open to non-music majors only. Education majors enroll in Section 2.

ETC 4. **Introduction to Composition** (1-3) Free composition for beginners.

ETC 11. **Theory I** (3) Elementary harmony, including establishment of tonality at the keyboard and elements of form.

ETC 12. **Theory I Drill** (1) Sightsinging and ear-training integrated with ETC 11.

ETC 13. **Theory II** (3) Intermediate harmony through 7th chords, including modulation at the keyboard, 2-voice and 3-voice counterpoint, part forms and variation. Prerequisite: ETC 11 or equivalent.

ETC 14. **Theory II Drill** (1) Sightsinging and ear-training integrated with ETC 13. Prerequisite: ETC 12 or equivalent.

ETC 15. **Theory III** (3) Advanced harmony through altered chords, including keyboard study, variation. Prerequisite: ETC 13 or equivalent.

ETC 16. **Theory III Drill** (1) Sightsinging and ear-training integrated with ETC 15, 17 and 18. Prerequisites: ETC 14 or equivalent.

ETC 17. **Theory IV Scoring** (2), with Performance Lab. Prerequisite: ETC 15 or equivalent.

ETC 18. **Theory IV Advanced Form** (2). Prerequisite: ETC 15 or equivalent.

ETC 19. **Music and Computer Technology** (3) Introductory studies and exercises applying computer technology with music. Primary focus is on the use of micro-computers and synthesizers using a MIDI interface. Prerequisites: ETC 2. Fundamentals of Music or equivalent knowledge of music theory.

ETC 20. **Electronic and Computer Applications: Composition and Performance** (2) Studies and exercises in music composition and performance including digital and analog synthesis, computer controlled performance, and algorithmic composition. Prerequisites: Minimum of three units of Music Composition.

*ETC 21. **2 Voice Counterpoint** (1)

*ETC 22. **3 Voice Counterpoint** (1)

*ETC 23. **Keyboard** (1)

*Designed for transfer students who lack the competency as determined by entrance examination in theory.

ETC 24. **Composition, Lower Division** (1-3) Free composition for experienced students

below junior standing: may be repeated for credit. Prerequisite: ETC 11 or equivalent.
 ETC 107. **16th Century Counterpoint** (3) Analysis and composition in the style of Palestrina. Prerequisites: ETC 11-15 or equivalent.

ETC 108. **18th Century Counterpoint** (3) Analysis and composition in the style of Bach. Prerequisites: ETC 11-18 or equivalent.

ETC 109. **Advanced Orchestration I** (2) Survey of pre-1900 orchestral styles. Scoring problems and analysis. Scoring of original work is encouraged. Prerequisite: ETC 17 or equivalent.

ETC 110. **Advanced Orchestration II** (2) Survey of later orchestral styles. Scoring problems and analysis. Scoring of original work is encouraged. Prerequisite: ETC 17 or equivalent.

ETC 111. **20th Century Devices** (4) Surveys post-Romantic and Impressionistic harmony, counterpoint, and form. Fewer than 4 units may be taken by independent study, on arrangement with instructor. Prerequisite: ETC 11-18 or equivalent.

ETC 113. **Advanced Analysis** (3) Includes comparison of current modes of analysis. Prerequisite: ETC 11-18 or equivalent.

ETC 119. **Jazz Writing and Improvisation Techniques** (1) Study and writing of jazz melody and chord relationships. Orchestration and improvisation in major jazz styles. Prerequisite: ETC 120.

ETC 120. **The Styles and History of American Jazz** (1) Study of jazz ensemble instrumentation and arrangements, interpretation of jazz style and study of chord progressions. Music Education students will be given preference for space.

ETC 121. **Jazz Scoring** (2) Prerequisite: ETC 11-18 or equivalent.

ETC 122. **Vocal Composition and Scoring** (2) Prerequisite: ETC 11-18 or equivalent.

ETC 124. **Composition, Upper Division** (1-3) Free composition for experienced students. May be repeated for credit. Prerequisite: ETC 4 or equivalent.

ETC 138. **Arts Nova Ensemble** (½) Study/performance of new music.

ETC 191. **Independent Study** (1-2)

ETC 193. **Special Topics** (1-2)

ETC 204. **Composition, Graduate** (2-3) Free composition for graduate students. Composition majors will take 3 units; non-majors will take 2 units (or 1 unit by independent study). May be repeated for credit. Prerequisite for composition majors: ETC 124 or equivalent.

ETC 207. **16th Century Counterpoint** (3) Analysis and composition in the style of Palestrina. Graduate units earned through additional study projects and a final paper. Prerequisite: ETC 11-18 or equivalent.

ETC 208. **18th Century Counterpoint** (3) Analysis and composition in the style of Bach. Graduate units earned through additional study projects and a final paper. Prerequisite: ETC 11-18 or equivalent.

ETC 211. **20th Century Devices** (4) Surveys

post-Romantic harmony, counterpoint, and form. Fewer than 4 units may be taken by independent study. Graduate units earned through additional study projects and a final paper. Prerequisites: ETC 11-18 or equivalent.

ETC 213. **Advanced Analysis** (3) Includes comparison of current modes of analysis. Graduate units earned through additional study projects and a final paper. Prerequisite: ETC 11-18 or equivalent.

ETC 291. **Independent Study** (1-4)

ETC 293. **Special Topics** (1-2)

ETC 299. **Thesis** (3)

Music Therapy Department

ETH 11. **Introduction to Creative Arts Therapy** (3) Overview of music, dance, art and drama therapy. Visitations to clinical settings, lectures by therapists in each of the arts, and videotapes/films comprise the course format. Goals, objectives and creative arts therapy techniques are discussed in relation to exceptional children and adults seeking therapy.

ETH 118. **Basic Skills in Music for Special Education** (3) A course in developing specific competencies in recreational instruments (guitar, autoharp, recorder, etc.) and basic leadership skills for group management with special populations. (Open to non-majors.)

ETH 135. **Music Therapy Techniques with Children** (4) Study of various disorders and treatment methods of children and adolescents in music therapy. Role playing of methods and clinical practicum with developmentally disabled and multiple handicapped children and adolescents. Small group and individualized clinical supervision.

ETH 140. **Psychology of Music** (4) Psychological foundations of music including the study of acoustics, examination of current research in music therapy and applied research methodology. Lab included. (No prerequisites; open to non-majors at least junior standing. For music therapy majors only, a clinical practicum with learning handicapped children and adolescents is included.)

ETH 141a. **Influence of Music on Behavior: Adults I** (4) Study of disorders and various counseling and psychotherapeutic techniques. Clinical practicum with geriatric or adults with psychogenic disorders. (Majors only.)

ETH 141b. **Music in Therapy: Adults II** (4) Study of psychotherapeutic and counseling techniques with adults, emphasizing creative arts therapies. Clinical practicum with adult psychiatric or community mental health facilities. (Majors only.)

ETH 142. **Supervisory Techniques** (0-2) Techniques in the supervision of clinical practice. Course open to majors by permission of the instructor only.

ETH 191. **Independent Study** (1-2)

ETH 193. **Special Topics** (1-2)

ETH 198. **Internship in Music Therapy** (2) Six month internship at approved NAMT clinical setting. May be enrolled in internship only after all academic work for the degree pro-

gram is completed.

ETH 235. **Music in Special Education** (3) Music learning with special populations in the mainstreamed classroom. Students will learn to set appropriate music objectives and design teaching strategies utilizing music for the handicapped child in the public school. (Open to non-majors.)

ETH 242. **Contemporary Issues in Music Therapy** (3) Current ethical and legal problems in the health field. Study of the theoretical and research foundations of the creative arts therapies.

ETH 243. **Research in Music Therapy** (3) Advanced research in music therapy. Unique concerns of research in the arts and applied research will be addressed. Pilot data may provide a preliminary investigation for the thesis.

ETH 244. **Community Approaches to Music Therapy** (3) Exploration of changing mental health practice, private practice, specialization, community health centers and the team approach.

ETH 245. **Clinical Clerkship in Music Therapy** (1-4) As an alternate requirement for Thesis, Clinical Clerkship is designed for students who may want to focus on clinical skills and knowledge. Student completes a major project related to an applied therapeutic or educational setting.

ETH 291. **Independent Study** (1-4)

ETH 293. **Special Topics** (1-2)

ETH 299. **Thesis** (3) Option A: an original monograph embodying original research. Option B: approved clinical clerkship in lieu of written thesis.

Conservatory of Music Faculty

Carl E. Nosse, Dean, Conservatory of Music, Professor of Theory-Composition, 1980, B.A., Tarkio College, 1954; M.M., Duquesne University, 1961; D.M., The Florida State University, 1973.

Stanworth R. Beckler, Professor of Music Theory, 1955, B.A., B.M., University of the Pacific, 1950; M.A., 1951; Eastman School of Music (University of Rochester), 1959, 1961; Composition study with Wayne Barlow (Eastman) and George Perle, USC, (1965).

Derrill Bodley, Part-time Lecturer in Music Composition, B.M., Eastman School of Music (University of Rochester), 1967; M.M., Eastman School of Music (University of Rochester), 1975.

*K. Allen Brown, Assistant Professor of Percussion, Director of Jazz Bands, 1981, B.M., University of Oregon, 1969; M.M., Western Michigan University, 1972; Doctoral study at the University of Illinois. Percussion student of David Shrader, Robert Tilles and Thomas Siwe. Wide range of experience in all areas of percussion performance. Author of articles in professional journals and composer of several published percussion works.

George L. Buckbee, Professor of Music, Music Director, Opera Theatre, 1973, B.S.M., The College of Wooster, 1953; M.M.,

Eastman School of Music (University of Rochester), 1954; Sibelius Academy, 1964-68; Former Director, Opera Studio, Sibelius Academy; Former conductor, Finnish National Opera, Norwegian Opera; Former member, Finnish National Opera (Helsinki); Opera Under the Stars (Rochester); Finnish National Radio Symphony Orchestra (pianist); Finnlevy recordings (performer and translator); Lecturer, Bayreuth Youth Festival, 1975; Soloist with Prima Donna Players (San Francisco), Camellia Symphony Orchestra, Professor of Opera, Sibelius Academy, 1977-78; Lecturer and Soloist Finnish, Norwegian, Bavarian Radio and TV; Conductor-in-Residence, Stockton Symphony Orchestra since 1986.

Ronald J. Caviani, Associate Professor of Music Composition, 1978, Acting Chair, Department of Music Composition, 1990, B.Mus. Ed., Northern Michigan University, 1962; M.M., Notre Dame University, 1964; Composition study with Dr. Carl Hager, George Wilson, H. Owen Reed, James Niblock (electronic) Conductor, Upper Peninsula (Michigan) Youth Orchestra.

***Mark Ross Clark, Director of Opera and Assistant Professor of Applied Music-Voice, 1973, B.M., Indiana University, 1974; M.M., Indiana University, 1980; Diplom Mozarteum Salzburg, Austria. Soloist Los Angeles Phil, Seattle Symphony, Cincinnati Symphony, Vancouver Symphony and Roger Wagner Chorale, Stadtheatre Giessen, W. Germany.**

***Rex Cooper, Professor of Piano, 1973, B.M., Oberlin College Conservatory of Music, 1969; M.S., Juilliard School of Music, 1970; Mus.D., Indiana University, 1987; Student of Adele Marcus, Konrad Wolff, Leon Fleisher, Howard Aibel (Accademia Chigiana, Siena), Gyorgy Sebok and Vlado Perlemuter (Paris). Former member, American Symphony Orchestra; concert tours, Japan; recordings CRI; London debut recital, 1977; New Era International Artists Management.**

Joan Coulter, Assistant Professor of Piano, 1971, B.M., University of the Pacific, 1953; Professional accompanist and former ensemble performer at Whittier College, Fullerton College, Orange County Chamber Concerts, California State University, Stanislaus, Scripps College, University of the Pacific; Former student of Edward Shadbolt and Lillian Steuber.

***Marvin Donald DaGrade, Professor of Bassoon, 1970, B.S., Brigham Young University, 1959; M.M., Indiana University, 1965; Mus.D., 1969; Student of Leonard Sharrow, Henry Gulick, Harry Houdeshel; Member, Pacific Arts Woodwind Quintet, which records on Orion Label; Sacramento Symphony.**

William J. Dehning, Professor of Choral Music, Director of Choral Activities, 1972, B.A., University of California, Los Angeles, 1966; M.M., University of Southern California, 1967; D.M.A., 1971; Student of Charles Hirt, Ingolf Dahl, Helmuth Rilling and John Alldis; Frequent Guest Conductor and Clinician, Western States; European Concert Tours;

Prize winner, International Choral Competition (Austria); Lecturer at Munich Hochschule für Music, 1988; founding Conductor, California Choral Company.

Thomas Derthick, Lecturer in Double Bass, B.M., California State University, Sacramento. Graduate study, California State University, Long Beach. Studied with Murray Grodner, Stuart Sankey and Abe Luboff. Principal Bass with the Sacramento Symphony and Chamber Orchestra.

***William C. Dominik, Professor of Woodwind Instruments, 1967, B.M., Michigan State University, 1949; M.M., University of Southern California, 1950; D.M.A., 1964; Student of Clark Brody, Robert Marcellus, Kalman Bloch, Joseph Siniscalchi and Keith Stein; Member, Pacific Arts Woodwind Quintet, which records on the Orion Label.**

H. Richard Etlinger, Assistant to the Dean, Associate Professor of Music Management/Business, 1982, B.A., University of Michigan, 1950; L.L.B., University of Miami School of Law, 1953; J.D., 1983; Former instructor Music Business, Extension Division University of California, Los Angeles; Former Vice-President, Business Affairs and General Counsel to Casablanca, Motown, Playboy and RCA Records.

***U. Wolfgang Fetsch, Professor of Piano, Chair, Department of Applied Music, 1967, B.M., University of Denver, 1952; M.M., 1953; Mus.D., Indiana University, 1958; Student of Rudolf Fetsch, Bela Bozsormenyi-Nagy; Concert tours in United States and Japan.**

Donald C. Gorder, Assistant to the Dean, Associate Professor of Music Management/Business, 1989, B.M., University of Nebraska, 1973; M.M., University of Miami, 1975; J.D., University of Denver College of Law, 1980; Private law practice emphasizing entertainment and copyright; Trumpet student of Dennis Schneider and Harry Glantz.

Robert Halseh, Assistant Professor and Director of Bands, Doctor of Arts, University of Northern Colorado, Greeley, 1987; M.A., California State University, Fresno, 1970; B.A., California State University, Fresno, 1964. Fresno Philharmonic Orchestra, Colorado Philharmonic Orchestra, San Diego Symphony, Milwaukee Ballet.

Lois N. Harrison, Associate Professor of Music Education, Chair, Department of Music Education, 1985, B.S., Trenton State College, 1951; M.A., Teachers College Columbia University, 1953; Ed.D., 1974; former Associate Professor University of Oregon; instrumental, general music and choral teacher, public schools K-12; organ student of Grady Wilson and Alec Wyton; author *Getting Started in Elementary Music Education* (Prentice-Hall, 1983), *Getting Started in Music* (Prentice-Hall, 1989); Visiting Fellow, Western Australian College of Advanced Education, 1983; Lecturer at New South Wales State Conservatorium of Music, 1990.

Karen Hastings, Part-time Visiting Lecturer

in Organ/Harpsichord, D.M.A., Stanford University, 1987; M.A., San Jose State University, 1978; B.A., San Jose State University, 1976.

John Randal Hawkins, Part-time Lecturer in Piano, D.M.A., Peabody Conservatory of the Johns Hopkins University, 1986; M.M., Peabody Conservatory of the Johns Hopkins University, 1980; B.M., Furman University, 1978. Winner of Merit Award, Casagrande International Piano Competition, 1986. Participated in Busoni International Piano Competition, Bolzano, Italy, 1987.

Carol Hayes, Lecturer in Piano, 1975, B.M., University of the Pacific, 1970; M.M., 1972; Student of Ruth Hayes, Edward Shadbolt; Soloist with Sacramento Symphony, Stockton Symphony.

Marylee Hicks, Lecturer in Harp, 1975, B.M., Eastman School of Music (University of Rochester), 1951; M.A., Sacramento State College, 1957; Former member (harp) Kansas City Philharmonic and Sacramento Symphony Orchestra; Student of Kajetan Attl and Eileen Malone.

***Ira C. Lehn, Professor of Violoncello, 1968, B.M., Eastman School of Music (University of Rochester), 1952; Performer's Certificate, 1952; M.M., 1953; Former member Rochester Philharmonic, Tulsa Philharmonic (principal), Ventura Symphony (principal), and Alard Quartet; Soloist with Philadelphia, Monterey, Santa Barbara and Ventura orchestras; Student of Gabor Rejto; Member Stockton and Sacramento Symphonies, Sierra String Quartet. Former dean, UOP Conservatory of Music.**

Terry E. Mills, Lecturer in Guitar, 1972, B.M., University of the Pacific, 1971; Student of Phillip deFremery and Oscar Ghiglia. Lute studies with Robert Strizich, Anthony Rooley and E. M. Dombois.

***George L. Nemeth, Professor of French Horn, Chair, Department of Music History, 1970, B.M., Eastman School of Music (University of Rochester), 1965; M.A., 1967; Ph.D., Stanford University, 1977. Former member of Rochester Philharmonic; Student of Verne Reynolds, Charles Warren Fox; Member, Pacific Arts Woodwind Quintet, which records on the Orion label. Former principal horn, Stockton Symphony.**

Thomas F. Nugent, Part-time Visiting Lecturer in Oboe, 1990, B.M. S.F. Conservatory of Music, 1984. Principal, Fresno Philharmonic; Tanglewood Music Festival; San Francisco Symphony; San Leandro Chamber Orchestra; Spoleto Festival; Sacramento Symphony; Marin Symphony.

Audree O'Connell, Assistant Professor in Music Therapy, 1981, B.A., Northern State College, 1954; M.A., University of the Pacific, 1984. Registered and certified Music Therapist. Student of Jennie Tourel and Nadia Boulanger.

Jean Purnell, Music Librarian, Master of Science in Library Science, University of North Carolina at Chapel Hill, 1980; Master of Arts in Musicology, University of North Carolina

at Chapel Hill, 1980; B.A., Wake Forest University, Winston-Salem, N.C., 1976.

Clayton M. Shotwell, Assistant Professor and Assistant to the Dean, 1989; B.A., Hastings College, 1970; M.M., University of Minnesota, 1974; Ph.D., University of Minnesota, 1987; Former Director, Academy of Performing Arts in San Antonio, TX.

***Warren van Bronkhorst, Professor of Violin, 1967,** B.A., San Jose State University, 1950; M.M., Eastman School of Music (University of Rochester), 1951; Performer's Certificate, 1956; D.M.A., 1959; Student of Taylor, Ribaupierre, Jacobson, Rejto and Griller Quartet; Former member of orchestras in Honolulu (concertmaster), Rochester, Sacramento and Stockton (concertmaster); Former first violin, Illinois String Quartet; Concert tours in United States; Member, Sierra String Quartet; Pleiades Recordings.

Michael N. Vax, Lecturer in Trumpet, studied at the University of the Pacific. Formerly 1st Trumpet with Stan Kenton Orchestra. Extensive performance experience with numerous orchestras, bands and Brass Ensembles.

***William Whitesides, Professor of Voice, 1978,** B.S., Davidson College, 1951; M.A., University of North Carolina (Chapel Hill), 1954; Graduate study, Juilliard School of Music, 1958-60; Fulbright Scholar, Cologne, Germany; Recitals at Town Hall and Carnegie Recital Hall (New York); National Gallery (Washington D.C.); American Institute of Musical Studies (Graz, Austria); soloist with orchestras in New Orleans, Louisville, Cologne (Germany), Berne (Switzerland); Leading tenor with Empire State Music Festival, Theatre der Stadt (Bonn, Germany), Stadttheater (Berne, Switzerland), Kentucky Opera Association, Santa Fe Opera, San Francisco Opera. Recordings with Vox, Pleiades, Louisville Orchestra.

***Frank H. Wiens, Professor of Piano, 1976,** B.M., University of Michigan, 1970; M.M., 1971; Student of Benning Dexter, Gyorgy Sandor, Harald Logan and John Perry. New York debut recital, 1984, Carnegie Recital Hall. London debut recital, 1986. Soloist with Atlanta, Denver and Detroit Symphonies. Concert tours in United States, Asia and Europe.

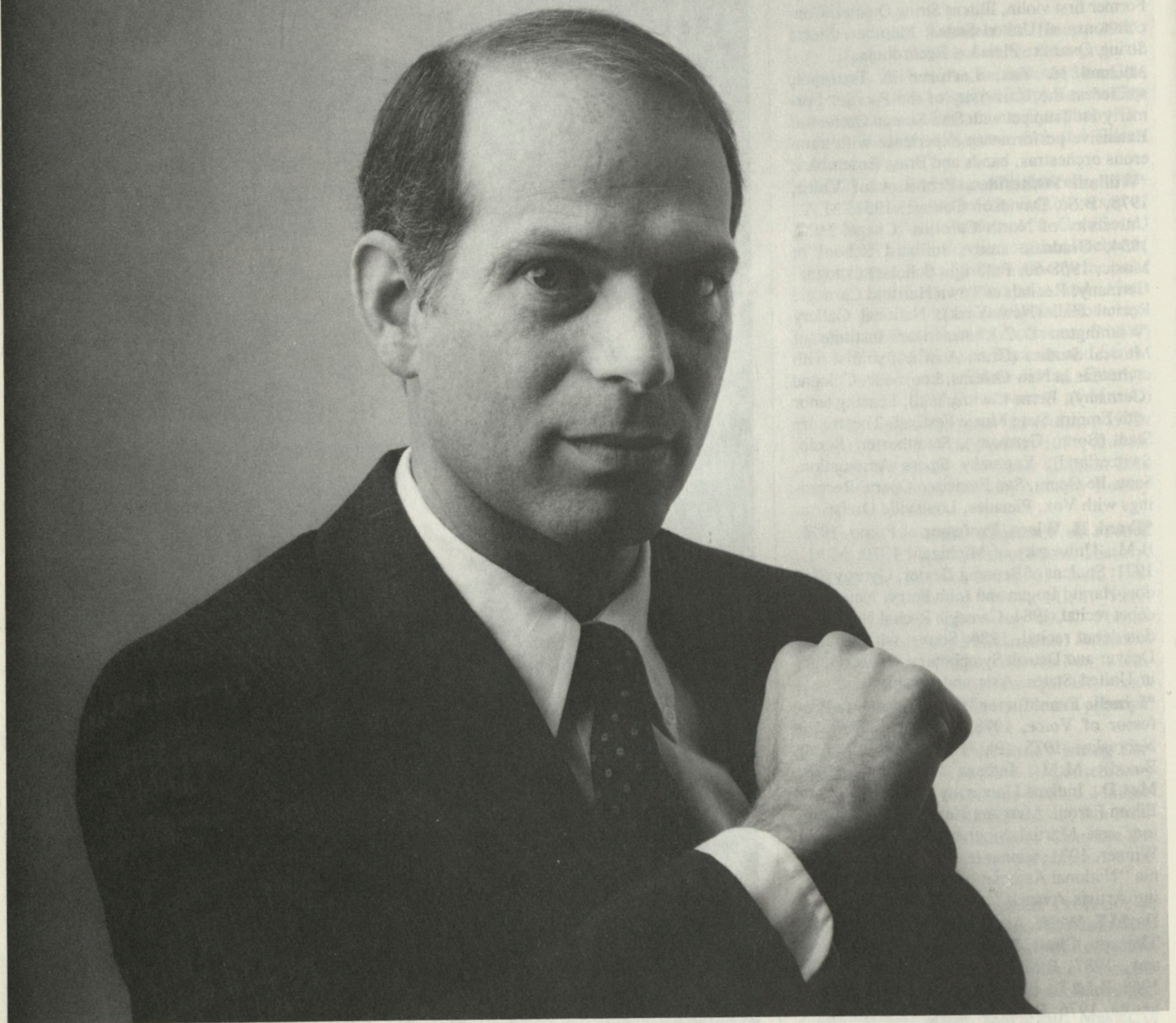
***Lynelle Frankforter Wiens, Associate Professor of Voice, 1978,** B.M., University of Nebraska, 1975 (Phi Beta Kappa, Mortar Board); M.M., Indiana University, 1978; Mus.D., Indiana University, 1988. Student of Eileen Farrell, Margaret Harshaw, Martha Lip-ton, and Martial Singher. MTNA National Winner, 1971; winner in the Northern California "National Association of Teachers of Singing Artists Awards" (San Francisco), 1984.

David E. Wolfe, Associate Professor of Music Therapy, Chair, Department of Music Therapy, 1987, B.M., Florida State University, 1968; R.M.T., 1969; M.A., University of Minnesota, 1976; Behavior Analyst Certification, 1976; Ph.D., Florida State University, 1979.

***Members of Resident Artist Series**



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experience a diverse,
challenging and nurturing
environment which prepares
them for successful careers
as leaders in business,
government and not-for-
profit organizations."**



**Mark S. Plovnick, Dean
School of Business and Public Administration**

SCHOOL OF BUSINESS AND PUBLIC ADMINISTRATION

A professional school of the University of the Pacific offering undergraduate education in business and public administration.

The School of Business and Public Administration was established to fulfill the need for a small, high quality, undergraduate management program that could nurture the personal, professional, and overall intellectual growth and development of young men and women. Consistent with this approach to education is the continuing commitment of faculty and administrators to making teaching the most important activity in the School. Small classes and excellent instructional facilities reinforce a highly personalized learning environment that encourages one-on-one interactions between students and faculty. Outside of the classroom students choose from a wide variety of activities, including internships and student clubs and societies, to further develop their leadership skills. The success of this approach to business and management education is reflected in the excellent job placement record of SBPA graduates.

The School of Business and Public Administration, established in 1977, currently has twenty-four full-time faculty and an enrollment of 500 undergraduates. Because of the high quality of its faculty, programs, and graduates, the School earned accreditation by the American Assembly of Collegiate Schools of Business (AACSB) in 1983, the first year it became eligible for such recognition. It is one of only sixteen undergraduate schools in the country accredited by the AACSB.

For most business students, a major objective of their college education is to prepare for a successful career. Surveys of successful executives suggest that to meet the challenges and opportunities of the future, tomorrow's managers will need a strong educational foundation. Today's executives strongly recommend that students of business and management seek a broad-based education that combines the acquisition of business skills in such areas as marketing, finance, human resource management, and accounting, with a solid foundation in mathematics, language, and the arts and sciences. In particular, business leaders emphasize the importance of acquiring people skills, especially the ability to communicate effectively. These managers also stress the importance of learning how to learn, so that education can continue, formally and informally, throughout an individual's life.

Mission

The School of Business and Public Administration was founded on the same educational

philosophy now being advanced by contemporary business leaders. This philosophy, as well as the School of Business and Public Administration's commitment to excellence in undergraduate education, is expressed in its mission statement:

to prepare students for successful careers as leaders in business, government, and not-for-profit organizations by providing a challenging and nurturing learning environment in which they can develop technical, analytical, and interpersonal skills; ethics and integrity; appreciation of society's cultural heritage; insight into the complexities of the world in which they live and work; and the confidence and desire to use this knowledge and skill in the pursuit of excellence.

The undergraduate programs in business and public administration at SBPA are designed to fulfill this mission and to provide the educational breadth and depth tomorrow's leaders will need.

Programs in Business Administration

The School of Business and Public Administration offers the bachelor of science degree in Business Administration and a minor in management. The four-year degree program requires the completion of 128 total units. The program has three segments: preprofessional skills requirements; core courses of technical subjects in business and management; and an area of concentration. The specific requirements are outlined below.

The SBPA Preprofessional Program

General Education 36 Units

The University requires that all students have course work in liberal learning and basic skills in quantitative methods and expository writing. This program of general education is described earlier in this catalog and is required by all business administration degree candidates. Further, the School of Business and Public Administration follows the philosophy that tomorrow's leaders should have a broad background in general education. To insure a broadly based preprofessional education, no courses taught within the School of Business and Public Administration can be used by business administration students to fulfill the general education requirements.

Preprofessional Skills 24 Units

Skills in writing, communications, quantitative methods, computers, and economics are basic to a professional education in business administration. The exact sequence of these courses taken by students depends upon the results of placement tests in mathematics and writing. All SBPA students must consult with their faculty advisers before registering. The following preprofessional skills courses are required:

1. **Advanced Writing:** AEN 25, Reader, Writer, Text.*
2. **Public Speaking:** ACO 27, Public Speaking.
3. **Mathematics:** AMA 33, Calculus for Decision Making* and AMA 37, Probability and Statistics.
4. **Computer Literacy:** ACS 25, Computers and Information Processing and ACS 125, Information Systems.
5. **Economics:** AEC 53, Microeconomics and AEC 55, Macroeconomics.*

*These courses are also part of the UOP General Education program, and can be counted towards the University General Education requirements.

Bachelor of Science in Business Administration

Business Administration Core Requirements 41 units

The core requirements for the business administration degree consist of the Dean's Seminar (required only for entering freshmen) and 10 other courses that deal with specific functions of business. Included are financial accounting; managerial accounting; business law; business, government, and society; operations management; finance; marketing, management and organizational behavior; international business; and strategic management and policy.

Business Administration Concentrations 12-24 units

The Bachelor of Science in Business Administration offers concentrations in a wide variety of areas including Accounting, Finance, Marketing, International Management, Organization and Management, Public Management, Real Estate, Entrepreneurship, Arts and Entertainment Management, and General Business. An approved concentration generally consists of three courses (12 units) in elective work within the concentration, except in the case of the accounting concentration which requires 6 courses (24 units), and Arts and Entertainment Management.

Two types of concentrations are available, those in core areas such as accounting or finance, and those in specialty areas such as Real Estate or Public Management.

Core Area Concentrations

Accounting

LBA 113A and B (Intermediate Accounting I and II), LBA 113C (Advanced Accounting), LBA 115 (Tax Accounting), LBA 117 (Cost Accounting), and LBA 119 (Auditing).

Finance

LBA 121 (Financial Markets) and LBA 123 (Investment Analysis), plus one course from the following: LBA 124 (Financial Management in the Public Sector); LBA 125 (Intermediate Financial Management); LBA 127 (Topics in Finance); LBA 129 (Real Estate Investment Analysis); and LBA 163 (International Financial Management).

International Management

Any three of the following courses: LBA 163 (International Financial Management); LBA 165 (International Marketing); LBA 168 (Multinational Strategic Management); LBA 169 (Comparative Management); and LBA/LPA 133 (International Business-Government Relations).

Also, each student concentrating in international business would be strongly advised to do one of the following:

- study and/or internship abroad for a semester or summer; or
- demonstrate competency in a foreign language, either through examination or the completion of twelve units of college level language courses; or
- take a minimum of twelve units outside SBPA in international or cross-cultural courses (e.g. cultural anthropology).

Marketing

LBA 141 (Marketing Research) and LBA 147 (Consumer Behavior), plus one course from the following: LBA 139 (Public/Nonprofit Marketing); LBA 145 (Retailing and Channels); LBA 149 (Promotion Management); and LBA 165 (International Marketing).

Organization and Management

Three of the following courses (with a minimum of two selected from LBA 171, LBA 173, or LBA 175): LBA 134 (Conflict Management); LBA 169 (Comparative Management); LBA 170 (Human Resources Management); LBA 171 (Individual and Group Behavior); LBA 173 (Designing Effective Organizations); and LBA 175 (Management of Change).

General Business

Any three SBPA concentration level courses. A student can also obtain a general business concentration by completing any two concentration level courses plus a minor in economics.

Students can also develop concentrations in a number of specialty areas, each of which tend to focus on a particular industry. Following is a listing of the requirements for concentrations in several such specialty areas. Specialty concentrations are possible subject to the availability of the courses listed. Additional specializations not listed below are also possible and can be self-designed by a student with the approval of his/her faculty advisor and the Dean's Office.

Public Management

Any three courses from: LBA 124 (Financial Management in the Public Sector); LBA 132 (Public Policy Analysis); LBA 133 (International Business-Government Relations); LBA 134 (Conflict Management); LBA 135 (Dispute Resolution); LBA 136 (Public Management Seminar); LBA 139 (Public/Nonprofit Marketing).

Real Estate

LBA 127 (Legal Aspects of Real Estate); LBA 128 (Real Estate Markets); and LBA 129 (Real Estate Investment Analysis).

Entrepreneurship

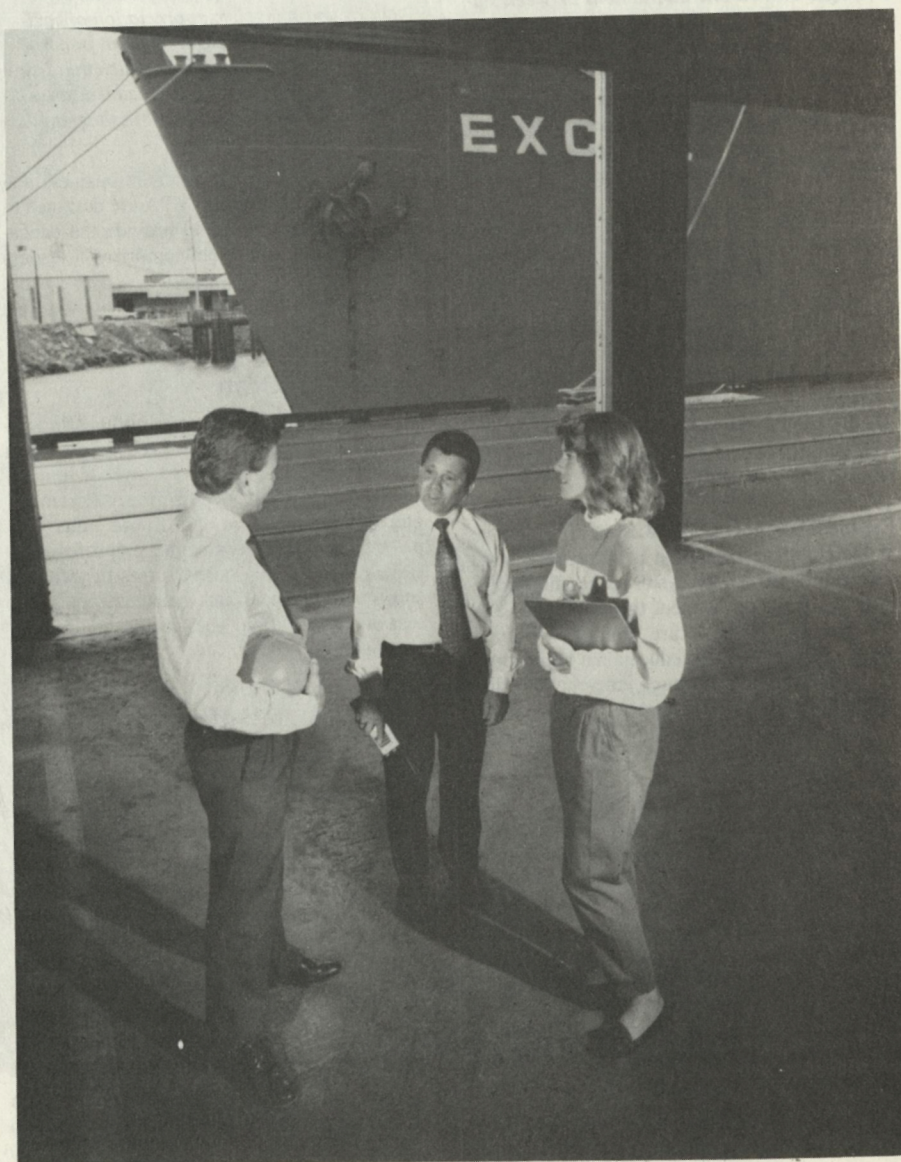
LBA 172 (Entrepreneurship) and LBA 176 (Managing Small Businesses); plus one of the following: LBA 117 (Cost Accounting); LBA 141 (Market Research); LBA 143 (Product Innovation).

Arts and Entertainment Management

Three options are available within this specialty. Each requires six courses for the concentration:

Entertainment Management

LBA 139 (Public/Non-Profit Marketing); EMB 11 (Music Entertainment in U.S. Society); EMB 153 (Entertainment Law) or EMB 154



(Arts Law); EMB 195 (Music Industry Analysis); EMB 97 (Performing Arts Administration); EHI 5 (Music Appreciation).

Visual Arts Management

LBA 139 (Public/Non-Profit Marketing); EMB 11 (Music Entertainment in U.S. Society); EMB 153 (Entertainment Law) or EMB 154 (Arts Law); AAR 31 (Design and Color); AAR 136 (Visual Arts Management); AAR 116 (Contemporary Art).

Theatre Arts Management

LBA 139 (Public/Non-Profit Marketing); EMB 11 (Music Entertainment in U.S. Society); EMB 153 (Entertainment Law) or EMB 154 (Arts Law); ADR 35 (Expression Through Movement); ADR 51 (Introduction to the Theatre); ADR 163 (Theatre Management).

Sample Schedule of Classes for the B.S. in Business Administration

The following outline is an example of how an entering freshman may proceed through the program in any concentration except accounting.

Freshman Year Fall Semester

LBA 10, Deans' Seminar
AEC 53, Microeconomics
AMA 33, Calculus for Decision Making
AEN 25, Reader, Writer, Text
General Education Course

Freshman Year Spring Semester

AEC 55, Macroeconomics
AMA 37, Probability and Statistics
General Education Course
General Education Course

Sophomore Year Fall Semester

ACS 25, Computers and Information Processing
ACO 27, Public Speaking
LBA 31, Principles of Financial Accounting
General Education Course

Sophomore Year Spring Semester

LBA 33, Principles of Managerial Accounting
LBA 53, Business Law
LBA 101, Business, Government, and Society
General Education Course

Junior Year Fall Semester

LBA 105, Financial Management
LBA 106, International Business
LBA 107, Marketing Management
General Education Course

Junior Year Spring Semester

LBA 104, Operations Management
LBA 109, Management and Organizational Behavior
ACS 125, Information Systems
General Education Course

Senior Year Fall Semester

Business Administration Concentration Course
Business Administration Concentration Course
Free Elective
Free Elective

Senior Year Spring Semester

Business Administration Concentration Course
LBA 181, Strategic Management and Policy
Free Elective
Free Elective

Notes

1. Most of the courses listed for fall or spring may be taken either semester.
2. The Deans' Seminar is required of all SBPA freshmen.
3. All prerequisites must be met before students may enroll in any course.
4. Students taking any course numbered above LBA 101 must have junior class standing.

Minor in Management

The Minor in Management is intended to provide an exposure to general management principles and some functional area technical skills for students majoring in disciplines outside of the SBPA. The Minor is not intended as a substitute for the broad in-depth coverage found in the business or public administration degree. Non-SBPA students can obtain a Minor in Management by fulfilling the following requirements:

1. LBA 31, Principles of Financial Accounting;
2. LBA 109, Management and Organizational Behavior; and
3. Any three other courses offered by the School of Business and Public Administration, excluding the Dean's Seminar.

Students minoring in Management must fulfill all prerequisites and junior class standing requirements for SBPA courses. These students must also exercise caution in not violating the University's restriction which allows only 30 units of LBA courses to be credited towards the degree requirements of non-SBPA majors.

General Academic Regulations

Graduation Requirements

In order to receive a B.S. degree in Business Administration or Public Administration, a student must:

1. Complete at least 128 units, including the University General Education requirements and the specific requirements of the major program.
2. Achieve a minimum grade point average of 2.0 in the major program, calculated both ways, i.e., including and excluding relevant

transfer grades.

3. Fulfill the minimum residency requirement of 32 out of the last 40 semester units of registration at UOP just prior to receiving the degree.
4. Fulfill the SBPA minimum residency requirement of at least 32 units taken in the School.

Academic Honors

Upon the recommendation of the faculty, honors at graduation are awarded to students achieving the following cumulative and UOP grade point averages: honors, 3.50; high honors, 3.80. Each semester students earning a grade point average of 3.50 or higher in twelve or more letter graded units are placed on the Dean's List.

Grading Policies

All courses required of all business administration majors and public administration majors must be taken for letter grade. SBPA courses taken beyond those noted above may be taken on a P/NC basis subject to the instructor's approval. The Dean's Seminar will be offered P/NC only.

Students receiving a "P" in SBPA courses taken before becoming a major in the SBPA must petition to the Academic Standards Committee for courses to be applied toward graduation requirements.

Scholastic Actions

In addition to the University policies concerning probation and disqualification, the SBPA enforces the following:

1. If a student has a balance point deficiency up to -8 in the major, he/she is on SBPA probation.
2. If a student has a balance point deficiency larger than -8 in the major, he/she is subject to being disqualified from the SBPA. Disqualification decisions usually will be made at the end of the Spring semester, but a student who begins the Fall semester already on probation with a balance point deficiency of -8 or more may be disqualified from the SBPA at the end of Fall semester if still at -8 or more at the end of that semester.

The Academic Regulations and Standards Handbook of the SBPA contains further clarification of these policies.

Transfer Units

Transfer courses must have a credit value of at least three semester units if they are to be applied to general education, breadth or major requirements. Courses from institutions on the quarter system must have a credit value of at least four quarter units to be applied to the above categories.

Admissions Information

Additional information and specific admissions requirements can be found in the section of this

bulletin entitled Admission Requirements or by contacting the Dean, School of Business and Public Administration, University of the Pacific, Stockton, California 95211.

Junior or community college students who plan to complete upper division work in business or public administration at University of the Pacific should complete one year of introductory economics, one year of introductory accounting, a semester each of calculus and statistics, and a semester of business law. Students should also complete courses in expository writing, computer science, public speaking, and the humanities. It is strongly advised that students who do plan to transfer contact the SBPA with specific questions regarding transfer credit.

Course Descriptions

Business Administration

LBA 10. Deans' Seminar (1) A general survey of the programs and methodologies of the School of Business and Public Administration, including but not limited to educational requirements, professional orientation, career opportunities, and School and University regulations. Required of all SBPA freshmen.

LBA 31. Principles of Financial Accounting (4) Analysis, recording and reporting of business transactions; analysis and use of financial statements; and the use of accounting information in management decision-making.

LBA 33. Principles of Managerial Accounting (4) Use and analysis of accounting information for management decision-making in planning, production, evaluation and control decisions. Prerequisite: LBA 31.

LBA 53. Business Law (4) An introduction to the American legal system through examination of basic legal concepts and procedures. Special attention is given to the business-related law of torts, contracts and agency.

LBA 55. Business Law II (4) A second course in legal topics of interest to business students, including the Uniform Commercial Code, anti-trust regulation, securities regulation, bankruptcy and consumer protection. Prerequisites: LBA 53, junior standing.

LBA 81. Introduction to Business (4) This course is designed for majors in other programs at UOP who want exposure to the theory and practice of the science of administration. It is also designed to give an overview of managerial functions and responsibilities to students who are considering transferring into Business or Public Administration. Emphasis in this course is placed upon the integration of the separate functional areas of activity engaged in by organizations. This emphasis is predicated on the view that the goals of the entire organization cannot be achieved without such integration. This cannot be counted as a concentration course.

LBA 82. Public Management (4) The primary purpose of this course is to enable students to

develop a clear understanding of the concepts and methods of management in the public sector (government and private not-for-profit organizations). It is also intended to introduce students to the relationship between public and business management and to consider the role of private organizations in the public policy process. This cannot be counted as a concentration course.

LBA 93. Special Topics (4)

LBA 101. Business, Government and Society (4) A systematic analysis of the social, economic and ethical responsibilities of U.S. business organizations and the relationship of such organizations to various stakeholder groups (consumers, communities, stockholders, government and others), and to society as a whole. The focus is on the management of these relationships and on managerial accountability in an ethical, economic and political/social context. Specific topics include: (1) legal, political and ethical criteria for judging business decisions; (2) the maintenance of competition; (3) due process for employees; (4) relationships with minority, consumer and ecological interest groups; and (5) the influence of public policy on business and of business on public policy.

LBA 104. Operations Management (4) Analysis of production and operations systems in the organization; application of quantitative methods in solution of production and operations problems with major emphasis on managerial and economic implications. Prerequisites: AEC 53, 55; AMA 33, 37; LBA 31, 33, an acceptable computer course, junior standing.

LBA 105. Financial Management (4) This course introduces financial instruments and institutions from the perspective of the financial management of the firm. Tools of financial analysis and planning as well as principles of short-term and long-term financing are developed as they relate to profitability and liquidity. Prerequisites: AEC 53, 55; AMA 33, 37; LBA 31, 33, junior standing.

LBA 106. International Business (4) Consideration of the environment for international business and the issues facing the firm in trans-border transactions. Familiarization with the concepts, information sources and career opportunities in the field. Each student is asked to prepare a topical or country familiarization assignment. Prerequisites: AEC 53 and 55; junior standing.

LBA 107. Marketing Management (4) An introduction to the institutions, techniques, policies and procedures utilized in the planning and performance of the activities which direct the flow of goods from producers to consumers. Emphasis is placed on the managerial process of decision-making in the setting of marketing strategy. Prerequisites: AEC 53; junior standing.

LBA 109. Management and Organizational Behavior (4) The applications of the concepts of organizational behavior and structure theories to the managerial processes, with emphasis on organizational efficiency and effectiveness, are

developed. Prerequisite: junior standing.

LBA 113a. Intermediate Accounting I (4) Primarily a study of income measurement and asset valuation under generally accepted accounting principles. The course emphasizes current procedures, form and content of financial statements and critical evaluation of alternative accounting practices. Prerequisites: LBA 31 and LBA 33; junior standing.

LBA 113b. Intermediate Accounting II (4) A continuation of the study of generally accepted accounting principles. Topics studied include owners' equity, dilutive securities, pensions, leases, income taxes, statement of cash flows and inflation accounting. Prerequisites: LBA 113a; junior standing.

LBA 113c. Advanced Accounting (4) A study of advanced accounting theory and practice which includes accounting for intercorporate investments, partnerships, foreign currency transactions, government and non-profit organizations, and current topics. Prerequisites: LBA 113b; junior standing.

LBA 115. Tax Accounting (4) A course designed to develop proficiency in the application of federal income tax law as it applies to individuals. Prerequisites: LBA 31 and LBA 33; junior standing.

LBA 117. Cost Accounting (4) This course emphasizes skills used by management accountants or other decision-makers within an organization for planning and control. Topics include analysis of cost structures, profit planning, product cost systems, cost estimation, budgeting, as well as the behavioral implications of management accounting systems. Prerequisites: LBA 31, LBA 33, AMA 37; junior standing.

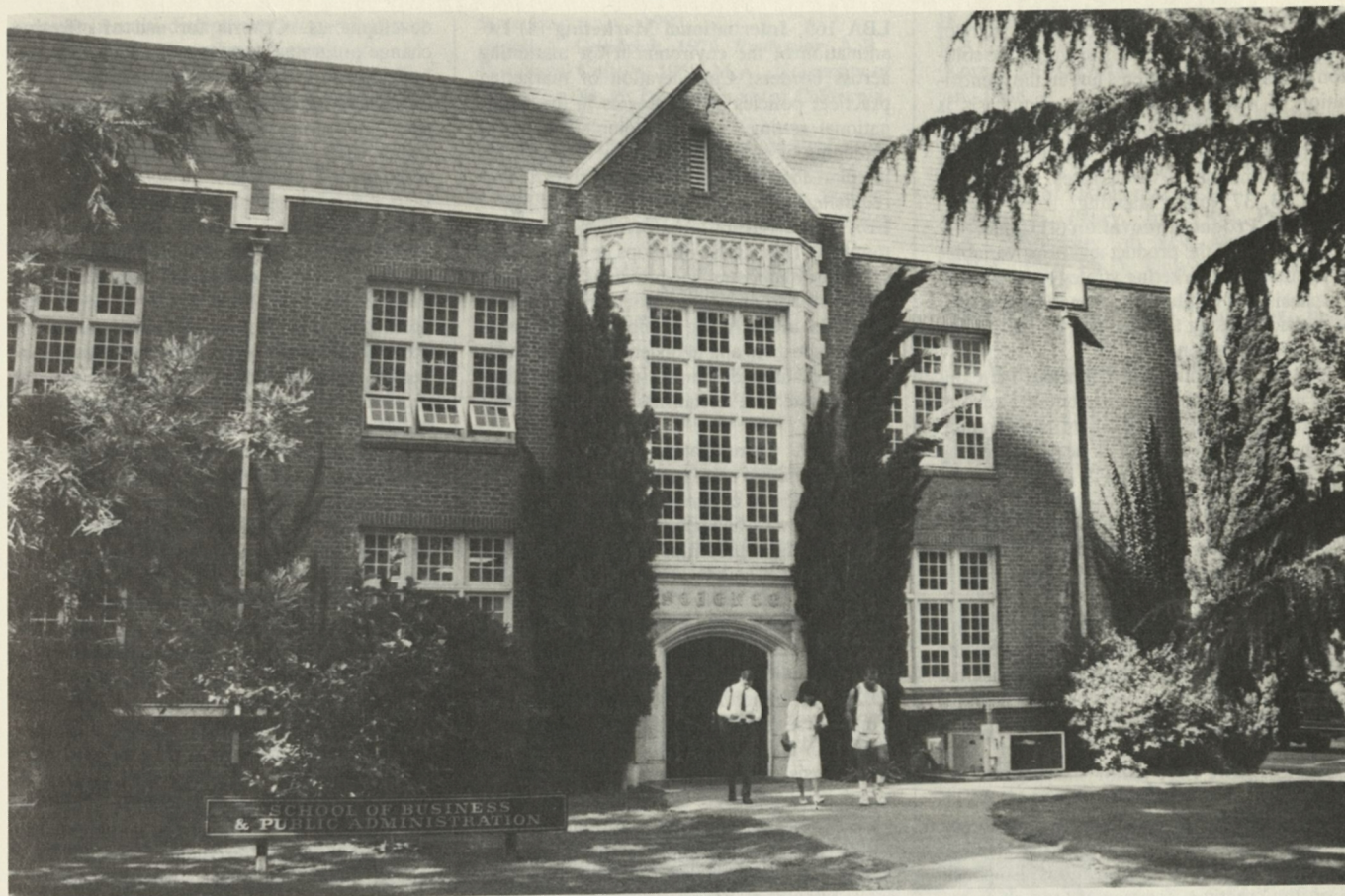
LBA 119. Auditing (4) A capstone course in accounting studying the integration of financial and management accounting systems. Topics include the attest function and ethics, generally accepted auditing standards, systems of internal control, evidence and audit reports. Prerequisites: LBA 113c; junior standing.

LBA 121. Financial Markets (4) An examination of the monetary transmission mechanism with emphasis on its implications for financial management of the individual firm. Topics include the institutions of money and credit creation, the flow-of-funds accounts and financial market subsection interconnection. Prerequisites: AEC 53, 55 or 103; LBA 105; junior standing.

LBA 123. Investment Analysis (4) The nature of securities markets and the characteristics of various types of securities for institutional and personal investment are examined. Sources of investment information, security valuation and investment planning are introduced. Prerequisites: LBA 105, 121, junior standing.

LBA 124. Financial Management in the Public Sector (4) This course focuses on important topics of financial management in the public enterprise, with specific applications to current governmental issues and innovations. Prerequisites: LBA 105; junior standing.

LBA 125. Intermediate Financial Manage-



ment (4) A second course in business finance with emphasis on problem solving. Selected problems in the management of long-term and short-term assets are examined in depth and techniques for optimizing the goals of the firm are developed. Prerequisites: LBA 105; junior standing.

LBA 126. Topics in Finance (4) This course will examine in-depth special topics of current interest in the field of finance. Students and faculty together will explore empirical and theoretical issues in such areas of finance as investment analysis, financial management, financial markets and other related areas. Prerequisites: LBA 105, 121; junior standing.

LBA 127. Legal Aspects of Real Estate (4) A study of the legal aspects concerning real estate and real estate transactions including deeds, listing agreements, title insurance, real estate contracts, closing, property taxation, land use regulations, and landlord — tenant relationships. Prerequisites: LBA 53; junior standing.

LBA 128. Real Estate Markets (4) A study of the economic, demographic, and spatial aspects of real estate markets and their impacts on value. Includes discussion of types of land uses, estimating supply and demand, and valuing properties. Prerequisites: LBA 105; junior standing.

LBA 129. Real Estate Finance (4) An examination of the theory and practice of real

estate finance, including such topics as the sources of mortgage funds, types of financing instruments, cost of borrowing, and secondary mortgage markets. Emphasis is placed on using financial analysis techniques to structure and evaluate financing alternatives. Prerequisites: LBA 105; junior standing.

LBA 132. Public Policy Analysis (4) This course focuses on analytical methods which can be utilized in the public policy process. It explores conceptual views of the policy process, methods of modelling policy choices, selected analytical techniques and cases and critiques the role of analysis in policy making and evaluation. Prerequisites: LBA 104; junior standing.

LBA 133. International Business-Government Relations (4) This course considers alternative roles for government and business in the international arena. Some form of government-business dialogue and negotiation is crucial to the international management scene, and several possible alternative roles for government and business will be analyzed, using specific projects and cases as a focus. Prerequisites: LBA 106; junior standing.

LBA 134. Conflict Management (4) Conflict is inevitable in organizational, interorganizational and international settings. This course deals with conflict in concept and in practice and is designed to provide insights into its causes and its productive and destructive con-

sequences. It also focuses on providing tools for managing conflict productively, emphasizing negotiation in particular. Prerequisites: LBA 109 or equivalent; junior standing.

LBA 135. Dispute Resolution (4) The emphasis of this seminar will be on resolving disputes with alternatives to litigation. Students will learn when and how to apply alternative dispute resolution to a variety of public and private sector disputes. The consequences of using litigation versus alternatives such as arbitration and mediation will be explored. Prerequisites: LBA 109 or equivalent; junior standing.

LBA 136. Public Management Seminar (4) This seminar provides for in-depth examination of special topics of current interest in public policy and management. An environment will be created whereby students and faculty together pursue issues involving theory and practice in various domestic and international policy areas as well as functional areas of public policy and management. Prerequisite: junior standing.

LBA 139. Public/Nonprofit Marketing (4) This course involves the study of marketing applications for public management. Emphasis is on developing skills in analyzing the marketing problems of nonbusiness organizations. Course topics also include specific concerns involved in the marketing of public agencies, services and ideas. Prerequisites: LBA 107; junior standing.

LBA 141. Marketing Research (4) A study of the concepts and techniques useful in the solution of marketing problems and in the identification of market opportunities. Emphasis is given to the design of information acquisition and to the evaluation and interpretation of research findings. Prerequisites: LBA 107; AMA 33, 37; junior standing.

LBA 143. Product Innovation (4) Consideration in-depth of the product and price variables as elements of marketing strategy and tactics. Emphasis will be placed on conceptual as well as decision-making aspects. Prerequisites: LBA 107; junior standing.

LBA 145. Retailing and Channels (4) Consideration in-depth of the distribution structure and strategies available to a firm, with emphasis on conceptual as well as decision-making aspects. Special attention will be given to the structure and management of retailing. Prerequisites: LBA 107; junior standing.

LBA 147. Consumer Behavior (4) A study of the bases for consumer behavior, including relevant information from social psychology, sociology and cultural anthropology. The application of analysis of consumers' behavior and attitudes to marketing management decisions. Among the management decision areas included are advertising, product policy, product development, marketing research and pricing. Prerequisites: LBA 107; junior standing.

LBA 149. Promotion Management (4) An in-depth study of the planning, development, and creative execution of promotional strategy of profit and non-profit organizations. Emphasis is on the creative, conceptual, and decision-making aspects of the total marketing communications mix, i.e., advertising, public relations, sales promotion, and personal selling. Prerequisites: LBA 147 and senior standing.

LBA 153. Labor-Management Relations (4) A study of labor movements and their impact on organizations and the economy. Prerequisites: AEC 53 and 55; junior standing.

LBA 155. Bargaining and Negotiation Processes (4) The study of economic, institutional and behavioral aspects of conflict resolution in the organization, with special emphasis upon the collective bargaining process in both the public and private sectors. Prerequisites: AEC 53; junior standing.

LBA 159. Employment Law (4) Consideration of major labor-management relations legislation and its interpretation and treatment by administrative agencies and the courts. Primary emphasis will be on the National Labor Relations Act as amended, but attention will also be given to law concerning public sector labor relations, employment discrimination and other related law. Prerequisites: LBA 53 and 170; junior standing.

LBA 163. International Financial Management (4) An analysis of management problems arising in an international financial environment. Specific consideration given to financial risk(s), risk management and international financial markets. Prerequisites: LBA 105, 106; junior standing.

LBA 165. International Marketing (4) Examination of the environment for marketing across borders. Consideration of marketing practice, policies and strategies in the multinational setting. Students complete a global screening of countries and draw up a marketing plan and strategy for a given product. Prerequisite: LBA 107, 106; junior standing.

LBA 168. Multinational Strategic Management (4) This course develops an understanding of the major strategic problems facing multinational corporations. Particular emphasis is on skills in analyzing competitive forces in global industries and in understanding the basis for successful international strategies and managerial systems. Prerequisites: LBA 106; junior standing.

LBA 169. Comparative Management (4) Consideration of management theory and practice in different cultures. Deals with the particular dilemmas and opportunities faced by firms and students as they function in multicultural settings. The course seeks to deepen both knowledge and skills. Methods used include lectures, readings, films, simulations, cases and written papers. Prerequisites: LBA 106, 109; junior standing.

LBA 170. Human Resources Management (4) This course introduces the P/HR management area with its core of activities which include job analysis, performance evaluation, employee acquisition, employee and management development, and compensation and benefits. The influences of the equal employment and civil rights laws, wage and hour laws, labor law and labor unions in organizational operations are studied. Prerequisites: LBA 109 or concurrent enrollment; junior standing.

LBA 171. Individual and Group Behavior (4) This is an advanced course in the behavior of individuals in organizations. The course will explore the topics of intra-group behavior, inter-group behavior, and control and motivation in organizations. Prerequisites: LBA 109; junior standing.

LBA 172. Entrepreneurship (4) Coverage of the new venture creation process from the venture idea phase, to the capital search and acquisition, through the new venture start-up and operations. Theories and techniques are applied to the planning and development of an actual new enterprise. New ventures can include the traditional small business or a high growth venture; the forming of a new business entity or a new venture within an existing organization. Prerequisites: LBA 31 or 39; 107; junior standing.

LBA 173. Designing Effective Organizations (4) This course focuses on relationships among organizational subsystems and the organization and its environment. The topics of technological determination and environmental determinism are investigated, and an ecology model of organizational effectiveness is developed. Prerequisites: LBA 109; junior standing.

LBA 175. Management of Change (4) The processes of deliberate organizational change as adaptations to both internal and external

developments. Criteria for and of effective change programs, strategic variables affected in change (e.g., power, communication, conflict) and technologies for producing change (e.g., consulting, training, research). Prerequisite: LBA 109, or junior standing in psychology or sociology.

LBA 176. Managing Small Businesses (4) The focus of the course is on the decisions owner-managers make in choosing opportunities, allocating resources, motivating employees, and maintaining control while not stifling entrepreneurial activities that cause a business to grow. Topics included are managing under adversity, management of the family business, professionalizing the growing business, corporate entrepreneurship, financial planning, control, and accountability, and the changing role of the board of directors. A field study and a research paper involving the applications of the concepts in a specific firm are required. Prerequisites: LBA 31 and LBA 109; junior standing.

LBA 181. Strategic Management and Policy (4) An integrated analysis of the administrative processes of the various functional areas of an enterprise, viewed primarily from the upper levels of management. The formulation of goals and objectives and selection of strategies under conditions of uncertainty as they relate to planning, organizing, directing, controlling and evaluating the policies in each of the functional areas separately and jointly to achieve corporate objectives. Prerequisite: completion of general requirements for a major in business administration.

LBA 183. Administrative Internship (2-4) The internship affords students the opportunity to combine administrative practice and classroom theory. Interns are placed with private, public or third sector agencies for a period of 10 to 20 hours a week for one semester. Each intern completes a major administrative project. Weekly seminars are held to aid in the development of projects. Prerequisites: advanced standing, permission of instructor and permission of director of internships.

LBA 191. Independent Study (2 or 4) Primarily for advanced majors in business administration. An independent study proposal must be submitted to and approved by the student's faculty adviser, the instructor, and the SBPA Academic Standards Committee. Independent study is to be construed as self-directed study by the student.

LBA 193. Special Topics (4) Special topic courses offered by the School of Business and Public Administration will be of three types:

- Advanced subjects studied in the concentration program.

- General courses open to all students other than freshmen.

- Special courses introducing new approaches to subjects studied previously, or presenting new subjects which require preparation in disciplines other than business administration.

LBA 195. Seminar (4) Seminars may be with-

in single functional areas, cross-functional

areas or in multi-disciplinary areas. (Seminars may not always be offered annually.)

LBA 197. Independent Research (2 or 4) Primarily for advanced majors in business administration. Approval for independent research may be granted after written application to the school Academic Standards Committee has been reviewed. Approval will be granted only upon demonstrated competence in research methodology. Independent research is to be construed as self-directed research by the student.

LBA 199a. Directed Study (2 or 4) The procedure for obtaining approval for directed study is the same as for LBA 191. However, directed study is to be construed to mean that the instructor will closely direct the course of study.

LBA 199b. Directed Research (2 or 4) The procedure for obtaining approval for directed research is the same as for LBA 197. However, directed research is to be construed to mean that the instructor will closely supervise and direct the research.

LBA 199c. Senior Honors Thesis (4) Senior honors thesis will be open to business administration seniors by invitation of the faculty. Only students holding a 3.0 GPA or above in courses required by the school will be eligible for invitation. The instructor will work closely with the student in the capacity of major adviser.

School of Business and Public Administration Faculty

Mark S. Plovnick, 1989, Dean, Professor, B.A., Union College, 1968; B.S., 1968; S.M., Massachusetts Institute of Technology, 1970; Ph.D., 1975.

Jaime Agudelo, 1984, Associate Professor, B.A., University of Alabama, 1973; M.A., 1976; Ph.D., Oklahoma State University, 1979; C.P.A., California and Texas.

Michael H. Ballot, 1971, Professor, B.M.E., Cornell University, 1962; M.B.A., University of Santa Clara, 1965; M.A., Stanford University, 1968; Ph.D., 1973.

David K. Banner, 1987, Professor, B.S., University of Texas, 1963; M.B.A., University of Houston, 1968; M.A., Northwestern University, 1973; Ph.D., 1973.

John W. Blasingame, 1982, Associate Professor, B.A., University of Oklahoma, 1961; M.B.A., University of Houston, 1968; Ph.D., 1975.

Thomas E. Brierton, 1989, Assistant Professor, B.S., University of Wisconsin, 1978; J.D., Northern Illinois University, College of Law, 1983.

Donald W. Bryan, 1974, Associate Professor, B.A., Linfield College, 1962; M.A., Syracuse University, 1964; Ph.D., 1974.

C. Gregory Buntz, 1978, Professor, B.B.A., University of Iowa, 1968; M.A., 1970; Ph.D., Ohio State University, 1973.

Karen M. Gibler, 1990, Assistant Professor, B.A., Murray State University, 1978; M.S.P., University of Tennessee, 1981; M.B.A., East Texas State University, 1986; Ph.D., Georgia

State University, 1990.

James A. Goodrich, 1976, Professor, A.B., Occidental College, 1968; M.A., University of Kansas, 1970; Ph.D., University of California, Los Angeles, 1978.

Sue N. Hinrichs, 1977, Associate Professor, B.S., Oklahoma State University, 1957; M.S., University of Kansas, 1961; C.P.A., State of California, 1964; Ph.D., University of Santa Clara, 1974.

Ronald Hoverstad, 1990, Assistant Professor, B.A., Augsburg College, 1974; M.A., St. Cloud State University, 1981; Ph.D., University of Minnesota, 1986.

Thomas E. Kail, 1985, Associate Dean, B.S., University of Wisconsin-Milwaukee, 1967; M.A., 1969; Ph.D., The University of Toledo, 1975.

W. Anthony Kulisch, 1981, Associate Professor, B.B.A., California State University, San Jose, 1966; M.B.A., University of Santa Clara, 1971; D.B.A., University of Colorado, 1977.

Unro Lee, 1990, Assistant Professor, B.A., University of Southern California, 1977; M.A., Indiana University, 1981; Ph.D., Purdue University, 1986.

Laurie J. Lichter-Heath, 1986, Assistant Professor, B.S., University of Tennessee, 1972; J.D., The John Marshall Law School, 1975; LL.M., Georgetown University Law Center, 1979.

H. Chang Moon, 1989, Assistant Professor, B.A., Hankuk University of Foreign Studies (Korea), 1977; Ph.D., University of Washington, 1988.

JoNel Mundt, 1991, Assistant Professor, B.A., Hiram Scott College, 1971; M.B.A., University of South Dakota, 1975; Ph.D., University of Oklahoma, 1989.

Newman S. Peery, Jr., 1982, Professor, B.A., University of New Mexico, 1962; M.B.A., 1969; Ph.D., University of Washington, 1974.

Willard T. Price, 1980, Professor, B.S., University of California, Berkeley, 1961; M.P.W.A., University of Pittsburgh, 1969; Ph.D., 1973.

Ray Sylvester, 1972, Associate Dean, Professor, B.A., Gettysburg College, 1962; M.B.A., University of Michigan, 1963; Ph.D., 1972.

Paul Tatsch, 1980, Associate Professor, B.A., Houghton College, 1968; M.A., State University of New York, Binghamton, 1974; Ph.D., 1977.

Richard Vargo, 1981, Professor, B.S., Marietta College, 1963; M.B.A., Ohio University, 1965; Ph.D., University of Washington, 1969.

Cynthia K. Wagner, 1990, Assistant Professor, B.S., Ohio State University, 1979; M.S., 1980; Ph.D., University of Pennsylvania, 1986.



***“We are preparing the leaders
of tomorrow’s schools by
providing our students with
degree and credential
programs which combine the
best elements of professional
theory and fieldwork.”***



**Fay B. Haisley, Dean
School of Education**

SCHOOL OF EDUCATION

A professional school of University of the Pacific offering degree programs on three levels: Baccalaureate, Master's, and Doctor of Education.

The School of Education was organized at University of the Pacific in 1923 and officially recognized by the California State Department of Education on January 10, 1924. Its goals are: to prepare competent personnel for service in public and private pre-elementary, elementary and secondary schools and at the adult education level; to provide programs for the in-service growth of experienced school personnel so that they may update and upgrade their understanding, knowledge and skills in a rapidly changing educational enterprise; to provide educational leadership in cooperation with all those agencies engaged in and interested in the schools; and to engage in and promote research leading to better public education.

The programs and courses of the School of Education are accepted throughout the United States by other colleges and by state departments of education for teaching credentials or licenses by virtue of the program approval by the California Commission on Teacher Credentialing and accreditation by the National Council for the Accreditation of Teacher Education.

The School of Education collaborates with other schools and colleges of the University in making teacher education an all-University responsibility. Programs are offered to prepare personnel to serve the public and private pre-elementary, elementary and secondary schools and two-year community colleges as classroom teachers, specialists, supervisors, principals, superintendents and central office personnel, and in pupil personnel services including school psychology.

The School of Education has several special experimental and innovative programs in operation on the campus and in the public schools and communities which the University serves.

As is characteristic of the University, the School of Education is selective in its admission requirements, offers a diversity of programs suited to the needs of the times, is discerning in the appointment of the faculty and strives to fulfill the concepts of service to both the community and to the educational profession.

Student Associations of the School of Education

Several associations are available to students: School of Education Student Association (SESA); Council for Exceptional Children (CEC); Early Childhood Education (ECE); Bilingual Student Association (BSA); Student Association for Graduates in Education (SAGE); and Music Education Student Association (MESA). Presidents of associations serve

as officers of the Associated Students of the School of Education (ASSE), the governing body.

The ASSE Board of Directors, the governing body, is composed of a president, a vice president, a secretary, a treasurer, a commissioner of publicity and two representatives to the ASUOP Senate. These commissioners meet twice a month in open meetings to discuss proposals and to plan activities for the benefit of the School of Education student body.

The organization and its officers work closely with the faculty and have had an increasing voice in planning and procedures. Through participation in the organization, students gain an insight into their profession and realize the importance of their involvement in the decision-making process.

Membership is open to all undergraduate students who are enrolled in the School of Education and all graduate students who are working toward a credential or an advanced degree offered through the School of Education and who have paid the Associated Students of University of the Pacific (ASUOP) student body fees.

Becoming A Teacher

Teacher Education Programs

The School of Education provides programs whereby any student in any unit of the Stockton campus can prepare for teaching in California schools at pre-elementary, elementary, secondary and adult education levels. It is committed to a philosophy of combining professional theory with practical fieldwork and utilizes the unique diversity of Stockton-area schools as laboratories for teacher preparation. The University of the Pacific is the only university in California to have its teacher preparation programs approved by both the state and national accreditation agencies from bachelors through doctorate levels, thus permitting its teacher-graduates to be licensed upon request in 38 other states.

The Basic Teaching Credentials. The current credentials or licenses for teaching in California schools are called Single Subject credential and Multiple Subjects credential. At the University of the Pacific, either credential may be secured at graduation if a student decides early and plans carefully. A year of post-graduate study is required within five more years, however, to earn a clear credential.

The Single Subject credential authorizes its holder to teach at any level, except college, in that subject. The Multiple Subjects credential

authorizes its holder to teach in any classroom in which the students remain with the teacher. Multiple Subjects candidates interested in teaching in a Spanish/English bilingual classroom may apply for admission to the Bilingual Emphasis Program.

Eligibility. The School of Education currently imposes no quota upon students entering teacher preparation but insists that they meet qualitative criteria. They must be strong academically, respect and relate well to students, be of fine character and be recommended by persons who know of their capabilities. In particular, they must demonstrate that they are fully committed to the task of acquiring excellence in teaching skills.

So that students may assess themselves, their relationships with children in groups and their willingness to commit themselves to excellence in teacher preparation, any sophomore or higher level UOP student willing to meet course demands is allowed to enter the first two courses leading to the credential. Before students can take the other professional preparation courses, they must make formal application and be admitted to credential candidacy.

Internship Program in Teacher Education.

Students who have completed a baccalaureate degree and who demonstrate maturity, work experience and professional experience are eligible for a state-approved internship as an alternative to Directed Teaching.

The intern will be a paid employee of the school for a school year. Placement for student teaching or approval for internships through UOP will only be made for candidates completing a minimum of nine units of professional coursework in the UOP School of Education (which must include FEI 131 and 133 or FEI 171 and 173).

Requirements for a Teaching Credential.

Three major requirements exist for any candidate for a teaching credential. One is the acquisition of a baccalaureate or higher degree. The first degree offered by any UOP school or college is a qualifying degree. The other requirements are (1) completion of a program of professional preparation, and (2) demonstration of adequate subject matter knowledge for the credential sought.

California law requires passing the California Basic Educational Skills Test (CBEST) before receipt of the first teaching credential. CBEST may be taken by a freshman and should be taken before full admission to teacher education. The testing office in the School of Education can provide information on CBEST.

California law also requires a course or a successful test score on the Constitution of the United States.

Professional Preparation. Four courses, totaling at least 12 units, and a full semester of student teaching or a full year of internship comprise the professional preparation for a preliminary teaching credential. At the outset the student must acquire at least 100 hours of fieldwork in the instructional programs of recognized schools of lower than college level. At least 50 of the hours must be done in a non-specialized classroom of kindergarten through twelfth grade level. The remainder may be in a nursery school, an outdoors instructional program (but in a school program), or a special education or bilingual school. The 100 hour requirement may be met by enrollment in FEG 87 (**Fieldwork**). This two unit course is offered to sophomores and higher in fall and spring terms. Students who have previously completed the 100 hour requirement and filed documentation do not need to enroll in FEG 87.

Another prerequisite to the professional education sequence is FEG 105 (**Foundations for Teaching**) three units. It is offered in the fall, spring and summer. Also available as early as the sophomore year is the first course in the professional education sequence, FEG 121 (**Learning and the Learner**) three units, offered each fall, spring and summer.

Before taking further professional courses, the student must complete **Admission to Credential Candidacy**. To apply for credential candidacy, the student — a second semester sophomore, or higher — secures and processes application and reference forms from the credential secretary, submits fingerprints and an application for State clearance, files evidence of passing or taking CBEST, and shows both a cumulative and a UOP GPA of 2.5 as well as a GPA of 2.5 on all professional coursework taken. No grade in a professional course below a 2.0 will be accepted. Candidates for a Single Subject credential must have a 2.5 GPA in all coursework taken for their single subject waiver program. Credential candidacy may be suspended if later GPA's fall below 2.5. When all required forms are on file, the credential secretary will arrange an interview with a faculty panel of the Credential Committee which will determine if the applicant meets criteria for further teacher preparation. Only after interview and admission can the student take the following courses:

Reading/Language Arts Development (FEI 135 for multiple subject classrooms or FEI 175 for single subject classrooms) is required for all credential candidates, including music education applicants. It is offered in fall, spring and summer for three units and combines on-campus instruction with fieldwork.

Usually in the semester before student teaching, FEI 131 (**Curriculum and Instruction: Social Studies MS**) and FEI 133 (**Curriculum and Instruction: Math/Science MS**)

or FEI 171 (**Curriculum and Instruction: Organization, Planning and Evaluation SS**) and FEI 173 (**Curriculum and Instruction: Instructional Strategies SS**) are taken. They include additional fieldwork. FEI 131 and 133 prepare specifically for multiple subject classrooms, and FEI 171 and 173 prepare specifically for single subject classrooms. These courses are offered each fall, spring and summer. Students preparing for both kinds of credentials must take additional preparation through a mini-course or independent study.

When the student has completed the required courses above, has made application, has displayed sufficient subject matter knowledge and has passed the state-required examination in basic skills (CBEST), entry into the semester of student teaching, **Directed Teaching**, may be made. Music applicants may divide this requirement over two semesters, but other students do not take other coursework concurrently with directed teaching except for FEI 195b. Student teaching is not ordinarily offered in the summer, and all or part of it may be done outside of Stockton but within a 25 mile radius driving distance.

Subject Matter Knowledge. The subject matter knowledge may be demonstrated by success on a state-designated examination or by completion of a state-approved program of coursework known as a "waiver program" because it waives the student through the otherwise required state examination.

Information and application forms relating to current designated subject matter tests can be secured from the credential secretary or the testing office in the School of Education. Test scores are usable for five years only.

The All-University Requirements for the **Multiple Subjects waiver program** are (pending approval by the California Commission on Teacher Credentialing; thus subject to minor changes):

A minimum of 25 courses, minimum 87 semester units divided as follows:

Language Arts (minimum five courses)

- 1 Mentor Seminar I
- 2 a course in literary analysis
- 3 a course in language and language acquisition
- 4 a course in communication
- 5 a language arts elective

Math/Science (minimum five courses)

- 6 a course in math
- 7 a course in math concepts
- 8 a course in life science
- 9 a course in physical science
- 10 a course in earth/environmental science

Humanities/Social Studies (minimum six courses)

- 11 a course in the development of civilization
- 12 a course in American history and institutions
- 13 a course in global/intercultural studies
- 14 a course in multicultural/ethnic/gender perspectives

15 a humanities elective

16 a humanities/social studies elective

Visual and Performing Arts (minimum three courses)

- 17 a course in visual arts
- 18 a course in music
- 19 a course in performing arts

Physical Education (minimum one course)

- 20 a course in physical education

Human Development (minimum one course)

- 21 a course in human development

Concentration (minimum four courses, minimum 15 units)

- 22-24 three additional approved courses in a single area (Language Arts, Math, Science, Humanities, Social Studies, Visual and Performing Arts, Physical Education, or Human Development) plus
- 25 a pedagogical seminar and/or Mentor Seminar III

Specific required coursework in each of the above areas will be supplied by the student's faculty adviser.

Bilingual Program. For those students desiring to teach in Spanish/English bilingual classrooms, completion of a bilingual/cross cultural concentration is required prior to student teaching, and candidates are assigned to a bilingual classroom for one-half of their student teaching. In addition, to be recommended for the Multiple Subjects Credential with a Bilingual Emphasis, the candidate must pass an examination in Spanish and the culture of the target population.

Single Subject Waiver Programs. The University offers subject matter waiver programs for the following Single Subject Credentials: Art, English, Foreign Languages (French, German, Japanese, Spanish), Life Sciences, Mathematics, Music, Physical Education, Physical Science, and Social Science.

No waiver programs exist at UOP for agriculture, business, home economics, industrial arts or for history or government, the latter two being subsumed under social science.

Waivers from Other Institutions. A waiver program taken at another university will usually be accepted, but whether subject matter has been demonstrated by examination success or by completion of a waiver program elsewhere, a student will not be entered into student teaching until specific omissions in academic preparation are corrected. For instance, a Multiple Subjects candidate who has passed the State's examination may have to show coursework or personal experience in applied art and music.

Placement for student teaching or approval for internships through UOP will only be made for candidates completing a minimum of nine units of professional coursework in the UOP School of Education (must include FEI 131 and FEI 133 or FEI 171 and FEI 173).

Other Requirements for the Basic Teaching Credential. The statutory requirement for a course or examination on "principles and provisions of the Constitution of the United States" may be met by a course of at least two units in a community college, at UOP or another college, or by arranging with the Political Science Department in Wendell Phillips Center to take an examination. Success in the examination will be entered on the student transcript.

Post-graduate Requirements for the Teaching Credential. A student who has not finished the post-graduate year of study, known as the **Fifth Year Requirement**, but has finished all other requirements for degree, professional preparation and subject matter knowledge, is eligible for a **Preliminary Credential**, good for five years but not renewable. When the fifth year requirement has been met, a "clear" or "full" credential is available upon application to the State Commission on Teacher Credentialing.

Three specific requirements must be met in the post-graduate year if not completed sooner. One is a course in Health Education (including nutrition); UOP will recognize such a course even if taken in a community college. Courses at UOP which meet the requirement are APR 43-Contemporary Issues in Health Science or XPR 193-Contemporary Issues in Community Health. The second is specified special education skills which can be met at UOP by FES 123-The Exceptional Child and FES 192-Lab Services for Learning Handicapped Pupils. The third is computer education coursework which can be met at UOP by FEI 161/261-Microcomputers in Education or FEI 165/265-Microcomputers and Curriculum Design (permission of instructor required).

The Clear Credential. The School of Education recommends a student for the clear credential when the above requirements have been met and the student has completed 26 post-graduate units at UOP (or 30 elsewhere, not counting extension courses and including a minimum of 12 units at UOP) in an approved program. The teacher candidate is asked to declare a fifth year during student teaching. The declared program may be a Masters in education or a teaching field, any work on a basic or advanced credential or a supplemental authorization, or a plan for professional development that is submitted and approved.

Services for Out-of-State Teachers. Teachers who have been prepared in other states should apply directly to the Commission on Teacher Credentialing, 1812 - 9th Street, Sacramento, CA 94244. If a clear credential is not granted, such teachers may enter UOP for the purposes of clearing a credential. A credential file should be opened, with the credential secretary being given copies of credential documents. Application to UOP's Graduate School is also necessary. The School of Education will recommend for the clear credential when California require-

ments are met if the necessary study is completed at this institution.

Services for Prospective Transfer Students: Students who contemplate transferring as undergraduates to qualify for a teaching credential may write to the School of Education or phone (209) 946-2558 to confer about course selection. Graduating seniors should write the Graduate School for information and application but may also write or confer with the School of Education. If the GPA for junior/senior years is above 3.0, they should inquire concerning the Master of Education or Master of Arts in Teaching degrees which include credential preparation.

Opportunities in Post Graduate Teacher Preparation: Graduates of UOP and other universities may apply to the Graduate School for admission to prepare for teaching. Strong academic performance in junior/senior years is necessary. Those who have a 3.0 GPA may consider applying for a Master of Arts in Teaching (M.A.T.) or a Master of Education (M.Ed.) degree. Those applying for the M.A.T. or M.Ed. must take the Graduate Record Examination (General Test only) and provide the recommendation forms used for all graduate degree programs. About two-thirds of the masters studies is complete when the teaching credential is obtained.

Post-graduates who have had experience as substitute teachers, classroom aides or school volunteers in many cases are able to qualify for a teaching credential between June and January or in two full-time semesters. They may also qualify for a paid internship.

Specialist Instruction Credential Programs

Specialist instruction credentials by law require a basic teaching credential to be held concurrently. At UOP a student, whether undergraduate or graduate, may begin work on a specialist credential while a candidate for a basic teaching credential (usually the Multiple Subjects credential). In some cases the specialist credential cannot be completed until two years of appropriate teaching experience have been completed. Post-graduate students with good academic records are encouraged to combine a specialist program with a graduate degree. Students who begin specialized work as undergraduates may be able to near completion of both specialist and masters programs in the required fifth year. The adviser for each specialist program should be consulted as early as possible.

The **Special Education Specialist Credential Program** offers a competency-based sequence of courses and field work at both the undergraduate and graduate entry levels. Graduate students who wish to prepare for work with exceptional children are offered a choice of two areas of study: Learning Handicapped (including learning disabilities) and Severely

Handicapped.

The School of Education offers a **Bilingual/Cross-cultural Specialist Credential Program** for those seeking advanced preparation in the field of bilingual education who wish to teach in a Spanish/English bilingual classroom. The program includes coursework and competency requirements in three areas: language, culture and bilingual teaching methodologies.

Programs in English as a Second Language

The School of Education offers both graduate and undergraduate programs for foreign students and American students who wish to become teachers of ESL (English as a Second Language) or EFL (English as a Foreign Language). At the graduate level, students may choose to enter the Language Development Specialist Program and/or work toward a 36-unit master's program. At the undergraduate level, foreign students may choose the Pedagogy Major with a specialization in either Language and Culture or Second Language Pedagogy, and American students may wish to begin work on the Language Development Specialist program. (See description under Degrees in the School of Education for specific courses required for the Pedagogy Major.)

Language Development Specialist Certificate Program. This 24-unit program prepares students for the California State ESL Credential, the Language Development Specialist Certificate. The program consists of a series of courses which lead to competency in the teaching of English as a Second Language. Upon completion of the program, a candidate should have a thorough understanding of the structure and role of language; psychological and cultural factors in language acquisition; theories and methods of bilingual education; theories and methods of teaching English to speakers of other languages; testing, diagnosis, language assessment and evaluation; and materials for use in classes for pupils of limited English proficiency. A California basic teaching credential and a passing score on the State examination for the Language Development Specialist Certificate are required for certification in ESL.

Degrees in the School of Education

The Baccalaureate Degree

The Bachelor of Arts in Liberal Studies degree is available to students who enroll in the School of Education. A total of 124 semester units is required.

Two majors are available:

- The Diversified Major — for preparing California teachers.
- The Pedagogy Major — for preparing foreign teachers.

The Diversified Major: Undergraduate students who plan to teach in self-contained classrooms, typically grades 1-6, can qualify for the Multiple Subjects teaching credential upon graduation by choosing a Diversified major. The coursework for this major is similar to the coursework required in the University's multiple subject waiver program. The following are required (pending approval by the California Commission on Teacher Credentialing; thus subject to minor changes):

Language Arts (minimum five courses)

- 1 Mentor Seminar I
- 2 a course in literary analysis
- 3 a course in language and language acquisition
- 4 a course in communication
- 5 a language arts elective

Math/Science (minimum five courses)

- 6 a course in math
- 7 a course in math concepts
- 8 a course in life science
- 9 a course in physical science
- 10 a course in earth/environmental science

Humanities/Social Studies (minimum six courses)

- 11 a course in the development of civilization
- 12 a course in American history and institutions
- 13 a course in global/intercultural studies
- 14 a course in multicultural/ethnic/gender perspectives
- 15 a humanities elective
- 16 a humanities/social studies elective

Visual and Performing Arts (minimum three courses)

- 17 a course in visual arts
- 18 a course in music
- 19 a course in performing arts

Physical Education (minimum one course)

- 20 a course in physical education

Human Development (minimum one course)

- 21 a course in human development

Concentration (minimum four courses, minimum 15 units)

- 22-24 three additional approved courses in a single area (Language Arts, Math, Science, Humanities, Social Studies, Visual and Performing Arts, Physical Education, or Human Development) and/or Mentor Seminar III plus
- 25 a pedagogical seminar

Professional Education (minimum two courses, minimum 6 units)

- 26 a course in foundations of education
- 27 a course in educational psychology

Completion of the Diversified Major automatically satisfies the University General Education requirements.

The requirement for a diversified major may be modified in exceptional cases for students entering at junior or higher level and who meet either of the following descriptions:

- A. Foreign students with teaching or student teaching experience who are not candidates for a California teaching credential but who

wish to complete an education-related degree at this University.

- B. Other students, usually American, who, after interrupting their higher education, have performed instructional assignments in the classroom, as either teacher or paraprofessional, for more than one academic year and who can show a broad diversification in non-professional studies.

The Pedagogy Major: Undergraduate students from other countries may prepare in the University of the Pacific for teaching in their home countries, using the resources of the University to center upon their likely area of teaching. The minimum requirements and the possible options follow:

- a. University General Education requirements with emphasis on selecting courses for intercultural understanding. (30 units; only three General Education courses may be taken on a pass/no credit basis, and not more than one course in each of the three main categories may be taken on a pass/no credit basis.)
- b. Development of proficiency in the English language through intensive English programs, as needed, to pass proficiency examinations. (24 units or equivalent)
- c. Professional education — (24 units):

(1) Required courses (20 units):

- FEP 121-Learning and the Learner (3)
- FEP 115-Tests and Measurements (3)
- FEG 105-Foundations for Teaching (3)
- FEG 87-Fieldwork (2)
- FEI 131-Curriculum and Instruction: Social Studies (MS) (3)

and

- FEI 133-Curriculum and Instruction: Math/Science (MS) (3)

and

- FEI 135-Reading/Language Arts Development: Multiple Subject (3)

or

- FEI 171-Curriculum and Instruction: Organization, Planning and Evaluation (SS) (3)

and

- FEI 173-Curriculum and Instruction: Instructional Methodologies (SS) (3)

and

- FEI 175-Reading/Language Arts Development: Single Subject (3)

(2) Electives (4 units)

- FEG 206-Comparative Education (3)
- FEI 161-Microcomputers in Education (3)
- FEI 165-Microcomputers and Curriculum Design (3)
- FEI 193-Special Projects (2-4)
- FEP 193-Introduction to Counseling (3)
- FES 123-The Exceptional Child (3)
- FEI 193-Senior Seminar (3)

- d. Concentration in one of the following options: (24 units)

- (1) Second Language Pedagogy (for foreign students who are preparing to teach English as a foreign language): Courses

in language structure, language development and second language acquisition.

- (2) Language and Culture Pedagogy (for foreign students who are preparing to teach the language and culture of the United States): courses in literature of the English language, expository writing (AEN 23 or equivalent required), reading and English instructional techniques, and courses providing special understanding of American culture.
- (3) Technical Pedagogy (for foreign students preparing to teach classes in technical subjects): Courses selected from science, mathematics, computer subjects, engineering, health and physical education, educational technology and instructional methods.
- (4) Special Pedagogy (for foreign students preparing to teach in a specialized learning field): Teaching the physically and psychologically handicapped; early childhood education.

- e. Elective courses to meet degree requirements of 124 units.

- f. A grade point average of 2.0 must be maintained in all professional education and concentration area courses. None of the courses in these two areas can be taken on a pass/no credit basis.

Graduate Degrees

The School of Education in cooperation with the Graduate School offers four advanced degrees: Master of Education, Master of Arts in Teaching, Master of Arts with a major in education, and Doctor of Education (Ed.D.).

Detailed requirements for these degrees are given in the Graduate School catalog.

The Master of Education and Master of Arts in Teaching degrees differ from the Master of Arts in that candidates are ordinarily in the teacher credential program and that certain courses for the teaching credential may be used to meet degree requirements. In the Master of Arts program the candidate usually has a teaching credential or equivalent professional preparation.

The Doctor of Education degree is the highest professional degree in education. The program at University of the Pacific requires a specialization in one of the following areas of concentration: Curriculum and Instruction, Foundations and Multicultural Education, School Administration and Supervision, Counseling Psychology, Educational Psychology, School Psychology, Special Education or Music Education.

Other requirements for the Doctor of Education degree include appropriate professional experience, demonstrated scholarship, passing the comprehensive examination, a residency or its equivalent of one academic year, the writing of a dissertation and a final examination thereon.

Accreditation - NCATE. The University is accredited by the National Council for

Accreditation of Teacher Education for the preparation of elementary teachers, secondary teachers and school service personnel. It is one of three California universities to be so accredited from the Bachelor's level through to the Doctorate.

Specialized Courses. In addition to those who are candidates for a degree or credential, other students may wish to consider specialized courses in the School of Education, such as those that deal with early education of children; special reading techniques; working with minority children; and instructional approaches for children with learning disabilities or severe physical handicaps. Many valuable courses not listed in this catalog are offered in summer sessions, workshops and special seminars.

Coordination of Teacher Education Programs

An All-University Council on Teacher Education, with membership broadly representative of the colleges, participates with the School of Education in establishing basic credential and degree programs. Faculty member representation on the Council on Teacher Education includes faculty from the College of the Pacific, the School of Education and the Conservatory of Music. Two teacher education students are also members. This group promotes coordination and cooperation within the University, advises the Dean and the faculty of the School of Education concerning programs and activities, and assists in evaluating results.

Student Teaching in Mexico

The School of Education offers this option to students enrolled in the University's basic credential program. This experience is based at an American School Foundation campus in Mexico, a private bilingual school. The student teacher will have an opportunity to be involved in numerous innovative educational experiences: teaching, open area classrooms, departmental programming and individualized instruction. Student teaching is conducted in English. This option is not open to students in the Multiple Subjects Bilingual Emphasis Program.

Library and Instructional Materials Resources

The University Libraries contain comprehensive resources for the student in education in its book collections, professional periodicals, pamphlets, microfilms and other reference materials.

The Learning Resource Center in the School of Education supplements the main library holdings with collections of elementary and secondary school textbooks, curriculum guides, courses of study, reference books and other instructional materials, many of which have been contributed by the public schools. Also, the School of Education has a computer

center in the Learning Resources Center for students enrolled in computer courses in education.

The University Audiovisual Services Center serves the needs of the School of Education with films, recordings, tapes and other appropriate materials and the equipment for their use. It also provides video-tape cameras and projectors. Instructional techniques in the use of these materials are taught in the center as part of the School of Education program.

Videotape cameras and projection equipment are used to enable students in the teacher education program to see themselves in action as student teachers and receive the benefit of personal and individual assistance from their University supervisors.

Clinical Services

The School of Education provides a number of clinical services for children, adolescents and adults. Psychological, educational and vocational testing and counseling are provided by qualified graduate students in counseling and school psychology under the supervision of credentialed and/or licensed faculty. Clients may also be provided clinical services by licensed faculty upon request.

The Clinical Services Testing Office is an officially designated national testing center for various standardized tests, such as the Graduate Record Examination, Miller's Analogies Test, College-Level Examination Program, ACT, National Teachers Examination and the California Basic Educational Skills Test.

In conjunction with Clinical Services, a collection of restricted tests and educational and vocational counseling materials is maintained for use by faculty and approved advanced students.

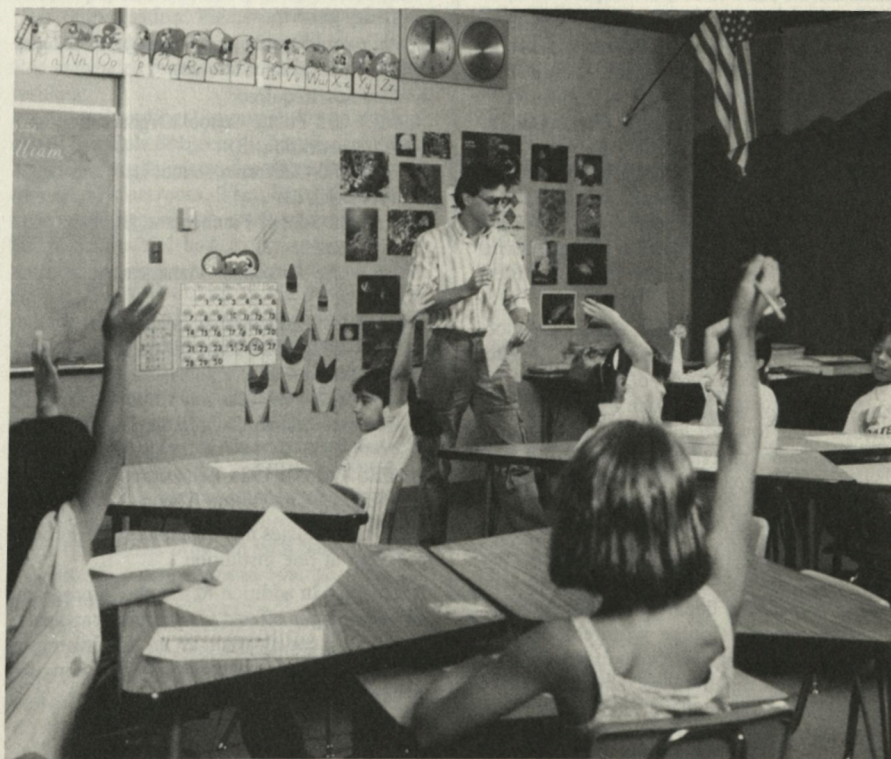
In the College of the Pacific, the Speech, Hearing and Language Center provides a program for children and adults who have need for individual or group therapy for such problems as stuttering, cleft palate, aphasia, cerebral palsy, articulation and delayed speech, and it provides speech reading for the hard of hearing. Comprehensive audiological assessment is also available for children and adults.

Preparation for Pupil Personnel Services Credentials (School Counseling and School Psychology) and Marriage, Family and Child Counseling License

Programs Available

All candidates, with or without a teaching credential, may apply for the School Counseling or School Psychology program.

Master of Arts degree only (no credential or license). This is for persons who would like an M.A. in Educational and Counseling Psychology with an emphasis in educational psychology or counseling. The program requires a minimum of 32 units of courses selected from specific content areas with the academic advisor's approval.



Master of Arts degree plus Pupil Personnel Services Credential, School Counseling or School Psychology. The School of Education will recommend qualified applicants for Pupil Personnel Services Credentials in the areas of School Counseling and School Psychology. The program leading to the School Counseling Credential represents approximately two years of specialized graduate study, while the program leading to the School Psychologist Credential represents approximately three years of graduate study followed by a year of internship. The master's degree is required for either credential. For persons interested in becoming school psychologists, it is first necessary to obtain the School Counseling Credential. Persons wishing to apply to either program should contact the department chairperson for detailed information about the program of choice.

Certain courses are generic for both credentials; in addition, each credential has its own specialty courses with field work and internship.

Generic Courses for both credentials:

Two Master's core courses (FEG 204 and FEI 209) plus the following: FEP 201, 215, 220, 263, 264, 265, 266, 268, 269, 292d, 295i, and 296a.

School Counseling Specialty Courses: FEP 267, 292a, and 298a.

School Psychology Specialty Courses: FES 224x, 242w, and 295b; FEI 295d; FEP 292b, 293g, 392g, 395j, 392b, and 398b.

Pupil Personnel Services Credential only. This is for persons who already have an acceptable Master's degree. Course requirements are the same as above except for the two master's core courses.

Master of Arts with an Emphasis in Marriage, Family and Child Counseling (MFCC). The department offers the Master of Arts degree designed to meet the academic requirements for the MFCC State License. Currently 49 units of course work are required consisting of generic counseling and specialized counseling courses. Students wishing information about the specific course requirements for this license should contact the department chairperson.

Doctorate in Education (Ed.D.). A doctoral degree program may be designed in educational psychology, school psychology, or counseling psychology. Such a program may include work towards either the school counseling or school psychology credential. A doctorate in the Department of Educational and Counseling Psychology may also qualify the student for eligibility as a Licensed Psychologist in the State of California. For information about doctoral study, prospective students should contact the department chairperson.

Please note: Course requirements must conform to State of California mandated competencies. New requirements may come into effect before a new catalog is printed. Please check with the Department Chairperson for current requirements.

Preparation for Service as Supervisor, Principal or in Central Office Positions

For experienced teachers who desire to prepare for positions as supervisors, consultants, vice principals or principals, or central office staff including the superintendency, the School of Education offers programs meeting the requirements for the Preliminary and Professional Administrative Services Credentials. The credential programs may be combined with the Master's degree, the Specialist in Education degree or the Doctorate in Education.

Consult the chairperson, Department of Educational Administration and Supervision, concerning the administration credential programs and the advanced degree programs.

Requirements For Preliminary Administrative Services Credential

1. Admission to graduate standing requiring the possession of a baccalaureate degree.
2. Application to chairperson of department and subsequent approval by department.
3. Possession of a valid basic teaching credential or a services credential with a specialization in pupil personnel, health or librarian services as specified in the State of California Education Code, and verification of three years of successful full-time teaching experience.
4. An acceptable score on the Graduate Record Examination and other required examinations including the CBEST.
5. Written verification of desirable personal and professional characteristics for supervisory service.
6. An overall grade point average of at least 3.0 in credential courses.
7. Courses Required:
FEA 278-Public School Organization and Administration (3)
FEA 280-California School Law and Legal Processes (3)
FA 283-School Finance and Business Administration (3)
FEA 286-Personnel Management in Education (3)
FEA 289-Educational Leadership (3)
FEA 292a/292b-Field Experience in Administration and Supervision (3)
FES 123si-Exceptional Child (3) or FES 193-Exceptional Child in the Regular Classroom (3)
FES 192w or 192x-Laboratory Services (1)
FEI 209-Curriculum Theory (3)

(Note: Candidates must complete an approved program at one institution.)

Internship: In addition to the above program, an internship is offered for qualified candidates leading to certification as an administrator. Consult the department chairperson for information.

Course Offerings

Academic Skills Center

Instructors: Campbell, Evans, Houck, Wehrs (Director)

FSC 3. Intermediate ESL: Vocabulary Development (2) Introduction to a broad, cross-disciplinary academic vocabulary with special attention to correct word formation, multiple meanings, commonly used phrases, and word families used in reading material typical to a general education curriculum. Placement in this course is on the basis of ESL testing.

FSC 5. Intermediate ESL: Reading and Grammar Development (5) Academic reading material at the intermediate level will be used to build comprehension skills and background knowledge in English related to a wide variety of topics typical of college study. Attention will be paid to grammatical forms used in the reading material and notes or summaries written by students. College note-taking skills, reading for specific purposes, and recognizing text organization will be introduced and practiced. Placement in this course is on the basis of ESL testing.

FSC 7. Intermediate ESL: Writing and Grammar (5) This course will lead students from writing simple paragraphs to longer, more complex compositions using chronology, enumeration, comparison/contrast, definition, and cause and effect as patterns of organizing content. The English tense and aspect system will be reviewed with other basic concepts of English grammar. More advanced concepts, such as the modal system and clause structure, will be introduced with attention paid to integrating all grammatical forms studied into writing paragraphs, compositions, and journal entries. Placement in this course is on the basis of ESL testing.

FSC 9. Intermediate ESL: Pronunciation, Speaking and Listening (4) Intermediate level skills in speaking and listening comprehension will be focused on: including improvement of pronunciation, rhythms, stress and intonation. Audio tapes of short talks on academic topics will be used as material for listening, note-taking and discussion.

FSC 11. Advanced ESL: Vocabulary Development (2) Continued development of broad, cross-disciplinary academic vocabulary with special attention to correct word formation, multiple meanings, commonly used phrases, and word families used in reading material typical to a general education curriculum. Prerequisite: FSC 3 or equivalent.

FSC 13. Advanced ESL: Reading and Grammar Development (5) Reading for comprehension, related study skills and vocabulary expansion with particular attention paid to grammatical forms used in the readings. Selections will help prepare students for textbook and magazine article reading at the college level. A variety of topics common to a general education curriculum will be covered. Prerequisite: FSC 5 or equivalent.

FSC 15. Advanced ESL: Writing and Grammar Development (5) Training in a variety of academic forms: note-taking, outlining, summaries, paraphrasing, reports, a short term paper, essays, and journal writing. Complex grammatical patterns are studied and integrated into the writing assignments. These include: verb phrase forms, indirect speech, conditionals, clauses, gerunds and infinitives, and the passive voice. Attention is also paid to correct word formation. Prerequisite: FSC 7 or equivalent.

FSC 17. Writing from Cultural Perspectives (3) Concentrates on word formation and sentence-level grammar in the English language used in composing short essays typical of college writing. Placement on the basis of ESL and writing competency test results.

FSC 19. Basic Writing (3) Concentrates on the practical application of writing theory to develop confidence and competence in written composition skills. The course credit does not apply toward graduation. Placement on the basis of writing competency test results.

FSC 21. Writing for College (3) Introduction to the types of written assignments required in college courses. Weekly writing assignments and individual conferences with instructor. Placement on the basis of writing competency test results.

FSC 23. Advanced ESL: Speaking and Pronunciation (2) The pronunciation, rhythm, stress and intonation of American English will be studied and practiced, as well as skills needed for academic discussion. Students will receive help in improving pronunciation of sounds.

FSC 25. Advanced ESL: Listening (2) The understanding of college-level lectures and peer discussions will be stressed. Both audio and video material will be presented for practice in listening, note-taking, and comprehension.

FSC 31. Reading for College (2) Examination of the nature of the reading process and of techniques used by successful readers. Development of vocabulary, comprehension, concentration, memory and fluency skills.

FSC 51. Reading Efficiency Development (2) Increasing reading efficiency through use of rhythmic eye movements, analyzing text organization and reading for specific purposes. Development of sophisticated analytical, critical and aesthetic reading strategies. Prerequisite: A score of 47 or higher on the Raygor Reading Test.

FSC 61. Study Efficiency (2) Development of skills inherent in effective college learning, such as time management, study strategies, research techniques, preparing for and taking exams, and self-management (decision making, goal setting, accomplishing goals). Offered spring semester.

FSC 91. Individually Prescribed Study (1-3) Development of specific thinking, organization and communication skills as determined through individual assessment and prescription.

FSC 93. Special Projects (1-3) Permission of instructor.

Curriculum and Instruction Department

Professors: Chambers (emeritus), Clawson, Meyer (emeritus), Morrow, Schippers (emeritus)

Associate Professors: Draheim (Chairperson), Harrison, Langer, Mathias

Assistant Professors: Eskridge, Kenfield, Milon, Woolley

Instructors: Campbell, Evans, Houck, Wehrs

FEI 10. Dean's Seminar: Introduction to the Teaching Profession (1) A basic introduction to the career of teaching and the programs and methodologies of the School of Education including educational requirements, professional orientation, career opportunities and school and university regulations.

FEI 131. Curriculum and Instruction: Social Studies (MS) (3) Methods and curriculum for teaching social studies in a self-contained classroom. Topics include: essential social studies themes, concepts and skills; instructional planning; diverse and appropriate teaching strategies; meeting the needs of a diverse student population including mainstreamed and culturally and linguistically diverse students; and principles and practices of evaluation. Fieldwork required. Prerequisite: Admission to credential candidacy. Recommended for the semester before directed teaching.

FEI 133. Curriculum and Instruction: Math/Science (MS) (3) Methods and curriculum for teaching math and science in a self-contained classroom. Topics include: essential science and math themes, concepts and skills; instructional planning; diverse and appropriate teaching strategies; meeting the needs of diverse student populations; and principles and practices of evaluation. Fieldwork required. Prerequisite: Admission to credential candidacy. Recommended for the semester before directed teaching.

FEI 135. Reading/Language Arts Development: Multiple Subjects (3) Introduction to the teaching of reading/language arts in the elementary (K-6) classroom. The course focuses on understanding the processes of reading and language arts and how to design appropriate teaching strategies to encourage growth. An emphasis will be placed on the integration of reading and language arts throughout the curriculum. Meets credential requirements. Prerequisite: Admission to credential candidacy.

FEI 136. Curriculum and Instruction in Bilingual Programs (3) Historical and legislative background of bilingual education, first and second language acquisition and literacy, bilingual methodology, assessment, and research in bilingual education. Prerequisites: entry into Bilingual Emphasis program with passing score on entrance examination in Spanish. Permission of instructor.

FEI 158a. Directed Teaching: Multiple Subjects (14) All-day student teaching in multiple subject, self-contained classrooms, usually of pre-school and elementary school children. Prerequisites: FEI 131, 133, 135, FEP 121, FEG 105, credential candidacy, CBEST success, and

previous sign-ups and clearance for student teaching. No other coursework permitted other than FEI 195b and weekend and vacation workshops, except that a candidate may petition in advance to the Curriculum and Instruction Department for a concurrent course plus an extension of directed teaching. Corequisite: FEI 195b.

FEI 158b. Directed Teaching: Multiple Subjects Special Assignment (2-14) Student teaching of specially specified duration or nature. Prerequisites: As for FEI 158a. Corequisite: FEI 195b.

FEI 158j. Directed Teaching: Multiple and Single Subject (14) Prerequisites: As for FEI 158a. Corequisite: FEI 195b.

FEI 161. Microcomputers in Education (3) This course introduces the student to the major concepts and applications related to the use of microcomputers in education. Students will learn basic operations, terminology and capabilities of microcomputers within an educational context. Key issues related to the use of instructional technology will be discussed. Application and evaluation of software for classroom instruction and management will be investigated.

FEI 163. Logo in the Classroom (3) The focus of this course is the application of the Logo computer language in the classroom. An emphasis is placed on discussing issues related to learning theory, the teaching of Logo, designing material to enhance the teaching of Logo, and the use of Logo in problem-solving instruction. Students will learn to program in Logo during the class. Prerequisites: FEI 161 or permission of instructor.

FEI 165. Microcomputers and Curriculum Design (3) Issues related to the educational application of instructional technology and its impact on education will be investigated. Students will do in-depth analyses of software applications and their validity in relation to learning models and the current curriculum. Students will evaluate how new technologies may effect change in curriculum. Various projects related to evaluation of software, teaching strategies and research in new technologies will be required. Prerequisites: FEI 161 or permission of instructor.

FEI 171. Curriculum and Instruction: Organization, Planning and Evaluation (SS) (3) Curriculum and techniques for organizing, planning, and evaluating an instructional program in a single subject classroom. Topics include: essential themes and content in the discipline, state frameworks, identifying learner outcomes, analysis of instructional materials, lesson planning, and principles of tests and measurements. Fieldwork required. Prerequisite: Admission to credential candidacy. Recommended for the semester prior to directed teaching.

FEI 173. Curriculum and Instruction: Instructional Strategies (SS) (3) Methods of teaching in the subject subject classroom. Topics include: grouping practices, questioning strategies, critical thinking, values and

decision-making, techniques for working with discipline problems, conferencing and reporting pupil progress, writing across the curriculum, and modifying instruction to meet the needs of a diverse student population including mainstreamed and culturally and linguistically different. Fieldwork required. Prerequisites: Admission to Credential Candidacy. Recommended for the semester prior to directed teaching.

FEI 175. Reading/Language Arts Development: Single Subject (3) Introduction to the teaching of reading and language in the content areas. The course focuses on understanding the processes of reading and language and how to design appropriate teaching strategies to encourage growth in learning from text. An emphasis will be placed on the integration of reading and language throughout the curriculum. Meets credential requirements. Prerequisite: Admission to credential candidacy.

FEI 178. Directed Teaching: Single Subject (14) All-day student teaching in a subject-matter classroom, usually in a secondary school. Prerequisites: FEG 105, FEP 121, FEI 171, 173, 175, credential candidacy or credential, CBEST success, and previous sign-ups and clearance for directed teaching. No other course work permitted except for FEI 195b and weekend and vacation workshops or by petition as in FEI 158a. Corequisite: FEI 195b.

FEI 178a. Directed Teaching: Single Subject Music (5-14) Student teaching. Prerequisites: credential candidacy, FEG 105, FEP 121, FEI 171, 173, CBEST success, clearance of Music Education Department, previous sign-ups and clearance for student teaching. Corequisite: FEI 195b.

FEI 178b. Directed Teaching: Single Subject Special Assignment (2-14) Part-time student teaching of specially authorized duration and nature. Additional practicum work. Prerequisites: same as FEI 178. Corequisite: FEI 195b.

FEI 191. Independent Study (1-3) Primarily library study. Consent of department chairperson.

FEI 192. Preliminary Field Work (1-3) Consent of department chairperson.

192a. Elementary Education

192b. Secondary Education

192c. Communication Disorders

192d. Early Childhood Education

192e. Reading

192f. Bilingual Education

192g. Cross-cultural Education

192h. Special Project

FEI 193. Special Projects (2-4) Permission of instructor.

FEI 194. Introduction to Reading Lab (1-3) Introductory clinical experience involving assessment and facilitation of literacy working with one or more clients. Corequisite: FEI 195d.

FEI 195a. Pedagogical Seminar (3) Investigation of the role that subject matter knowledge and its representations plays in teaching. Fieldwork in various types of classroom settings is required. Prerequisite: Completion of a mini-

mum of 8 units in a concentration for the diversified major or multiple subject waiver program.

FEI 195b. Seminar: Directed Teaching (2) Reflection upon and integration of the Directed Teaching experience in large and small group settings. Topics include: multicultural education, child abuse, school law, interpreting standardized test scores, professional associations and negotiations, discipline plans, lesson planning and conferencing skills. Corequisite: FEI 158, 178, 258 or 278.

FEI 195d. Diagnostic/Prescriptive Reading Strategies (3) Principles for evaluation of student development in language, cognition and reading through formal and informal procedures. Formulation of instructional strategies based on assessment. Includes a clinical experience. Prerequisite: FEP 121 or APY 107.

FEI 197. Research in Education (1-3) Primarily field investigation. Consent of department chairperson.

FEI 209. Curriculum Theory (3) An examination of curriculum from various philosophical and learning theory points of view. Models and rationales of curriculum will be explored. Historical perspectives and specialized areas of the curriculum will be examined in terms of present and future societal needs. Methods of curriculum dissemination will be delineated.

FEI 212. Instructional Strategies and Classroom Processes (3) Use of a variety of instructional strategies to achieve course objectives. Includes a review of research on effective teaching skills related to motivation, expectations, modeling, questioning, grouping, direct instruction, cooperative learning and classroom management. Knowledge of contemporary lines of inquiry with regard to classroom processes.

FEI 214. Supervision of Instruction (3) Review of models of supervision and processes that support effective descriptions of classroom practices, analysis and feedback regarding those data and the provision of instructional support for continuing classroom improvement. Includes a practicum component.

FEI 225. Psychology of Reading (3) An exploration of current theory and research findings related to the psychological processes involved in literacy acquisition and development. Emphasis on a cognitive and psycholinguistic approach to understanding the processes of reading. Implications for instruction. Prerequisite: FEP 121 or APY 107.

FEI 252. Teaching the Creative, Talented and Gifted Child (3) A review of the major writings and research dealing with the creative learner and his classroom needs. Will present opportunities to develop curriculum plans and methods approaches that can successfully be applied in an on-going educational program to assist the creative student in reaching his full potential.

FEI 253. Children's Literature in the Curriculum (3) An overview of children's literature in the elementary school content fields, examining research and scholarly opinions regarding how books may affect the growing child.

FEI 258a. Directed Teaching: Multiple Subjects (10) Involves all-day work in the classroom and action research. Prerequisites: FEG 105, FEP 121, FEI 131 and 133 or 171 and 173, FEI 135 or 175, CBEST success, credential candidacy, and sign-ups and clearance for directed teaching. Open only to M.Ed. or M.A.T. degree candidates. Corequisite: FEI 195b.

FEI 258b. Directed Teaching: Multiple and Single Subjects (10) Open only to students in M.Ed. or M.A.T. program.

FEI 258j. Directed Teaching: Multiple Subjects Special Assignment (2-10) Open only to students in M.Ed. or M.A.T. program.

FEI 261. Microcomputers in Education (3) This course introduces the student to the major concepts and applications related to the use of microcomputers in education. Students will learn basic operations, terminology and capabilities of microcomputers within an educational context. Key issues related to the use of instructional technology will be discussed. Application and evaluation of software for classroom instruction and management will be investigated.

FEI 263. Logo in the Classroom (3) The focus of this course is the application of the Logo computer language in the classroom. An emphasis is placed on discussing issues related to learning theory, the teaching of Logo, designing material to enhance the teaching of Logo, and the use of Logo in problem-solving instruction. Students will learn to program in Logo during the class. Prerequisites: FEI 261 or permission of instructor.

FEI 265. Microcomputers and Curriculum Design (3) Issues related to the educational application of instructional technology and its impact on education will be investigated. Students will do in-depth analyses of software applications and their validity in relation to learning models and the current curriculum. Students will evaluate how new technologies may effect change in curriculum. Various projects related to evaluation of software, teaching strategies and research in new technologies will be required. Prerequisites: FEI 261 or permission of instructor.

FEI 278. Directed Teaching: Single Subject (10) Involves all-day work in the classroom and action research. Prerequisites: FEG 105, FEP 121, FEI 171, 173, 175, CBEST success, credential candidacy, and sign-ups and clearance for directed teaching. Open only to M.A.T. or M.Ed. degree candidates. Corequisite: FEI 195b.

FEI 278a. Directed Teaching: Single Subject Music (5-10) Directed teaching with action research. Prerequisites: FEG 105, FEP 121, FEI 171, 173, 175, CBEST success, credential candidacy, and sign-ups and clearance for directed teaching. Open only to M.A.T. or M.Ed. degree candidates. Corequisite: FEI 195b.

FEI 278b. Directed Teaching: Single Subject Special Assignment (2-10) Part-time student teaching of specially authorized duration and

nature. Action research and additional practicum work. Prerequisites: FEP 105, FEP 121, FEI 171, 173, 175, CBEST success, credential candidacy, and sign-ups and clearance for student teaching. Open only to M.A.T. or M.Ed. degree candidates. Corequisite: FEI 195b.

FEI 279. Directed Teaching in the Junior College (3-6) By arrangement.

FEI 280. Modern Trends in Early Childhood Education (3) Acquaintance with current trends in the education of children from birth through third grade.

FEI 282. Advanced Curriculum and Theory in Early Childhood Programs (3) Involvement with curriculum design, analysis and evaluation.

FEI 291. Independent Graduate Study (1-3) Graduate students may enroll in library research with consent of department chairperson.

FEI 292. Advanced Field Work (1-6) Consent of department chairperson.

292a. Elementary Education

292b. Secondary Education

292c. Communication Disorders

292d. Early Childhood Education

292f. Reading

292h. Special Projects

292i. Mexico Schools

292j. Teaching Practicum: Independent Schools (MS)

292k. Teaching Practicum: Independent Schools (SS)

FEI 293. Special Topics (2-4) Permission of department chairperson.

FEI 294. Intermediate Reading Laboratory (1-3) A continuing clinical experience based on FEP 192c and FEP 195c/295c. The student, working with one or more clients, will be involved in the diagnosis and assessment of reading and reading related areas and will carry out instructional strategies based on assessment. Prerequisites: FEP 195c/295c.

FEI 295a. Seminar: Middle School Curriculum (3) Review of curricular issues in middle schools in the United States, including an analysis of curricular concepts and the social, economic, and political forces, that may shape forthcoming curricular design. Specific content includes: historical and philosophical foundation; curriculum trends, alternative approaches; and curriculum materials analysis.

FEI 295b. Seminar: Secondary Curriculum (3) Review of the curriculum issues in middle and secondary schools in the United States, including an analysis of curriculum concepts and the social, economic, and political forces that may shape forthcoming curricular design. Specific content includes: historical and philosophical foundations, curriculum trends, alternative approaches, curriculum materials, analysis and issues that relate to adolescence.

FEI 295c. Seminar: The Gifted Child (3) Review and analysis of current curricular topics related to gifted children.

FEI 295d. Diagnostic/Prescriptive Reading

Strategies (3) Principles for evaluation of student development in language, cognition and reading through formal and informal procedures. Formulation of instructional strategies based on assessment. Includes a clinical experience. Prerequisite: FEP 121 or APY 107.

FEI 295e. Seminar: Teaching Reading and Writing (3) Examines current theory, research, trends, and issues in the teaching of reading and writing. Students will translate theory and research in practice through observation of and participation with children in reading and writing activities. Prerequisites: graduate standing and previous coursework in one of the following: reading, writing, language development.

FEI 295g. Seminar: Elementary Curriculum (3) Review of curricular issues in elementary schools in the United States, including an analysis of curricular concepts and the social, economic, and political forces, that may shape forthcoming curricular design. Specific content includes: historical and philosophical foundation; curriculum trends; alternative approaches; and curriculum materials analysis.

FEI 297. Graduate Research in Education (1-3) Graduate students may enroll in some field investigation with consent of department chairperson.

FEI 299. Master's Thesis (4)

FEI 302. Issues in Teacher Education (3) Review and analysis of current curricular topics related to preservice and inservice teacher preparation.

FEI 304. Program Evaluation (3) Selection design and use of formal and informal devices for the purpose of making diagnosis of learner strengths and weaknesses, measuring learner progress, and making summative evaluations of learner achievement, both on an individual and larger scale basis.

FEI 306. Curriculum Materials Development (3) Design and development of appropriate curriculum materials for achieving program and course objectives.

FEI 308. Issues in Curriculum and Instruction (3) Exploration of crucial issues and trends in curriculum and instruction: their historical origins, current manifestations and implications for teaching and learning in effective schools.

FEI 391. Independent Graduate Study (1-3) Doctoral students may enroll in directed library research with consent of department chairperson.

FEI 392. Curriculum Practicum (2-4)

FEI 393. Special Topics (2-4) Permission of instructor.

FEI 394. Advanced Reading Laboratory (3) A continuing experience based on 192c/292c in which the advanced clinician will be involved in working with clinicians and the director as a resource person in diagnostic/prescriptive practices. Prerequisite: FEP 292c and permission of instructor.

FEI 397. Graduate Research in Education (1-3)

FEI 399. Doctoral Dissertation (1-10)

Educational and Counseling Psychology Department

Professors: Hopkins, Irvin (Chairperson), Lowry (emeritus), McBride, Pohlman, Riemer (emeritus)
Associate Professors: Trotter, Van Hoorn
Assistant Professor: Perlmutter

FEP 105. Human Sexuality (4) General overview of cultural, psychological, historical, ethical and physiological aspects of normal human sexuality. Emphasis on research bases. An attempt to provide a foundation for student decision-making as to their own value systems and a foundation for future living.

FEP 115. Tests and Measurements (3) Elementary measurement theory and techniques of group assessment. Major focus on the validity and reliability of measurement instruments. Emphasis on group achievement test batteries and group intelligence tests, as well as item construction and analysis, and criterion referenced tests, and their development, uses and limitations, especially as applied to mastery learning.

FEP 121. Learning and Learner (3) General overview of human development; learning theory; objectives, motivation, evaluation; and individual differences. Prerequisite: sophomore standing.

FEP 165. Guidance of the Exceptional (3) Development of listening skills through demonstration and in-class labs. Attention to techniques for training parents of handicapped children in home management and instructional skills, the conduct of parent-teacher conferences, as well as ethical practices and self-improvement. Prerequisite: concurrent enrollment in FEP 192d or FES 192w/x, or permission of instructor.

FEP 173. Language Testing (3) This course will enable teachers to improve their own classroom tests and to make sound assessments of standardized tests which they will be asked to select, administer and interpret.

FEP 191. Independent Study (1-3) Consent of department chairperson.

FEP 192d. Counseling and Behavior Lab I (1-3) Supervised observation and experiences for undergraduates, paraprofessionals or graduate students with little or no previous professional training or appropriate field experience relating to the behavioral sciences.

FEP 193. Special Projects (1-3) Permission of department chairperson.

FEP 197. Research in Education (1-3) Consent of department chairperson.

FEP 201. Techniques of Research (3) Study of the various research methodologies including historical, survey, correlational and experimental/quasi-experimental. Emphasis on learning to read and comprehend research writing in professional journals. The course also includes material dealing with test theory and statistics.

FEP 214. Intermediate Statistics (3) Introduction to applied inferential statistics and intermediate correlational procedures; two-way analysis of variance in parametric statistics and

chi square and Mann-Whitney U tests in non-parametrics. Prerequisite: FEP 115 or AMA 35.

FEP 215. Individual Appraisal in Education (3) Course emphasizes study of various theories of intelligence as well as the methodological and societal factors related to the assessment of intelligence and learning-related behavior. Students will develop a basic understanding of the diagnostic process needed to differentiate among high-incidence learning-related handicaps. Not a practicum course. Prerequisites: FEP 115, 121 or APY 107, FEP 263 desirable.

FEP 220. Nature and Conditions of Learning (3) Study of both cognitive and traditional learning theories, their applications to instruction and the development of effective teaching strategies. In addition, information processing models are explored and their implications for instruction are addressed. Prerequisite: FEP 121 or consent of instructor.

FEP 263. Personality Dynamics in Counseling Across Cultures (3) Development of an understanding of human behavior utilizing current psychological theories, concepts and research, for the purpose of counselor effectiveness in helping individuals develop better coping skills and improved social adjustment. Individual and cultural differences are emphasized as an integral component of psychological insight.

FEP 265. Counseling Theory (3) Intensive study of current counseling theories, analysis of counselor-client interactions, and understanding of basic counseling techniques. Focus on developing a personal counseling approach.

FEP 266. Organization and Administration of Pupil Personnel Services (3) Principles of modern systems perspective applied to the delivery of pupil personnel services within the public school system. Course content includes

PPS program development and evaluation, application of problem-solving approaches to social situations, laws relating to minors. Course is appropriate for persons anticipating educational administrative assignments as well as for departmental majors.

FEP 267. Career Counseling (3) Vocational theory, information, interest, testing and counseling applications. Social-psychological perspectives on work, vocational decisions, careers and labor force trends. Practice in administration, interpretation and counseling use of SCII and CAI with teenagers. Utilization of computer information systems. Prerequisite: FEP 292d.

FEP 268. Consultation Methods (3) Various consultation methodologies will be studied with applications appropriate for a variety of organizational needs. Prerequisite: FEP 265 or consent of instructor.

FEP 269. California Law and Professional Ethics (3) Designed for students in credential and licensing graduate programs in human services. Students will study approaches to ethical decision-making in addition to learning relevant law and regulation and existing ethical codes of behavior.

FEP 272. Life Span Development Issues (3) This course covers developmental issues from infancy to old age and their effects on individuals, couples, and families. The impact of societal changes and culture-related issues on development and relationships will be emphasized.

FEP 273. Language Testing (3) This course will enable language teachers to improve their own classroom tests and to make sound assessments of standardized tests which they may be asked to select, administer and interpret.

FEP 275. Theories of Marriage, Family, and Child Counseling (3) Course provides students with an opportunity to develop a theoretical and operational understanding of the field of fam-

ily therapy. Addresses systems, normal family developmental issues, major theoretical schools, and the DSM-III-R as it is applied to family systems. Prerequisites: FEP 265 and 292d.

FEP 277. Psychotherapeutic Diagnostic Intervention in Marriage and Family Counseling (3) Provides an opportunity for the student of family counseling to develop a systematic format for assessing the nature of dysfunction in a family as well as skills in developing hypotheses, treatment plans and techniques for therapy. Prerequisite: FEP 275.

FEP 285. Alcohol and Drug Dependency Counseling (1) Course focuses on the etiology and treatment of substance abuse disorders. Emphasis is on theoretical consideration of causes and basis of treatment as related to theory. Topics will include an overview of rehabilitation and the dynamics of recovery. Emphasis is on the counselor's role in treatment, working with families, relapse prevention and adjunctive resources.

FEP 286. Child Abuse Counseling Issues (1) Provides students of family therapy with an understanding of the nature of child abuse/molests and the dynamic implications for victims and perpetrators, reporting procedures and the law, as well as discussion of the manifestations of abuse in adulthood.

FEP 287. Human Sexuality and Sexual Counseling (1) This course provides the student of family therapy a focus on the study of the biological, social, cultural, personal and relational aspects of human sexuality. Course emphasis is on sexual dysfunctions and therapy, current research on sexuality, varieties of sexual behavior and preference, and gender identity and gender role. Prerequisite: Admission to the MFCC program and doctoral program in Counseling Psychology.

FEP 291. Independent Graduate Study (1-3) Permission of department chairperson.

FEP 292a. Counseling Field Work (1-4) Supervised field practicum in an instructor-approved setting. Prerequisite: permission of instructor.

FEP 292b. Psychometric Cognitive Assessment (3) Supervised practicum in the administration of individual psychological tests which measure cognitive functioning. The course includes basic test interpretation with report writing experience. Prerequisites: FEP 215 and consent of instructor.

FEP 292d. Counseling and Behavior Laboratory II (1-3) Supervised practicum in counseling including psychological analysis of behavioral problems, interviewing, observation in life setting and consultation with other professionals. Prerequisites: FEP 115, 263 and 265.

FEP 292e. Career Counseling Practicum (1-3) Supervised career counseling including utilization of computer information systems and vocational testing.

FEP 293. Special Project (1-3) Permission of department chairperson.

FEP 295a. Computer Applications in Educa-



tion (3) The application and interpretation of the SPSS computer programs for both descriptive and inferential data analyses, including multiple regression and factor analyses. Introduction to Fortran programming and the completion of an approved course project. Prerequisite: FEP 214.

FEP 295i. **Child Development Across Cultures** (3) Basic course in child development with emphasis on the inter-relationship among physiological, sociological and intellectual growth patterns showing similarities and differences that are attributable to different cultures. The readings and discussions will concentrate on those aspects of child development that are school-related. Prerequisite: FEP 121. FEP 296a. **Seminar: Group Counseling** (3) Seminar and practicum in the theories and techniques of group counseling. Prerequisite: FEP 292d or concurrent enrollment.

FEP 297. **Graduate Research** (1-3) Graduate students with consent of department chairperson.

FEP 298a. **School Counseling Internship** (1-4) Students will perform duties of a school counselor in multi-cultural school settings at a minimum of two school levels under the direct supervision of credentialed school counselors. May be repeated. Prerequisite: Consent of instructor.

FEP 299. **Master's Thesis** (4)

FEP 391. **Independent Graduate Study** (1-3) Doctoral students with consent of department chairperson.

FEP 392a. **Counseling Psychology Field Work** (1-6) Advanced supervised field experience. Prerequisite: permission of instructor. FEP 392b. **School Psychology Field Work** (1-3) Advanced supervised practicum in specified instructor-approved settings. Open only to school psychology credential candidates. May be repeated. Prerequisites: FEP 292a, 392g, 395j, and FES 224x and 242w; consent of instructor.

FEP 392d. **Counseling and Behavior Laboratory III** (1-3) A pre-field work and internship practicum for doctoral students in counseling psychology. Prerequisite: permission of instructor.

FEP 392g. **Personality Assessment and Diagnosis** (3) The course will address theoretical issues and methodologies used in the diagnostic process. Students will receive practice in administering, scoring and interpreting individually administered personality instruments. Prerequisites: FEP 215, 263, and permission of instructor.

FEP 393. **Special Topics** (1-3)

FEP 395b. **Advanced Counseling Theory and Practice** (3) Current counseling trends and innovative practices including behavioral/cognitive approaches, neurolinguistics, relaxation techniques, stress management, hypnosis, utilization of counseling technology such as bio-feedback and video feedback. Prerequisite: M.A. in counseling or related field or permission of instructor.

FEP 395c. **Seminar: Research Design in**

Educational Study (3) The student will learn and apply historical, correlative, descriptive and experimental designs used in educational research in his or her own area of interest. Basic skills in computer utilization. Emphasis is on learning to do research rather than on learning to read or comprehend. Prerequisite: FEP 214.

FEP 395dp. **Seminar in Educational Research** (3) The student will develop a prospectus for a dissertation and acquire an understanding of dissertation writing. Prerequisite: FEP 395c.

FEP 395h. **Learning Theories and Practice in Schools** (3) The student will study in-depth the basic learning theories which are currently in use in the schools, learning to utilize the concepts in the various theoretical positions in psycho-educational instruction. The student will be required to develop and defend his or her own theory of learning and psycho-educational instruction based on a thorough review of the extant literature in the area of at least two of the basic learning theories. Prerequisite: FEP 220.

FEP 395i. **Child Growth Theories Applied in Education** (3) The student will be able to describe, compare and apply to education the theories of Jean Piaget, Erik Erikson and other developmentalists. Readings include both primary and secondary sources. Prerequisite: FEP 295i or permission of instructor.

FEP 395j. **Counseling and Testing Across Cultures** (3) Applies the principles of counseling and testing to clients whose cultural or sub-cultural background differs from the majority culture and/or counselor's culture in regard to racial, ethnic, social class, gender, age, religion and other groupings. Analysis of the counselor's own background and biases and those of the clients. Use, modification and interpretation of assessment instruments in intercultural settings. Prerequisites: FEP 215 and 265.

FEP 397. **Graduate Research**. (1-3) Doctoral students with the consent of department chairperson.

FEP 398b. **School Psychology Internship** (1-2) Student will perform duties of a school psychologist in multi-cultural school settings at both elementary and secondary levels under the direct supervision of a credentialed school psychologist. May be repeated. Prerequisites: FEP 392b and permission of instructor.

FEP 399. **Doctoral Dissertation** (1-10)

Educational Administration and Supervision Department

Associate Professor: Brennan (Chairperson)

Part-time Visiting Assistant Professors: Reimer, Speck

FEA 278. **Public School Organization and Administration** (3) Organization, administration and functioning of state, county and local school systems and their inter-relations with the federal government in matters of education; organizational patterns of public schools; principles of school administrative process and competencies for administration and instructional

leadership; current problems and trends in public education; educational policy development; group dynamics; handling conflict situations and controversial issues; budgeting and financial procedures; modern management tools.

FEA 280. **School Law and Legal Processes** (3) Laws, legal principles, interpretations and practices governing federal, state, county and local school organization and administration; laws relating to youth; contracts, liability and tort; effect of federal and state laws on education.

FEA 283. **School Finance and Business Administration** (3) Public schools as economic institutions; the roles of the federal, state and local governmental agencies related to school finance; public school revenues and expenditures; budget development and administration; operational finance of funds and services.

FEA 286. **Personnel Management in Education** (3) Skills and techniques of employee selection, orientation, administration, supervision and evaluation; staff development activities; determining personnel need; employee organizations.

FEA 289. **Educational Leadership** (3) Functions, responsibilities and relationships of the school principal. Emphasis given to instructional leadership, leadership styles, human relations skills, working with school-community task groups and forces, public relations, needs assessment and decision-making analysis.

FEA 291. **Independent Graduate Study** (1-3) Graduate students may enroll in library research with consent of department chairperson.

FEA 292a-292b. **Field Experience in Administration and Supervision** (2-2) Experience in practical on-the-job administrative and supervisory functions at a school site. The course should be commenced in the fall semester and extend over the school year. Open only to administrative credential candidates at the University. Permission of department chairperson.

FEA 293. **Special Topics** (1-3) Permission of instructor.

FEA 295c/395c. **Seminar: Technical Areas of Administration Practice** (3) Central office administration, advanced law, advanced fiscal management/facilities planning.

FEA 295d/395d. **Seminar: Administration of Instructional Programs** (3) Instructional leadership, staff development, educational program planning/evaluation, curriculum designs and instructional delivery strategies, monitoring and evaluating student progress, use of instructional time and resources.

FEA 295e/395e. **Seminar: Administration of Personnel** (3) Personnel management, resource allocations, employee evaluation, collective bargaining, staffing, staff development, conflict mediation.

FEA 295f/395f. **Seminar: Political and Cultural Relationships in Educational Administration** (3) History and philosophy of education, cultural diversity, school-community relations, education policy analysis, politics of

school governance, political strategies.

FEA 297. **Graduate Research in Education** (1-3)

FEA 391. **Independent Graduate Study** (1-3) Doctoral students may enroll in directed library research with consent of the department chairperson.

FEA 392. **Internship and Advanced Field Experience in Administration or Supervision** (4) Permission of department chairperson.

FEA 392c. **Field Experience in Technical Areas of Administrative Practice** (2) Permission of department chairperson.

FEA 392d. **Field Experience in Administration of Instructional Programs** (2) Permission of department chairperson.

FEA 392e. **Field Experience in Administration of Personnel** (2) Permission of department chairperson.

FEA 392f. **Field Experience in Political and Cultural Relationships in Educational Administration** (2) Permission of department chairperson.

FEA 393. **Special Topics** (1-3) Permission of instructor.

FEA 395b. **Seminar: Current Trends and Issues in School Administration** (3) For advanced students in school administration and practicing principals and supervisors. Permission of department chairperson.

FEA 395g. **Seminar: Administration of Higher Education** (3) A study of administrative, educational and personnel problems and issues in community colleges and four-year institutions. Permission of department chairperson.

FEA 395h. **Seminar: School Community Relations/Public Relations** (3) Techniques of school and district communications. Developing and maintaining public relations and public support for school programs.

FEA 395i. **Seminar: Cultural Diversity and Educational Administration** (3) For doctoral students, particularly in Title VII.

FEA 397. **Graduate Research in Education** (1-3) Doctoral students may enroll in field investigation with consent of department chairperson.

FEA 399. **Doctoral Dissertation** (1-10)

Foundations and Multicultural Education Department

Professors: Baral (Chairperson), Lau, Muskal

Associate Professor: Longmire

Assistant Professor: Milon

Visiting Assistant Professors: Jaramillo, Topete, Wong

FEG 87. **Fieldwork** (2) One hundred hours of supervised field experience in public schools, in grades K-12. Prerequisite: sophomore standing or higher.

FEG 105. **Foundations for Teaching** (3) This course covers classroom communication, multicultural education, and various historical, philosophical, sociological, and legal foundations of teaching. Prerequisites: 100 hours of

verified appropriate field experience in public schools or concurrent enrollment in FEG 87, sophomore or higher standing.

FEG 115. **Introduction to Language** (3) An introduction to the structure and role of language, including not only an examination of the basic components — syntax, morphology, semantics and pragmatics — but also such issues as social roles and language use, diglossia, language and prejudice, social and regional language variation, language variation and change, non-verbal communication, languages in contact, language planning, pidgins and creoles, and societal attitudes toward language use.

FEG 119. **Phonetics and Phonology** (3) Linguistic analysis of speech sounds, mechanisms of their production and structuring of sounds in representative languages, with some emphasis on phonological interference in second-language learning. Course includes: intensive practice in the oral production of representative sounds and the transcription of sounds using the International Phonetic Alphabet. Three hours in class plus one laboratory session each week.

FEG 131. **Second Language Acquisition** (3) Using first language acquisition for comparison, this course focuses on second language acquisition and includes such topics as: interlanguage, overgeneralization, transfer, error analysis, fossilization, monitoring, memory and language acquisition, affective factors in second language acquisition, acquisition and learning, the role of the caretaker, individual attitudes and motivations.

FEG 133. **Introduction to Syntax and Semantics** (3) An introduction to the study of meaning and language structure, including morphological, lexical, syntactic, pragmatic and discourse structures, an examination of tense and aspect, contrast between spoken and written language, and grammatical, notional and functional syllabi.

FEG 150. **The Mexican American Child** (3) This course deals with the Mexican American child in American society and in American schools.

FEG 152. **The Mexican American in Contemporary Society** (3) The main objective of this course is to provide the student with an overview of the historical, social, economic and cultural factors which influence the condition of Mexican Americans in this country.

FEG 171. **ESL Theory and Practice** (3) This course is designed to provide a link between theory and practice in the teaching of ESL. Aspects of language learning will be discussed, and concomitant instruction and curriculum will be analyzed while developing a working model for the development of curriculum which will be appropriate for the teaching situation. Prerequisite: FEG 115 or 133.

FEG 175. **Introduction to Bilingual Education** (3) This course provides an overview of the developing field of bilingual education which is designed to meet the needs of students who are new to the field.

FEG 177. **Practicum** (2-4)

FEG 191. **Independent Study** (1-3) Primarily library study. Admission only by consent of department chairperson.

FEG 193. **Special Projects** (2-4) Permission of instructor.

FEG 195. **Seminar** (1-4)

FEG 195g. **Women Across Cultures** (3) A comparative analysis of the changing role/status of women in the United States and other societies.

FEG 195h. **Seminar in Language Teaching** (3) A seminar in ESL methods, materials, theories and current research. Prerequisite: FEG 171 or concurrent enrollment.

FEG 197. **Research in Education** (1-3) Primarily field study. Consent of department chairperson.

FEG 202. **History and Philosophy of Education** (3) The development of educational institutions, curriculum goals and educational thought from historical, philosophical and cultural perspectives from Greek to modern times and from western and non-western points of view.

FEG 204. **Pluralism in American Education** (3) A multi-disciplinary examination of the effects of cultural and social pluralism on educational policy, philosophy, classroom instruction, and professional ethics in American public education, both historically and as contemporary issues.

FEG 206. **Comparative Education** (3) Educational principles, practices and achievements in the United States and other societies.

FEG 207. **Sociology of Education** (3) Study of sociology of education and the classroom.

FEG 219. **Phonetics and Phonology** (3) Linguistic analysis of speech sounds, mechanisms of their production and structuring of sounds in representative languages, with some emphasis on phonological interference in second-language learning. Course includes: intensive practice in the oral production of representative sounds and the transcription of sounds using the International Phonetic Alphabet. Three hours in class plus one laboratory session each week.

FEG 231. **Second Language Acquisition** (3) Using first language acquisition for comparison, this course focuses on second language acquisition and includes such topics as: interlanguage, overgeneralization, transfer, error analysis, fossilization, monitoring, memory and language acquisition, affective factors in second language acquisition, acquisition and learning, the role of the caretaker, individual attitudes and motivations.

FEG 262. **Advanced Methods, Curriculum and Reading in Bilingual Schools** (3) This course provides a critical interpretation of current practice in bilingual education, based on theory and research. Required for Specialist Credential in Bilingual/Crosscultural Education.

FEG 271. **ESL Theory and Practice** (3) This course is designed to provide a link between theory and practice in the teaching of ESL. Aspects of language learning will be discussed,

and concomitant instruction and curriculum will be analyzed while developing a working model for the development of curriculum which will be appropriate for the teaching situation. Prerequisite: FEG 115 or 133.

FEG 275. Introduction to Bilingual Education (3) This course provides an overview of the developing field of bilingual education which is designed to meet the needs of students who are new to the field.

FEG 277. Practicum (2-4)

FEG 291. Independent Graduate Study (1-3) Graduate students may conduct library research, with consent of department chairperson.

FEG 292g. Advanced Field Work in Bilingual Education (1-6)

FEG 293. Special Topics (1-3) Consent of department chairperson.

FEG 295a. Seminar (1-4) Group study of special problems. Consent of department chairperson.

FEG 295b. Seminar in American Educational Thought (3) A philosophical treatment of American education.

FEG 295d. Seminar: Social Class Effects in Education (3) Explores the nature of social class and its effects on learning in the classroom.

FEG 295e. Seminar: Cultural Basis of Conflict in Education (3) Analysis of cultural conflict in American classrooms.

FEG 295f. Seminar: Educational Anthropology (3) Analysis of culture, language and values in education.

FEG 295g. Women Across Cultures (3) A comparative analysis of the changing role/status of women in the United States and other societies.

FEG 295h. Seminar in Language Teaching (3) A seminar in ESL methods, materials, theories and current research. Prerequisite: FEG 271 or concurrent enrollment.

FEG 295i. Seminar: Curriculum Development for Bilingual/Cross-Cultural Education (3) This course provides a syncretic overview of varying theories on cultural pluralism and pedagogical styles. Students acquire familiarity with at least two cultures. Course requirements include the development of a curriculum unit based on bicultural/multicultural objectives.

FEG 297. Graduate Research in Education (1-3) Graduate students may conduct field investigation, with consent of the department chairperson.

FEG 299. Master's Thesis (4)

FEG 391. Independent Graduate Study (1-3) Doctoral students may conduct directed library research, with consent of the department chairperson.

FEG 392. Research Practicum (3) Consent of the department chairperson.

FEG 393. Special Topics (1-3) Consent of department chairperson.

FEG 395a. Doctoral Seminar (0) Consent of the Dean.

FEG 395c. Seminar: Humanistic and Behavioral Studies (3) Doctoral students may enroll

with consent of department chairperson.

FEG 397. Graduate Research in Education (1-3) Doctoral students may conduct field investigation, with consent of the department chairperson.

FEG 399. Doctoral Dissertation (1-10)

Special Education Department

Professors: Cipani (Chairperson), McBride, Morrow
Associate Professor: MacMillan

Part-time Visiting Assistant Professors: Brabandt,
Stillwell

FES 123. The Exceptional Child (3) Description of the psychological, educational, vocational characteristics of atypical children and their parallel among the general population. Exploration of the etiology, treatment, educational strategies, social and vocational opportunities for the handicapped. Prerequisites: concurrent enrollment, FES 192w/x (1).

FES 191p. Independent Study (1-3) Consent of department chairperson.

FES 192w. Laboratory Services: Learning Handicapped Pupils (1-3) Directed observation and experiences with learning handicapped pupils.

FES 192x. Laboratory Services: Severely Handicapped Pupils (1-3) Directed observation and experiences with severely handicapped pupils.

FES 193. Special Projects (1-3)

FES 224w. Assessment and Programming for Learning Handicapped (3) Assessment instruments and practices for the learning handicapped child will be explored. Measures will include norm-referenced tests, criterion-referenced measures, and curriculum-based assessment. Areas of assessment will include sensorimotor, social-emotional, cognitive, and achievement. Current assessment practices and instruments will be examined in depth and students will be required to research and identify the most technically-sound assessment measures available.

FES 224x. Assessment and Programming for Severely Handicapped (3) Field-based course addressing assessment techniques and the development of individualized programs for the severely handicapped child. Utilization of information derived from assessment in the areas of reasoning and problem solving, language, self-help, gross motor and prevocational. Attention to the implication of multiple handicaps.

FES 228w. Advanced Program Development for the Learning Handicapped (3) Exploration of the literature pertaining to several theoretical instructional systems used in designing programs for learning handicapped pupils. Implications for the development of an individualized instructional program for a group of pupils based on assessment will be examined. Prerequisite: FES 224w.

FES 228x. Advanced Program Development for the Severely Handicapped (3) Field-based course providing practical application of techniques for working with severely handicapped children. Exploration of the literature pertain-

ing to several theoretical instructional systems used in designing programs for severely handicapped pupils and development of an individualized instructional program for a group of pupils based on assessment. Attention to techniques for remediation of multiple handicaps. Prerequisite: FES 224x.

FES 242w. Curriculum and Instruction for Learning Handicapped (3) Methodology and materials applicable to classroom instruction will be provided. Classroom organization and behavioral considerations are explored. Currently utilized curricular systems are examined and critiqued. Specific attention is given to the development of the Individual Education Program (IEP) and its utilization in a group setting.

FES 242x. Curriculum and Instruction for Severely Handicapped (3) Methodology and instructional strategies based on functional skills approach to curriculum and task analysis are explored. Students participate in the development of instructional packages for use with severely handicapped children. Currently utilized curricular programs are explored and analyzed. Prerequisite: FES 224x.

FES 291. Independent Graduate Study (1-3)

FES 292u. Special Education Field Work with the Learning Handicapped (1-6) Supervised practicum in special education. Advanced students engage in assessment, programming, counseling and practice teaching in the learning handicapped setting. Prerequisites: FES 224w, 228w.

FES 292v. Special Education Field Work with the Severely Handicapped (1-6) Supervised practicum in Special Education. Advanced students engage in assessments, programming, counseling and practice teaching in the severely handicapped setting. Prerequisites: FES 224x, 228x.

FES 292w. Laboratory for Services to Learning Handicapped Pupils (1-3) Directed observation and experiences with learning handicapped pupils.

FES 292x. Laboratory for Services to Severely Handicapped Pupils (1-3) Directed observation and experiences with severely handicapped pupils.

FES 293. Special Project (1-3) Permission of department chairperson.

FES 295a. Seminar: Crucial Issues in Special Education (3) Provides a methodology and format for advanced special education students to explore crucial issues and trends and their historical origin. Attention to research and the development of positions on trends, issues, and current law.

FES 295b. Seminar: Emotionally Disturbed Children (3) Exploration of research on models descriptive of the etiology of emotional disturbance in children and models for effective educational, medical and psychotherapeutic remediation. Specific attention to family dysfunction, life cycle issues, and child abuse as they relate to emotional disturbance and pathology in the development of children. Discussion of the DSM-IV-R Childhood Disorders included.

FES 295i. Seminar: Career and Vocational Education for the Handicapped (3) The development and administration of career and vocational programs to meet the unique needs of special education students. Will include assessment and diagnosis of pre-vocational and vocational needs, study of successful models, funding, and inclusion in student Individual Education Plans. Special attention to trends in career and vocational special education.

FES 295n. Seminar: Research in Errorless Learning Techniques (3) Analyses of current behavioral literature in errorless transfer of stimulus control. Includes development of skill in utilizing an instructional approach to design instruction. Hands-on projects involve designing multi-level instructional module with subsequent field testing of module. Techniques applicable to regular and special education situations. Prerequisite: FES 224x.

FES 297. Graduate Research (1-3)

FES 299. Master's Thesis (4)

FES 391p. Independent Graduate Study - Special Education

FES 393. Special Project (1-3) Permission of department chairperson.

FES 395a. Seminar: Crucial Issues in Special Education (3) Provision of a methodology and format for advanced special education students to explore crucial issues and trends and their historical origin. Attention to research and the development of positions on trends, issues, and current law.

FES 395b. Seminar: Emotionally Disturbed Children (3) Exploration of research on models descriptive of the etiology of emotional disturbance in children and models for effective educational and medical remediation. Specific attention to family dysfunction, life cycle issues, and child abuse as they relate to emotional disturbance and pathology in the development of children. Prerequisite: FES 123.

FES 395i. Seminar: Career and Vocational Education for the Handicapped (3) The development and administration of career and vocational programs to meet the unique needs of special education students. Will include assessment and diagnosis of prevocational and vocational needs, study of successful models, funding and inclusion in student Individual Education Plans. Special attention to trends in career and vocational special education.

FES 395n. Seminar: Research in Errorless Learning Techniques (3) Analyses of current behavioral literature in errorless transfer of stimulus control. Includes development in skill in utilizing an instructional approach to design instruction. Hands-on projects involve designing multi-level instructional module with subsequent field testing of module. Techniques applicable to regular and special education situations. Prerequisite: FES 224x.

FES 399. Doctoral Dissertation (1-10)

School of Education Faculty

Fay B. Haisley, 1984, Dean, School of Education, B.A., University of Papua, New Guinea,

Australian National University, 1970; M.Ed., University of Oregon, 1971; Ph.D., 1973.

David P. Baral, 1981, Professor of Education, A.B., Ripon College, 1957; A.M., Stanford University, 1968; Ph.D., University of Arizona, 1975.

Dennis Brennan, 1980, Associate Director of the Center for Development of Economics Education, Associate Professor of Education, B.S., Clarion State College, 1966; M.Ed., University of Pittsburgh, 1970; Ph.D., 1978.

Donald R. Campbell, 1981, Instructor, E.S.L., B.A., Montclair State College, 1969; M.A., University of Hawaii, 1981.

Ennio Cipani, 1981, Professor of Education, B.A., University of Central Florida, 1973; M.S., 1975; Ph.D., Florida State University, 1979.

Elmer U. Clawson, 1974, Associate Dean, Director of the Center for the Development of Economics Education, Professor of Education, B.A., Sacramento State University, 1957; M.A., 1965; M.A., University of Colorado, 1969; Ed.D., University of Georgia, 1972.

Marilyn E. Draheim, 1986, Associate Professor of Education, B.A., Luther College, 1972; M.A., University of Iowa, 1974; Ed.S., 1974; C. Phil., University of California, Berkeley, 1985; Ph.D., 1986.

Susan W. Eskridge, 1989, Assistant Professor of Education, B.S., Old Dominion University, 1973; M.S., Old Dominion University, 1977; Ed.D., University of Virginia, 1989.

Scott Evans, 1990, Instructor, Academic Skills Center, B.A., California State University, Sonoma, 1976; M.A., University of California, Davis, 1980.

Lois N. Harrison, 1985, Associate Professor, Chair, Music Education Department, B.S., Trenton State College, 1951; M.A., Teachers College Columbia University, 1953; Ed.D., 1974.

Bob R. Hopkins, 1973, Professor of Education, B.A., Pasadena College, 1954; M.S., University of Southern California; Ph.D., 1967.

Howard R. Houck, 1989, Reading Instructor, B.S., Lewis and Clark University, 1949; M.S., California State University, Hayward, 1973.

Mari G. Irvin, 1981, Professor of Education, B.A., St. Olaf College, 1955; M.S., University of Oregon, 1957; Ed.D., Northern Illinois University, 1974.

Heriberto Jaramillo, 1988, Visiting Assistant Professor of Education, B.S., Universidad de Antioquia, 1962; M.A., University of New Mexico, 1970; Ph.D., University of New Mexico, 1972.

Kathleen Kenfield, 1989, Assistant Professor of Education, A.B., University of California, Berkeley, 1970; M.A., University of California, Berkeley, 1973; Ed.D., University of the Pacific, 1986.

Margaret A. Langer, 1981, Associate Professor of Education, B.S., Pennsylvania State University, 1960; Ed.M., Rutgers University, 1969; Ed.D., 1974.

Estelle Lau, 1977, Professor of Education, B.A., University of California, Berkeley, 1945;

M.A., University of Chicago, 1947; Ph.D., Marquette University, 1976.

B. Jean Longmire, 1976, Associate Professor of Education, B.A., University of Wisconsin Madison, 1965; M.S., Georgetown University, 1969; Ph.D., 1976.

Robert C. MacMillan, 1982, Associate Professor of Education, B.S., Frostburg State College, 1971; M.Ed., 1973; M.A., West Virginia University, 1976; Ed.D., University of Alabama, 1979.

O. Boyd Mathias, 1965, Associate Professor of Education, B.S., Utah State University, 1954; M.S., Kansas State University, 1956; Ph.D., University of Missouri at Kansas City, 1962.

Hugh J. McBride, 1975, Professor of Education, B.B.A., Baruch College, The City University of New York, 1960; M.A., Teachers College, Columbia University, 1967; Ph.D., Michigan State University, 1972.

John P. Milon, 1990, Assistant Professor of Education, B.A., Ohio State University, 1962; M.A., University of California, San Diego, 1970; Ph.D., University of California, Santa Barbara, 1986.

Robert D. Morrow, 1975, Professor of Education, B.S., Ohio University, 1960; M.S., State University of New York, Brockport, 1968; Ed.D., University of Illinois, 1975.

Fred Muskal, 1970, Professor of Education, B.A., Roosevelt University, 1962; M.A., 1964; Ph.D., University of Chicago, 1975.

Barry F. Perlmutter, 1989, Assistant Professor of Education, B.S., Michigan State University, 1973; M.S., Northwestern University, 1980; Ph.D., Northwestern University, 1981.

Edward W. Pohlman, 1961, Professor of Education, B.A., La Sierra College, 1953; M.A., Seventh-Day Adventist Theological Seminary, 1956; M.A., Ohio State University, 1958; Ph.D., 1960.

Eutimio Topete, 1990, Visiting Assistant Professor, B.A., San Francisco State College, 1968; M.A., San Francisco State University, 1969; Ph.D., University of Colorado, Boulder, 1981.

Stephen E. Trotter, 1982, Associate Professor of Education, B.S., Stephen F. Austin University, 1972; M.S., University of Houston, 1976; Ph.D., The University of Utah, 1981.

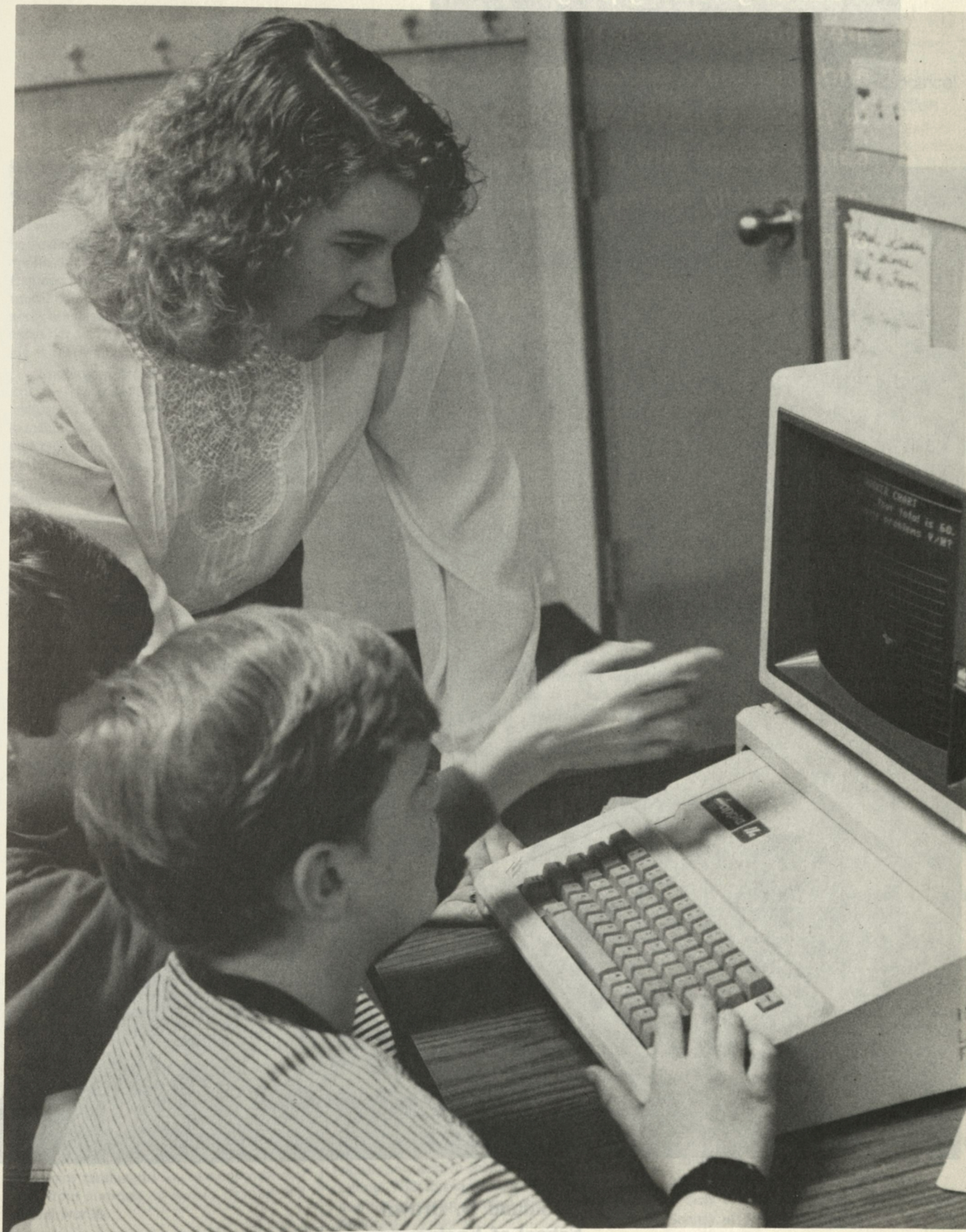
Judith L. Van Hoorn, 1982, Associate Professor of Education, B.S., University of Michigan, 1963; M.A., Columbia University, 1965; Ph.D., University of California at Berkeley, 1982.

Ellen J. Wehrs, 1988, Acting Director, Academic Skills Center, B.A., University of California, Berkeley, 1970; M.A., University of the Pacific, 1989.

Pierina Wong, 1986, Visiting Assistant Professor, B.A., University of California, Berkeley, 1965; M.A., California State University, San Jose, 1968; Ed.D., University of the Pacific, 1982.

D. Gayle H. Woolley, 1983, Assistant Professor, B.A., University of the Pacific, 1965; M.A., 1969; Ed.D., 1978.

Our engineering programs



*“Our engineering programs
are being poised now,
and into the 21st century,
to produce engineers who
can innovate and compete
successfully in the global
economy.”*



Ashland O. Brown
School of Engineering

SCHOOL OF ENGINEERING

A professional school of University of the Pacific offering undergraduate instruction in Civil, Computer, Electrical and Mechanical Engineering, also Engineering Management, Engineering Physics and Graduate instruction in Electrical Engineering, combined with paid professional practice in appropriate engineering jobs.

The Link Between Science and Society

No single definition of engineering is adequate; however, engineering is well described as the application link between science and society. Engineers must have the ability to apply theoretical knowledge to practical situations. Engineers are agents through whom science influences our society. Without question, engineering is involvement with mankind.

Engineers should develop dual competencies — technical and social. Engineers must understand and apply basic scientific principles to technical problems. In addition, they should understand the nature of human needs and behavior and the impact of technology on society. The School of Engineering, as part of a university with a strong liberal arts tradition, is striving to educate engineers who will have both social and technical competence.

The modern engineer deals with socially relevant matters including pollution, energy sources and utilization, recycling of materials, and public transportation systems by water, land or air. Engineers are experts in manufacturing processes, communications systems, medical electronics, the space program and numerous other endeavors that provide citizens of the world with a safer, more enjoyable life.

Engineering at Pacific

The engineering program at University of the Pacific consists of three well integrated parts: engineering courses, which provide the specialized training for professional competence in engineering; mathematics, natural sciences and a broad range of courses in the humanities and social sciences; and on-the-job experience in the cooperative education (Co-op) program. Under the Co-op plan, students alternate periods of paid professional employment with full-time university study, as shown in the Cooperative Education schedule. Through this three-fold program, theory and practice are interrelated; human problems and engineering come into sharp focus; and students find increased meaning in their studies.

By studying at a private university with a strong liberal arts heritage, Pacific engineering students interact with students whose objectives, attitudes and approaches to human problems are different from their own. They experience meaningful associations with students from a variety of social, political and cultural worlds.

Cooperative Education Schedule

ACADEMIC YEAR		Summer (May-Aug.)	Fall (Aug.-Dec.)	Spring (Jan.-May)
FRESHMAN YEAR		Optional	Classes	Classes
SOPHOMORE YEAR		Optional	Classes	Classes
JUNIOR YEAR (3rd Year)	Group A	Classes	Classes	First CO-OP
	Group B	First CO-OP		Classes
SENIOR YEAR (4th Year)	Group A	Classes	Classes	Classes
	Group B	Classes	Classes	Second CO-OP
SENIOR YEAR (5th Year)	Group A	Second CO-OP		Classes
	Group B	Classes	Classes	Classes

The Degree Programs

The School of Engineering offers six undergraduate degree programs: Civil, Computer, Electrical, Engineering Management, and Mechanical Engineering, and Engineering Physics. The engineering curricula are divided into lower division and upper division segments. The lower division stresses fundamentals in science, mathematics, and engineering. The first two years are essentially the same for all engineering majors. The upper division combines courses in the major area with work experience through the Co-op program. Civil, Computer, Electrical and Mechanical Engineering and Engineering Physics are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, Incorporated, the nationally recognized accrediting body for engineering curricula.

The School of Engineering also offers a Master of Science degree in Electrical Engineering which has coursework in controls, digital systems and automated systems. For additional details please see the Graduate School catalog.

Minor in International Engineering

The global economy is becoming increasingly integrated and international communications are now almost instantaneous. Thus, many professionals now need to operate in a multi-national setting. With this in mind, the School of Engineering offers an International Engineering Minor.

Students taking this Minor must fulfill all of the requirements for a major in one of the engineering disciplines. They must also complete 15 units in internationally-oriented courses, drawn from fields such as Political Science, Economics and Business. Students can minimize the extra time required to complete the Minor by making most of this "international" work coincide with their General Education component.

To obtain the Minor, students must also have proficiency in a foreign language at the second semester level, perform one of their CO-OP assignments or study semesters overseas, and maintain a GPA of 2.5.

National Honor Societies

Tau Beta Pi (Engineering Honor Society — all engineering majors)

Eta Kappa Nu (Honor Society — Electrical, Computer Engineering, Engineering Physics)

Student Affiliates of Professional Organizations

American Society of Civil Engineers Student Chapter

American Society of Mechanical Engineers Student Chapter

Institute of Electrical and Electronic Engineers Student Chapter

National Society of Black Engineers

Society of Hispanic Professional Engineers

Society of Women Engineers

Campus Clubs and Organizations

Associated Engineering Students
Associated Students of Engineering
Management

Cooperative Education

Cooperative education is an integral part of the engineering curriculum at the University of the Pacific. Students alternate between terms in the classroom and periods of full-term, paid professional practice. The work experiences are coordinated through the School of Engineering, Office of Cooperative Education. Faculty coordinators keep in close contact with students and their employers during the work periods.

Cooperative education employment enhances an engineering degree program by relating theory to practice. While on Co-op the students apply what they have learned in the classroom to a working situation. This process of "learning by doing" increases student motivation.

If a student receives financial aid, income from cooperative education employment affects the amount of financial assistance a student receives during each cooperative employment period.

The cooperative education program is required for graduation from the School of Engineering. There are two exceptions to this requirement. 1) Non-citizens of the U.S.A. are not required to Co-op but may do so if appropriate Co-op jobs are available to them. 2) Students who have prior work experience in engineering may petition for equivalent Co-op credit.

Students must be in residence at UOP for one semester immediately prior to their first Co-op experience. Students on academic probation are not eligible to participate in the Co-op Program, until they eliminate their academic deficiency. Also, students must realize that successful Co-op placements depend on many factors. Students are expected to maintain the highest possible GPA, to be willing to accept Co-op employment in a wide range of geographical locations, and to work aggressively with the Co-op Coordinators in preparing resumes, developing interviewing skills and seeking appropriate placement.

All lower division courses (or their equivalent) must be completed before a student is eligible for the Co-op program.

Engineering Tuition

Engineering is a five (5) year program at Pacific. The annual tuition and fees correspond to the University charges.

One-half the tuition rate is charged during the cooperative work period. This fee covers the placement itself and allows the student to attend summer school with no additional tuition costs.

Graduation Requirements

It is important that each student carefully monitor his/her academic program. Each student is expected to keep a record of courses completed each semester and consult regularly with their faculty adviser. Meeting the graduation requirements is each student's responsibility. If a student should deviate from the printed curriculum, careful academic scheduling will be required and a plan must be developed indicating all courses needed for graduation, and when the classes will be taken. After the plan of classes is completed, the schedule must be approved by the student's faculty adviser.

In order to graduate, students must meet the following requirements:

1. Successful completion of all courses required in the student's major.
2. Successful completion of 50 cooperative education credits and the Professional Practice Seminar.
3. A UOP GPA of at least 2.0.
4. An engineering GPA of at least 2.0. (Calculated on UOP Engineering courses only.)
5. Management engineering students must have at least 2.0 GPA in their business/management classes.
6. Successful completion of the required electives in the major.
7. Submission of application for graduation to the Registrar's Office by October 1st of the school year in which the student intends to graduate.
8. Signing of appropriate graduation documents in the School of Engineering, by the student's faculty adviser, and the Assistant Dean/Director of Cooperative Education.

General Education

Each student must complete 3 courses from Category I and 3 courses from Category II of the University's General Education Program. In addition, 2 of the 3 courses from each Category, must be thematically related and at least 2 must meet the ABET accreditation depth requirement. The student's adviser will provide assistance in identifying and scheduling the General Education sequence.

Community College Transfers

The School of Engineering subscribes to the "Common Core" lower division transfer program of the California State Engineering Liaison Committee (ELC).

Based on the most recent requirements of the California State Engineering Liaison Committee, any student from a California community college with a stated major in engineering, who presents a transcript showing satisfactory completion of the following proposed core program in lower division, will be able to enroll in this institution with regular junior standing.

Further, assuming normal progress, such a student can complete the academic require-

ments for the bachelor's degree in two additional years plus 12 months of Cooperative Education employment, which means that he/she should graduate in three years following the transfer. Completion of a specific degree program including the Co-op requirements will be dependent upon proper selection of elective courses.

Community College students **can transfer to the School of Engineering at any point in their academic program.** It is important that each student contact the appropriate Engineering Department at UOP and arrange for faculty assistance in planning their transfer.

Lower Division Curriculum
(Adopted by ELC — March 13, 1987)

Subject Area	Semester Units	Quarter Units
Mathematics	16	24
Chemistry	8	12
Physics	12	18
Statics	3	4
Graphics		
Descrip. Geom. & Computergraphics	3	4
Computer Programming (FORTRAN or Pascal)	2	3
Orientation and Motivation	1	1
Properties of Materials	3	4
Electric Circuits	3	4
Electives	11-15	17-23

Additional courses depend on the specific program of study. Student should consult with faculty adviser.

Academic Facilities

The School of Engineering's excellent facilities are readily accessible to engineering students. The school occupies four centrally located buildings on the Stockton campus.

Baun Hall, the original engineering building, houses the School of Engineering Dean's Office, the Office of Cooperative Education, faculty offices, electrical engineering laboratories and the Ralph M. Parsons Laboratory utilized by the civil and mechanical engineering departments for the study of engineering materials. The Parsons Laboratory features a dynamic materials testing system and a scanning electron microscope.

The Fluids Building houses a fully equipped fluid mechanics laboratory for experimentation in hydrostatics, hydrodynamics, and a tilting flume for fluid flow. The second floor serves as a student/faculty lounge.

Anderson Hall provides electrical and computer engineering laboratories, classrooms, engineering faculty offices, and a student study area.

Khoury Hall houses laboratories for study of instrumentation, energy, soils, and manufacturing systems, and the School's modern Computer Aided Design (CAD) system and graphics laboratory. Included in Khoury Hall are engineering faculty offices, classrooms and a study area for students.

Civil Engineering facilities include a materials laboratory for investigation of the physical and mechanical properties of engineering materials and soils. Electrical engineering laboratory facilities include modern test and measurement equipment necessary for the analysis and design of electrical and electronic circuits and systems. Computers are used extensively in support of coursework. Mechanical engineering facilities include laboratories in measurements, energy, materials manufacturing and computer-aided design and drafting.

The school's computer engineering laboratories are very well equipped. The facilities include numerous personal computers and state-of-the-art microcomputer development support, such as Hewlett-Packard logic analyzers.

All engineering majors make extensive use of the computer equipment available throughout the engineering complex. In addition to individual laboratory computers there are numerous VAX terminals, and personal computer work stations available to engineering students. A high speed Ethernet local area network interconnects the School of Engineering with other university computer resources.

Course Descriptions

Courses are numbered in accordance with the general University system.

Courses labeled "GGE" are intended for all engineering students, while courses labeled "GCE", "GME" or "GEE" are primarily intended for majors in the Civil (CE), Mechanical (ME) and Electrical (EE) departments.

A student may not enroll in a course unless all prerequisites are successfully completed with a grade of C- or better.

Engineering

GGE 5. Introduction to Engineering (2) Introduction to the principles and practices of engineering. Engineers and engineering activities in a technological society. Measurement, analysis and presentation of engineering data. Strength of materials and their utilization in design. Demonstrations and laboratory exercises. Prerequisite: AMA 41. (Fall).

GGE 15. Engineering Graphics (2) Principles and applications of graphics in engineering design. Pictorial and isometric sketching and orthographic projection. Use of auxiliary views and sections. Drafting standards and conventions, dimensioning and tolerances. Layout and assembly drawings, detail drawings and production drawings. Introduction to design; use of standard fasteners, bearings, seals and preferred sizes. Laboratory exercises using conventional methods and computer aided drafting systems. (Fall).

GGE 19. Computer Programming (4) Computer programming for engineering, science and business, with emphasis on the FORTRAN language. Fundamentals and applications. Prerequisite: Two years of high school mathe-

atics. (Fall, Spring and Summer).

GGE 20. Engineering Mechanics I (Statics) (3) The fundamental principles of static equilibrium resulting from the application of forces on particles and bodies. Prerequisites: AMA 53, APS 53. (Fall and Spring).

GGE 25. Professional Practice Seminar (1) This course is designed to prepare students for the Cooperative Education experience. Presentations from representatives of industry, government, education and former Co-op students. Also covers topics in engineering ethics, professionalism, time management and practice interviewing. Permission of instructor required. (Spring, Fall).

GGE 45. Materials Science — Properties and Measurements (4) The dependency of physical, chemical and mechanical properties on microscopic and macroscopic structure. Laboratory experiments on properties of metals, plastics and ceramics. Prerequisite: sophomore standing. (Spring).

GGE 79. Electrical Science (3) Concepts of voltage, current, power, energy, impedance, admittance, DC, AC, average and effective values. Network equations, laws and theorems. Steady-state solutions using phasors. Coupled circuits, transformers. Corequisites: APS 55, AMA 55, GGE 79L. Prerequisite: GGE 19 or ACS 51. (Fall, Spring and Summer).

GGE 79L. Laboratory to accompany GGE 79 (1) Basic electrical measurements. Laboratory treatment of concepts discussed in GGE 79. Must be taken concurrently with GGE 79. Prerequisite: Computer programming. Corequisites: APS 55, AMA 55, GGE 79.

GGE 120. Engineering Mechanics II (Dynamics) (3) The fundamental principles of particles and bodies in motion under the action of external forces. Prerequisites: GGE 20 and APS 53. (Summer, Fall and Spring).

GGE 121. Mechanics of Materials (4) Concepts of stress, strain and deformation, analysis and design of simple elements of structures and machines. Introduction to failure theory and energy methods. Prerequisites: GGE 20, AMA 57 and GGE 19. (Fall, Spring).

GGE 122. Thermodynamics I (3) The first and second laws of thermodynamics for open and closed systems. Properties of gases and liquids and ideal gases. Availability and entropy. Introduction to cycles for power and refrigeration. Prerequisite: ACH 25. Corequisite: APS 55.

Civil Engineering

GCE 22. Surveying (3) An introduction to plane and topographic surveying including laboratory work. Additional coverage includes the principles of geometric design and the use of the digital computer. Prerequisite: trigonometry. (Spring).

GCE 130. Fluid Mechanics I (4) The physical properties of fluids, statics and dynamics of incompressible fluids including hydrostatics, energy and momentum principles; laminar and turbulent flow with emphasis on pipe flow.

Laboratory included. Prerequisite: GGE 120. (Fall).

GCE 131. Fluid Mechanics II (4) Study of steady state open channel flow, elementary hydrodynamics, unsteady flow in pipe lines and dimensional analysis. Laboratory work included. Prerequisites: GCE 130, GGE 19. (Spring).

GCE 132. Introduction to Environmental Engineering (4) Natural processes affecting water quality, water and wastewater treatment. Occurrence and prevention of air pollution. Solid and hazardous waste management. Groundwater contamination and its prevention and cure. Prerequisites: GGE 19, ACH 25. (Fall).

GCE 133. Water Resources Engineering (4) Elements of the hydrological cycle: precipitation, infiltration and subsurface flow, streamflow and evaporation. Deterministic and probabilistic analysis of rainfall and streamflow data, for flood and drought frequency estimation, and for reservoir storage requirements. Use of computer methods in hydrologic and hydraulic design. Prerequisite: GCE 130.

GCE 134. Groundwater (4) The occurrence of various types of groundwater and associated natural contaminants. The principles involved in the transport of groundwater and contaminants (natural and manufactured). Application of computer modeling to the above phenomena with case studies and solution of practical problems. Prerequisites: ACH 25, AMA 57.

GCE 136. Design of Wastewater Facilities (4) Covers the details of water and wastewater conveyance and treatment plant facilities: pipe systems, pumping plants and treatment works. Prerequisites: GCE 130, 132.

GCE 140. Soil Mechanics and Foundations (4) Provides a basic knowledge of the characteristics of soils and their behavior as an engineering material. Engineering behavior covered includes consolidation, stress distribution and shear strength. Design applications include settlement predictions, shallow foundations, piers and piles. Includes laboratory work. Prerequisites: GGE 19, GGE 121. (Fall).

GCE 141. Foundation Design (4) Advanced topics in foundation design. Course covers the analysis and design of soil exploration programs, retaining walls, sheet piles, anchored bulkheads, slope stability, buried conduits, cofferdams and trench bracing. Computer methods are applied to the design process. Prerequisite: GCE 140. (Spring).

GCE 150. Transportation Engineering (4) Considerations and procedures in the planning and design of various transportation systems with primary emphasis on highways. Includes laboratory for field trips. Prerequisites: GGE 121, GCE 22, 140. (Spring).

GCE 160. Structural Analysis I (4) Analytical and graphical methods for trusses, beams and frames; approximate analysis of indeterminate framed structures; calculation of deflections using geometric and energy methods; influence lines; moment distribution and slope deflection. Prerequisites: GGE 19, 121 and AMA 57. (Summer).

GCE 161. Matrix Analysis of Engineering Systems (4) Analysis of structures and machines by matrix methods. Both classical methods and finite element methods are covered. Computer-aided analysis of structural mechanics problems is emphasized but problems in areas such as heat transfer and fluid flow are discussed. Prerequisites: GCE 160 or GME 120, AMA 57, GGE 19 or equivalent, recommended AMA 110. Students may not enroll in this course for credit if they have completed GME 178.

GCE 162. Structural Dynamics (4) An introduction to the theory of vibration of damped and undamped single and multiple degree of freedom systems. Both continuous and lumped mass systems are covered. Other topics include vibration isolation, transmissibility, use of response spectra and development of code provisions regarding earthquake resistant design. Prerequisites: GCE 160 or GME 120, AMA 57, GGE 19, familiarity with matrix methods is desirable. Students may not enroll in this course for credit if they have completed GME 128.

GCE 165. Structural Steel Design (4) Design of steel structural members, including plastic design, and connections to satisfy design code requirements. Studies include economy of materials and labor. Prerequisite: GCE 160.

GCE 166. Reinforced Concrete Design (4) Design and proportioning of structural systems to satisfy design criteria for reinforced concrete and prestressed design in concrete. Prerequisite: GCE 160.

GCE 167. Small Building Design (4) The design and analysis of wood structures due to gravity, lateral and combined loadings. Both member and connection details are considered. The design procedures, materials properties and allowable stress computations are based on UBC, NDS and other governing agencies. Prerequisite: GCE 160.

GCE 170. Engineering Administration (4) Decision making based upon engineering economy studies. Also emphasized are contracts, engineering specifications, professional ethics and the role of the engineer in the contracting process. Prerequisite: upper division standing in Engineering. (Summer, Fall).

GCE 180. Engineering Synthesis (4) A culminating experience wherein the individual student, or a group of students, synthesize their previous classwork into one project. One or more faculty members are involved depending upon the fields covered in the project. Prerequisites: senior standing. (Spring).

GCE 181-185. Professional Practice (1-18) Cooperative employment in a professional engineering environment. Students may register for a variable number of credits depending upon the length of the work period. Requires satisfactory completion of the work assignment and a written report. Pass/Fail basis.

GCE 191. Independent Study (1-4) Special individual projects are undertaken under the direction of one or more faculty members knowledgeable in the particular field of study.

Permission must be received by the department chairperson and the faculty members involved.

GCE 193. Special Topics (1-4) Upper division elective subject area based on expertise of faculty member. Prerequisite: Approval of instructor.

Electrical Engineering Computer Engineering

GEE 121. Systems I (3) Impulse and step functions. Transfer functions. Transient and steady-state analysis. Zero-input and zero-state components. Convolution. Analysis in time and in frequency domains. Fourier series and transforms. Laplace transforms and inverse transforms. Prerequisites: Computer Programming, GGE 79 and AMA 57. (Fall, Spring).

GEE 122. Systems II (3) Matrices and determinants. Eigenvalues and eigenvectors. Cayley-Hamilton theorem. State variables. State equations and solutions. Controllability and observability. Flow graphs. Discrete systems. Difference equations. Zero-input and zero-state components for discrete systems. Convolution summations. Z-transforms and inverse transforms. Prerequisite: GEE 121. (Summer).

GEE 125/225. Filter Design (4) Properties of network functions. Realizability conditions. Realization of LC, RC, RL networks. Butterworth, Chebyshev, Bessel filters. Active filters. Digital filters: IIR and FIR filters. Includes laboratory. Prerequisites: GEE 122 or GEE 131 and working knowledge of Z-transforms. (Fall).

GEE 127. Random Signals (3) Introduction to those areas of probability essential to a study of the engineering applications of random signals. Characterization of random signals in time and frequency domains. Linear system analysis with random inputs. Noise sources and modeling of noisy networks. Prerequisites: GGE 19, GEE 121, AMA 55. (Summer).

GEE 131. Electronic Circuits I (3) Principles of operation and equivalent circuit modeling of electronic devices. Discrete amplifier design and analysis. Prerequisite: GGE 79, GGE 79L. Corequisite GEE 121, GEE 131L, or permission of instructor. (Fall, Spring).

GEE 131L. Laboratory to accompany GEE 131 (1) Laboratory treatment of the concepts discussed in GEE 131. Must be taken concurrently with GEE 131. Prerequisites: GGE 79, GGE 79L. Corequisites: GEE 121, GEE 131. **GEE 132. Electronic Circuits II** (4) Continuation of GEE 131. Analysis, design and applications of analog integrated circuits. Includes laboratory. Prerequisites: GEE 131, GEE 131L. (Fall and Summer).

GEE 136. Digital Integrated Electronics (4) Integrated circuit transistor models. Analysis and comparison of bipolar and MOS logic families, semiconductor memories and application-specific IC's. Includes laboratory. Prerequisites: GEE 131, GEE 131L, GEE 171, GEE 171L. (Fall).

GEE 138. Semiconductor Devices and Circuits (4) Crystal properties. Quantum

mechanics. Wave equation. Tunneling. Energy levels and bands. Doping. Electrons and holes. Diffusion and drift. Continuity equation. P-n junctions: fabrication, equilibrium, biases, breakdown. Diodes and transistors, FETs. Integrated circuits: fabrication, devices, LSI, VLSI, packaging. Other devices (includes lab). Prerequisites: GEE 131, GEE 131L. (Spring).

GEE 144. Electromagnetics (4) Elements of static and dynamic field theory including applications. Maxwell's equations; travelling waves; radiation; antennas. Prerequisites: APS 55, AMA 151. (Spring).

GEE 145. Communication Systems (4) Elements of communication systems. Filtering and signal to noise ratios. Baseband communication systems. Quantizing and digital modulation including error rates. Analog modulation including noise performance. Frequency and time division multiplexing. Includes laboratory. Prerequisites: GGE 19, GEE 121, 127, 131, and 131L. (Spring).

GEE 152. Analog and Digital Simulation (4) Computer simulation of physical systems. Mathematical modeling of electrical, mechanical and thermal systems. Manipulation of transfer functions, estimating system parameters, modeling techniques for continuous systems and microcomputer simulation. Includes laboratory. Prerequisites: GEE 121 and GGE 19 or equivalent. (Fall).

GEE 161. Automatic Control Systems (4) Component and system transfer functions. Open and closed loop response; stability criteria; applications to engineering systems. Includes laboratory. Prerequisites: GEE 121, 131 and 131L. (Spring).

GEE 163. Energy Conversion (4) A study of electromechanical energy conversion. Magnetic circuits, transformers, basic rotating machines. D.C. machines, polyphase A.C. machines, fractional-horsepower A.C. motors. Includes laboratory. Prerequisites: GEE 121, GGE 79, 79L. (Spring).

GEE 171. Fundamentals of Digital Systems (3) Number systems, binary arithmetic, codes, Boolean algebra. Analysis and design of combinational circuits using small- and medium-scale integrated devices. Elements of sequential circuits. Prerequisites: GGE 19 or ACS 51, and AMA 53 or 37. Corequisite GEE 171L. (Fall, Spring, Summer).

GEE 171L. Laboratory to accompany GEE 171 (1) Laboratory treatment of the concepts discussed in GEE 171. Must be taken concurrently with GEE 171. Prerequisites: GGE 19 or ACS 51, and AMA 37 or 53. Corequisite: GEE 171.

GEE 173. Microprocessor-Based Systems Design (4) Design and implementation of digital systems using microprocessors, semiconductor memory and peripheral devices. Representative applications. Use of microcomputer development support systems. Includes laboratory. Prerequisites: GEE 171, 171L. (Fall, Spring).

GEE 174/274. Design of Digital Systems (4) Analysis and design of synchronous and asynchronous algorithmic state machines. System

controller design using medium- and large-scale integrated circuits and programmable devices. Includes laboratory. Prerequisites: GGE 79, 79L and GEE 171. (Summer, Spring).

GEE 175. **Computer Organization** (3) Organization and operation of the processor, memory and I/O units. Computer arithmetic. Register-transfer language. CPU design. Hard-wired and microprogram control. Prerequisite: GEE 171. (Fall).

GEE 176/276. **Computer Architecture** (3) Comparative studies of historical and contemporary computer systems. Single and multiple processor systems. Microprogrammed processors. Pipelined processing. Memory organization and management. Prerequisites: GEE 173 and 175; corequisite: ACS 173. (Spring).

GEE 177/277. **Computer Communications** (3) Study of global and local communications networks within the framework of the Open Systems Interconnection reference model. Performance analysis of contention systems, token rings and various contemporary networks. Prerequisite: GEE 173, and GEE 127 or AMA 39. (Spring).

GEE 181-185. **Professional Practice** (1-18) Cooperative employment in a professional engineering environment. Students may register for a variable number of credits depending upon the length of the work period. Requires satisfactory completion of the work assignment and a written report. Pass/Fail basis.

GEE 191. **Independent Study** (1-4) Special individual projects are undertaken under the direction of one or more faculty members knowledgeable in the particular field of study. Permission must be received by the department chairperson and the faculty members involved.

GEE 193. **Special Topics** (1-4) Special courses will be organized and offered from time to time to meet the needs or interests of a group of students.

GEE 195. **Electrical Engineering Project I** (2) Initiate research and planning for the design of a system, component or process to meet a specific need. Define specifications, set objectives and criteria. Proceed to design and begin implementation. Research reports, technical journal abstracts required. Includes written and oral progress reports, and presentations. Prerequisites: GEE 121, 171, 171L. Corequisites: GEE 132 and senior standing. (Fall, Spring and Summer).

GEE 196. **Electrical Engineering Project II** (2) Continuation of GEE 195. Complete and test project begun in GEE 195 to meet specifications. Periodic project reviews. Final written and oral reports and project demonstration. Prerequisite: GEE 195. (Fall, Spring, Summer).

GEE 197. **Computer Engineering Project I** (2) Origination, definition and specification of a project/product, followed by design to meet specifications. Instruction in design procedures and practices. Design research; technical journal abstracts. Periodic design reviews. Written and oral reports. Prerequisites: GEE 121, 131, 131L, 173, 174 and ACS 171. (Fall,

Spring, Summer).

GEE 198. **Computer Engineering Project II** (2) Continuation of GEE 197. Project is completed and tested. Periodic project reviews. Final written and oral reports and project demonstration. Prerequisite: GEE 197. (Fall, Spring, Summer).

GEE 221. **Electrical Networks** (3) Networks as graphs. Network topology. Incidence and cutset matrices. Euler's graph and formula. Binet-Cauchy Theorem. Maxwell's formula. Topological formulas. Sensitivity. Scattering parameters. Prerequisites: GEE 122 and graduate standing. (Spring of odd years).

GEE 247. **Digital Signal Processing** (3) Discrete-time systems: two-dimensional discrete-time sequences, two-dimensional z-transform, Hilbert transform. Spectrum analysis of discrete signals: Discrete Fourier series, Fast Fourier transform (DIT and DIF). Digital filtering: Direct design (as opposed to transformations from analog systems) of FIR and IIR filters, quantization effects. Prerequisite: GEE 122 or GEE 125 and graduate standing. (Fall).

GEE 257. **Combined System Simulation** (3) Use of digital computer simulation in analysis and design of large-scale systems with com-

bined continuous and discrete behaviors. Statistical aspects of simulation. Prerequisites: GGE 122, 152, 171, AMA 131 and graduate standing. (Spring).

GEE 267. **Advanced Control Systems** (3) State-space approach to analysis of linear and nonlinear systems. Normed spaces, induced norms, metric measures. Approximate analysis methods — describing functions, numerical and singular perturbation techniques. Lyapunov stability criteria. Prerequisites: GEE 122, GEE 161, AMA 141 and graduate standing. (Spring).

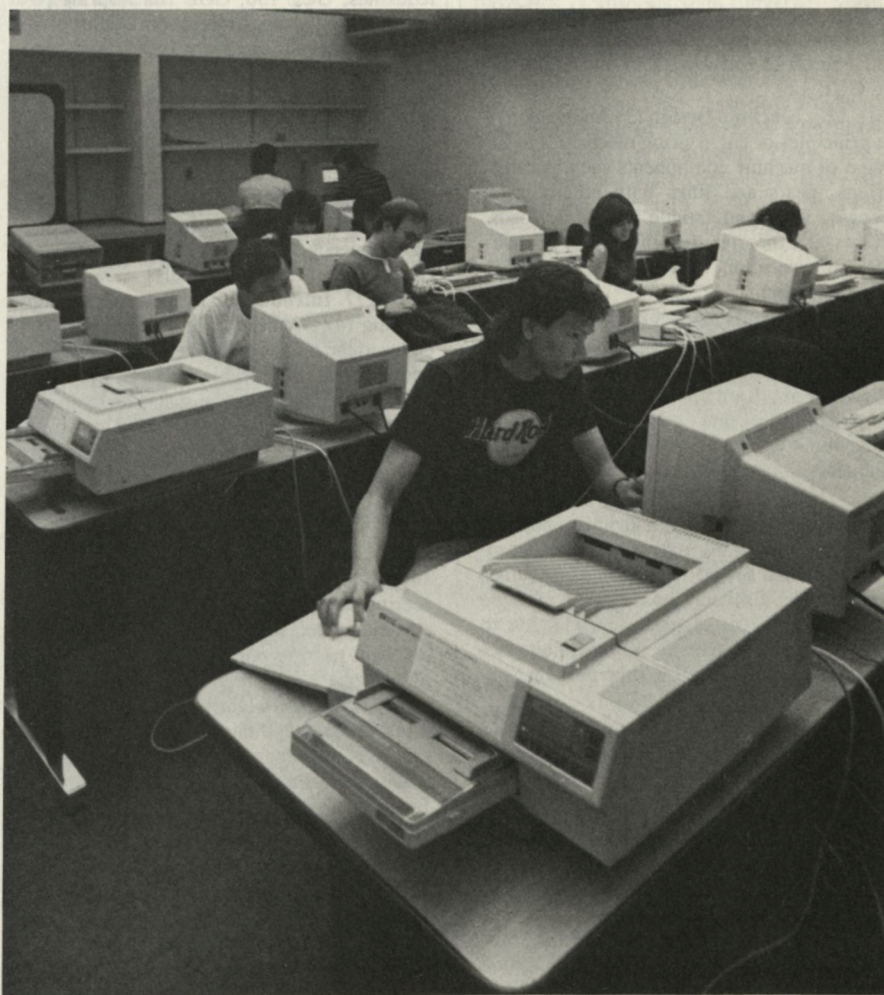
GEE 278. **Finite State Systems** (3) Mathematical descriptions of finite state systems. Trajectories. Equivalence. Design of testing and control sequences. Identification experiments. Memory length and information losslessness. Decomposition. Synthesis of systems from binary components. Prerequisites: ACS 147, GEE 171 and graduate standing. (Fall).

GEE 291. **Graduate Independent Study** (1-4) GEE 293. **Special Topics** (1-4) Courses in the MSEE program will initially be offered as special topics.

GEE 295. **Graduate Seminar** (1-4)

GEE 297. **Graduate Clinic/Research** (3-6)

GEE 299. **Thesis** (3)



Mechanical Engineering

GME 100. Manufacturing Processes (4) A study of traditional manufacturing processes such as forming, cutting, joining, casting, heat treating as well as advanced processing methods. Relationship between design and manufacturing methods. Prerequisite: GGE 45. (Fall).

GME 102. Materials in Engineering Design (3) Application of materials selection and processing parameters to engineering design. Study of the interaction between design criteria, materials selection and manufacturing methods. Materials selection for optimum performance. Economics of materials, cost vs. performance relations and value analysis. Evaluation methods and case studies in functional design applications. Prerequisites: GGE 121 and GGE 45.

GME 110. Instrumentation and Experimental Methods (4) Experimental techniques in the measurement of quantities such as strain, force, temperature, pressure, flow, motion and noise. Reliability and errors in measurement; data analysis and transmission. Use of instruments in the laboratory; a measurement project. Prerequisite: AMA 57. (Fall).

GME 112. Mechanical Engineering Problems (3) Identification and solution of engineering problems using computers and numerical methods. Computation methods such as finite difference and finite element. Design and development of software. Prerequisite: AMA 57, GGE 120.

GME 120. Machine Design (3) Application of the principles of engineering mechanics to the design of machine components such as cams, springs, gears and links with emphasis on strength, wear and fatigue. Dynamic loads, stresses and theories of failure. Use of bearings and lubrication. Prerequisites: GGE 120, 121. (Summer).

GME 123. Kinematics and Dynamics of Machinery (3) Design, analysis and simulation of complex mechanisms with emphasis on high speed and precision applications. Kinematics and dynamics of planar and three dimensional mechanisms; gyroscopic forces in machines and balancing; applications to robotics. Prerequisites: GME 120, 121.

GME 129. Vibrations (3) Modeling of physical systems with lumped and distributed parameters. Free and forced vibrations of machines and structures. Excitation and response of single degree of freedom systems. Introduction to multiple degree of freedom systems, finite element formulations and mode superposition techniques. Prerequisites: GGE 120, 121. (Spring).

GME 140. Engineering Design (3) Activities involved with the engineering design process. Creativity, modeling and simulation, introduction to optimization, economic factors, use of codes and standards, product liability, ethics, value engineering, safety, reliability, and esthetics. Case studies of design. Prerequisite: Senior status.

GME 141. Mechanical Engineering Design Project (3) The student will complete an engineering design for a product or process involv-

ing mechanical engineering. Creative design, selection of components, status reports and a final comprehensive oral and written design report are required. Prerequisite: GME 140.

GME 150. Heat Transfer (3) Heat transfer by conduction in one, two and three dimensions in transient and steady state. Heat transfer in extended surfaces. Solutions by numerical methods. Convection in external and internal flow; free convection, radiation. Prerequisites: GCE 130, GGE 122. (Summer).

GME 151. Applied Heat Transfer (3) Applications and extensions of the topics in GME 150. Multi-mode heat transfer; heat exchangers. Heat transfer with phase change. Prerequisite: GME 150.

GME 157. Thermodynamics II (3) Continuation of topics in Thermodynamics I. Chemical reactions, combustion, and fuels. Processes involving air and water mixtures relating to heating, cooling and ventilating for human comfort. Introduction to the thermodynamics of the flow of ideal gases. Prerequisite: GGE 122.

GME 160. Fluid Dynamics (3) Equations of continuity, energy, and momentum as applied to fluid flow. One dimensional compressible flow. Introduction to more advanced topics, such as viscous flow and potential flow. Prerequisites: GCE 130, GGE 122. (Spring).

GME 175. Systems Analysis and Control (3) Dynamic analysis and control of systems composed of mechanical, electrical, hydraulic and thermal components. Use of system modeling and simulation techniques to predict transient and steady state response; lumped parameter approximations and linearization. Use of feedback to enhance system performance and stability. Design of linear control systems in the time and frequency domains. Prerequisite: GGE 79. Corequisite: GME 110. (Fall).

GME 177. Introduction to Biomedical Engineering (4) Application of engineering principles to the human body and to systems of the body. Topics will include the respiratory, cardiovascular and digestive systems along with temperature regulation mechanisms, prosthetic devices and the senses of sight and hearing. Two design/research papers will constitute a major part of the course work. Prerequisite: senior standing and consent of instructor.

GME 178. Finite Element Methods (3) Introduction to the finite element method for engineering problems. Matrix formulation of finite element models for problems in solid mechanics, heat transfer and fluid flow. Solution of finite element equilibrium equations. Development of computer algorithms and applications using commercial finite element computer programs. Some familiarity with matrix methods is desirable. Prerequisite: GME 120 or GCE 160. (Spring).

GME 181-185. Professional Practice (1-18) Cooperative employment in a professional engineering environment. Students may register for a variable number of credits depending upon the length of the work period. Requires satisfactory completion of the work assignment and a written report. Pass/Fail basis.

GME 191. Independent Study (1-4) Special individual projects are undertaken under the direction of one or more faculty members knowledgeable in the particular field of study. Permission must be received by the department chairperson and the faculty members involved.

GME 193. Special Topics (1-4) Special courses will be organized and offered from time to time to meet the needs or interests of a group of students.

GME 195. Seminar (1-4) Presentation of special topics of current interest by and for staff, students and guests. (Fall, Spring).

GME 197. Undergraduate Research (2-4) Applied or basic research in mechanical engineering under faculty supervision. Projects may be experimental, mathematical, or computational in nature. Approval by the faculty supervisor and department chairperson is required. Student must be in good academic standing.

Engineering Management

The Bachelor of Science in Engineering Management is offered to provide academic preparation for individuals who plan a management career in a technically related field.

Courses are taken in an engineering discipline through the third year with a fourth year of selected course work in Economics and Business Administration.

The engineering options include Civil Engineering, Electrical Engineering, Mechanical Engineering, and a general option.

Engineering Physics

The Bachelor of Science in Engineering Physics is offered in cooperation with the Department of Physics in College of the Pacific.

The Engineering Physics curriculum develops sufficient depth in both engineering and science to produce graduates who are able to relate basic knowledge to practical problems in engineering.

Courses are taken from physics and all engineering fields. The student will have advisers from Physics and Engineering.

School of Engineering Faculty

Ashland O. Brown, 1991, Dean and Professor of Mechanical Engineering, B.S., Purdue University; M.S., 1968, Ph.D., 1974, University of Connecticut. Registered Engineer, New York, Connecticut and South Carolina.

Robert E. Hamernik, 1962, Associate Dean and Professor of Civil Engineering, B.S., University of Oklahoma, 1959, M.S., 1960; Ph.D., Oregon State University, 1973. Registered Professional Engineer; Structural Analysis, Structural Design.

Civil Engineering Department

David Q. Fletcher, 1973, Head and Professor of Civil Engineering, B.S., University of California, Davis, 1967; M.S., 1970; Ph.D.,

1973. Registered Professional Engineer; Continuum Mechanics, Structures, Soil Mechanics. **Robert E. Hamernik, 1962, Professor of Civil Engineering**, B.S., University of Oklahoma, 1959; M.S., 1960; Ph.D., Oregon State University, 1973. Registered Professional Engineer; Structural Analysis, Structural Design. **Robert C. Johanson, 1980, Professor of Civil Engineering**, B.S., University of Natal, 1962; M.S., Civil Engineering Hydrology, 1968; Ph.D., Civil Engineering Hydrology, 1971; Stanford University. Registered Civil Engineer; Hydraulics, Hydrology, Groundwater, Environmental Engineering, Water Quality. **James R. Morgali, 1961, Professor of Civil Engineering**, A.B., Willamette University, 1955; B.S., Stanford University, 1955; M.S., 1956; Ph.D., 1964. Registered Professional Engineer; Fluid Mechanics, Engineering Mechanics, Engineering Economy. **Lynne Dee Stauss, Visiting Research Scientist, Environmental Protection Division Naval Civil Engineering Laboratory**, B.S., Edinboro State College, 1978; M.S., Western Washington University, 1982.

Electrical and Computer Engineering Department

Richard H. Turpin, 1984, Head of Electrical and Computer Engineering, Professor of Electrical Engineering and Computer Engineering, B.S.E.E., Iowa State University, 1962; B.S., Mathematics, 1962; M.S.E.E., University of Southern California, 1964; Ph.D., Ohio State University, 1969; Digital Systems, Microcomputers, Embedded Systems Design. **David F. Besch, 1985, Assistant Professor of Electrical Engineering**, B.S.E.E., University of Illinois, 1961; M.S.Met. Eng., Lehigh University, 1965; M.B.A., (Executive Program) University of Chicago, 1971. Registered Professional Engineer. Power System Analysis and Design, Microelectronic Design, Failure Analysis and Prevention.

Mauro J. Caputi, 1991, Assistant Professor of Electrical Engineering, B.S., Manhattan College, 1981; M.S., 1984; Ph.D., Virginia Tech., 1991. Estimation Theory, Stochastic Signal Processing.

George T. Hankins, 1980, Professor of Electrical Engineering and Computer Engineering, B.S.E.E., USAF Institute of Technology, 1955; M.S.E.E., Southern Methodist University, 1961; Ph.D., Union Graduate School, 1977. Digital Systems, Integrated Circuits, Radar Systems, Social Dynamics of Technology.

W. Joseph King, 1983, Associate Professor of Electrical Engineering and Computer Engineering, B.S.E.E./C.S., University of California, Davis, 1977; M.S.E.E./C.S., 1978. Registered Professional Engineer; Computer Languages, Digital Design, System Software, Microprocessors.

Thuan V. Nguyen, 1969, Professor of Electrical Engineering, A.B., Chu Van An Col-

lege, 1951; L.L.B., University of Hanoi, 1952; M.A., University of New Mexico, 1960; M.S., Stanford University, 1962; Ph.D., University of New Mexico, 1969. Networks, Field Theory, Computer Science.

William J. Park, Jr., 1986, Associate Professor of Electrical Engineering and Computer Engineering, B.S., Plant Science, Clemson University, 1978; M.S., 1981; Ph.D., 1986. Spread Spectrum Coding, Microcomputers, Electronic Music Synthesis.

W. Lee Pfeifferman, 1985, Assistant Professor of Electrical Engineering and Computer Engineering, B.S.C.S., University of Illinois, 1976; M.S.E.E., Purdue University, 1978. Computer Engineering, Data Communications. **Andres F. Rodriguez, 1964, Professor**, D. of Science, Havana University (Cuba), 1955. Applied Physics, Electromagnetism.

George W. Schroeder, 1981, Professor of Electrical Engineering, B.S.E.E., St. Louis University, 1964; M.S.E.E., 1968; Ph.D., University of Missouri, Columbia, 1971. Linear Systems, Stochastic Processes, Communication Theory, Optical Communication.

Mechanical Engineering Department

Edwin R. Pejack, 1982, Head and Professor of Mechanical Engineering, B.M.E., Rensselaer Polytechnic Institute, 1961; M.S.M.E., 1962; Ph.D., Ohio State University, 1967. Registered Professional Engineer; Fluid Mechanics and Thermal Sciences.

Steven K. Howell, 1983, Associate Professor of Mechanical Engineering, B.S.M.E., Southern Methodist University, 1976; M.S.M.E., 1977; Ph.D., University of British Columbia,

1983. Fluid Mechanics and Thermal Sciences, Instrumentation and Experimental Methods. **Calvin D. Lundeen, 1990, Assistant Professor of Mechanical Engineering**, B.S.M.E., Oklahoma State University, 1983; M.S.M.E., 1986; Ph.D., Texas A&M University, 1990. Materials Science, Manufacturing, and Tribology.

John R. O'Dell, 1988, Associate Professor of Mechanical Engineering, B.S.E.E., University of Oklahoma, 1971; B.S.M.E., 1976; M.S.M.E., 1977; Ph.D., 1987, University of Texas. Instrumentation, System Dynamics, Computer Control, Robotics.

Said Shakerin, 1986, Assistant Professor of Mechanical Engineering, B.S., Engineering and Applied Science, Portland State University, 1979; M.S.M.E., Oregon State University, 1981; Ph.D., Mechanical Engineering, Colorado State University, 1986. Thermal-Fluid Sciences.

Office of Cooperative Education

Thomas H. Cheney, 1978, Associate Professor and Director of Cooperative Education, Assistant Dean, A.A., Santa Monica College, 1967; B.S., California State University Northridge, 1971; M.A., Utah State University, 1976. Earth Science, Instructional Media, Human Relations and Organizational Behavior.

Gary R. Martin, 1983, Associate Professor and Coordinator of Cooperative Education, B.A., University of California, Davis, 1981; M.S., California State University, Hayward, 1982. Ed.D., University of the Pacific, 1987. Educational Counseling and Psychology, Pupil Personnel Services Credential.



“SIS offers an undergraduate education for the 21st century — a solid knowledge of the student’s own heritage, an understanding of the great issues of our time, and an integrated experience of another part of the world.”



**Martin C. Needler, Dean
School of International Studies**

SCHOOL OF INTERNATIONAL STUDIES

An undergraduate school devoted to the study of global affairs, offering students five distinct major programs in conjunction with study abroad in one or more of 187 locations in 53 countries.

The five majors in the School of International Studies, "International and Regional Studies," "International Relations," "International Relations (Economic Emphasis)," "Development and Cultural Change," and the self-designed major, are designed to prepare students for careers in business, law, government, journalism, and other professions in the 21st century, in the most globally integrated society in human history.

Building on years of experience in the teaching of international relations, international studies, and international business, this newest school at the University of the Pacific offers a unique, challenging program of study. Its faculty brings to it a wide range of knowledge and experience from all regions of the world and in many different academic disciplines including politics, economics, history, business, anthropology, and sociology.

All of the School's majors are interdisciplinary, for in order to understand the world or any of its regions or nations one needs to understand how economic systems grow out of history and culture, the role that language plays, and how political systems work.

By drawing faculty from many fields into one school, SIS is able to integrate programs and relate subject areas in ways not usually achieved. By creating a separate undergraduate school, the programs ensure close contact with professors dedicated to undergraduate education. By being part of a mid-sized university, the school is able to draw on a wide range of academic offerings and facilities.

Whether a student is planning an international career in the public or private sector, wishes to prepare for further postgraduate education, or wants to create a globally oriented liberal arts education, the School of International Studies will provide a small and supportive community of students and scholars dedicated to understanding and shaping the world of the twenty-first century.

Core Requirements

All majors have a common core of requirements:

- Contemporary World Issues (SIS 77 and SIS 79) — a basic introduction to current global issues and problems in the context of world history in the 20th century.
- Competence in a modern foreign language equivalent to four semesters of college work.
- Perspectives on World History (SHI 81)
- Cross-cultural Training I (SIS 151) prior to going abroad
- At least one semester of study abroad
- Cross-cultural Training II (SIS 161) on return from abroad
- International Studies Senior Seminar (SIS 195)
- Two courses on regions or nations other than the U.S.

- One other SIS-listed elective.

This core program will provide a solid base from which to branch out and specialize. Also, such a core program ensures that from the very first semester a student will be in close contact with the other students and the faculty in the school.

Each student is expected to take courses to fulfill the University's nine-course General Education requirement, to ensure a well-rounded university experience. Many of the courses in the core program and in the majors fulfill such General Education requirements. Graduation from the School of International Studies requires the completion of 128 units of academic work.

Majors

International and Regional Studies

The International and Regional Studies major is a broadly conceived one which allows the student considerable flexibility to specialize in a particular nation or world area. All students work closely with faculty advisers in the crafting of individualized programs. In addition to the core, the requirements are:

Two approved courses on a particular nation; one approved course on a particular cultural region; one approved course on the interactions between cultural regions; and one approved course comparing regions.

International Relations

The International Relations major emphasizes the study of international politics and economics and the relationship between the two. In addition to the core, the requirements are:

Introductory Microeconomics (AEC 53); Introductory Macroeconomics (AEC 55); International Politics (APO 51); Theories of International Politics (SPO 160); International Economic Relations (SEC 71)¹; one course in comparative politics, one additional course in foreign policy and two in international politics, all four of which are to be selected in consultation with the student's adviser.

¹SEC 121-International Trade and SEC 123-International Finance together may be substituted for SEC 71.

International Relations (Economic Emphasis)

The major in International Relations (Economic Emphasis) emphasizes the study of international economic relations, business, and finance. In addition to the core, the requirements are:

Introductory Microeconomics (AEC 53); Introductory Macroeconomics (AEC 55); International Trade (SEC 121); International Finance (SEC 123); International Politics (APO 51); Principles of Financial Accounting (LBA 31); International Business (LBA 106); and two other courses in international economics,

politics, or business chosen from a selected list for this major.

Business Minor Track

Students who wish to take a minor in management may do so within the framework of this major by adding one course, LBA 109, to their programs. They would then complete the IR (EE) major with a minor in management by taking the core plus the following courses:

Introductory Microeconomics (AEC 53); Introductory Macroeconomics (AEC 55); International Politics (APO 51); International Trade (SEC 121); International Finance (SEC 123); Principles of Financial Accounting (LBA 31); International Business (LBA 106); Management and Organizational Behavior (LBA 109); and two courses chosen from among International Business/Government Relations (LBA 133); Multinational Strategic Management (LBA 168); Comparative Management (LBA 169).

Development and Cultural Change

The major in Development and Cultural Change focuses on problems of grassroots development in the "Third World." In addition to the core, the requirements are:

Introductory Microeconomics (AEC 53); Introductory Macroeconomics (AEC 55); Dynamics of Social and Cultural Change (ASO 114); Political Development (SPO 193); Economic Development (SEC 125); two other courses appropriate to the major, or one course and one internship, chosen with the adviser's approval. It is recommended that Cultural Anthropology (ASO 53) be one of these courses. The semester abroad must be in a program approved by the adviser as appropriate to the major.

Self-Designed Major

In consultation with the adviser, and with the approval of the SIS Committee on Academic Standards and Curriculum, the student may design his or her own program of at least five courses to be taken in addition to the core. Such a program should constitute an integrated whole substantially different from the standard SIS majors in content. To qualify for a self-designed major, a student should have a grade point average above 3.0. The student's proposed plan should be submitted to the Academic Standards Committee before the student has completed 97 units of college work.

Modifications in SIS Majors for Students From Abroad

1. **Study Abroad requirement:** This may be waived by the SIS Academic Standards and Curriculum Committee, on petition by the student.
2. **Language requirement:** This will be waived

for a student fluent in a mother tongue which is not English, on evidence of proficiency in English (e.g., by an acceptable TOEFL score).

3. **Cross-Cultural Training:** Students from abroad may be exempted from taking SIS 161. Foreign students may substitute SIS 141 (Cross-Cultural Training for Foreign Students) for SIS 151.
4. Courses on the U.S. may be taken instead of the two courses on countries other than the U.S. required in the core requirements for the major.

Because the national status of some students may be ambiguous, academically appropriate adjustments in these requirements will be made as individual cases warrant. Such students should consult with their advisers and with the Assistant Dean as early as possible in their college careers.

Study Abroad — The Office of International Programs

The School of International Studies administers an unusually wide variety of study abroad options for all students at UOP. Currently the Office of International Programs in the Bechtel International Center makes available 187 locations in more than 53 countries all over the world. Students should consult the most recent edition of the *Study Abroad Handbook*, which is available at the Office of International Programs. The *Handbook* gives brief descriptions of programs, admissions requirements, University policies pertaining to study abroad, and general advice. The Office of International Programs also maintains a library of work, study, and travel abroad information for the campus as well as educational materials on cross-cultural study, scholarship aid, and career opportunities, and general tourist information.

Students are advised that admission to an approved study abroad program requires a minimum grade point average of 2.5.

Course Offerings

Courses starting with the letter "S" are offered under sponsorship of the School of International Studies. SIS students are required to take courses from other units of the University as well as those offered by the School. Courses starting with the letter "A" are located in the College of the Pacific (e.g. AGE 128 "Political Geography" can be found in the Geology and Geography section of the College of the Pacific) and courses designated by "LBA" are to be found in the School of Business and Public Administration.

SIS Core Courses

- SIS 77. **Contemporary World Issues** (4) A basic introduction to current world geography, issues, and problems in the context of global history in the 20th century.
- SIS 79. **Contemporary World Issues II** (4) Building on the historical and geographical background to issues developed in SIS 77, this course will single out four or five central prob-

lem areas (e.g. environmental problems, ethnic conflicts, economic development) for more intensive study. Emphasizing the cultural, philosophical, and political dimensions of these issues, this semester will also be concerned with methodological and epistemological problems involved in studying world issues, disciplinary vs. interdisciplinary approaches to such study, and the investigation of how individual and group responses to such problems manifest assumptions about how the world works. Prerequisite: SIS 77 or permission.

SHI 81. **Perspectives on World History** (4) A study of the shape of human history from its beginnings to the present day. The course will be built around the work of several modern historians whose interpretations differ, but whose insights help us to understand humanity's attempt to cope with life on Earth.

SIS 151. **Cross-cultural Training I** (2) A course designed to prepare the student, American or foreign, for study and life abroad. Topics include American values and assumptions, cross-cultural communication, cross-cultural adjustment and problems, and research on the host country.

SIS 161. **Cross-cultural Training II** (2) A course designed to analyze and evaluate the effects and consequences of cross-cultural exposure. Topics include entry and return culture shock, linguistic/proxemic communications, alterations in value structure, and paradigms for characterizing personal and cultural change.

SIS 195. **International Studies Senior Seminar** (4) A culmination of the four-year program, this course seeks to integrate the international course work in an analysis of policy alternatives using a wide range of disciplinary skills. Permission of instructor required.

Additional Courses

SIS 120. **Japanese Culture and Society** (4) A survey of the people and cultures of the Japanese archipelago from prehistory to modern times, particularly the inter-relationship of social structure, environment, cultural patterns, economics and political organization. Topics will include family form, religious change, urbanism, and industrialism. No prerequisites, but recommended for international and regional studies majors and those interested in participating in an overseas program in Japan.

SIS 121. **South Asian Civilization** (4) An introduction to the social organization, belief systems and economic patterns of the nontribal peoples of India and surrounding areas. Emphasis will be placed on the interrelationship between Hinduism, kinship, and the general forms and functions of the caste system, particularly as it affects modernization and the contemporary political and economic situation. Not recommended for freshmen.

SIS 122. **Contemporary African Societies** (4) A survey course on Sub-Saharan Africa, introducing students to the diversity of life on the continent today. The course explores the economic, political, and social systems which currently shape life in Africa. After learning about

the basic history, geography and cultural systems, the course will consider such themes as: environmental degradation, underdevelopment, political instability, overpopulation, racism, and economic inequalities.

SBS 35. **Environmental Problems and Perspectives** (4) Introduction to principles of ecology as they bear on world environmental problems. Emphasis is on biological aspects of world problems and on the interrelationships between culture and environment. Global dimension of population, resources, food, energy, and environmental impact are considered. No prerequisites.

SEC 71. **International Economic Relations** (4) Study of the sources of international economic problems and the economic policies which nations can follow to resolve these trade problems. Consideration of why nations trade with each other, how to pay for foreign goods, and how well international economic institutions have worked to mitigate trade problems. A brief look at comparative advantage, protectionism, multinational corporations, the foreign exchange market, the balance of payments, international capital flows, the IMF, the World Bank, and several other institutions of the international economy. Prerequisites: AEC 53 and 55 or permission of the instructor.

SEC 121. **International Trade** (4) Study of theories of international economics and their application to the understanding of major economic problems worldwide. Arguments for and against uninhibited trade are analyzed, as are topics such as tariffs and quotas, the multinational corporation, and trade sanctions. Prerequisites: AEC 53 and 55.

SEC 123. **International Finance** (4) Study of the financial side of international economics. Analysis of such things as international investment, foreign aid, and the international debt crisis. International monetary theory comprises a core topic of the course. It includes discussion of exchange rate determination, the monetary approach to the balance of payments, currency substitution, and international aspects of price inflation. Prerequisites: AEC 53 and 55.

SEC 125. **Economic Development** (4) Examines the plight of the world's poor countries. Discussion of the extent of world poverty. Review of the evolution of ideas on the topic of economic development over the past three decades. Course considers the following types of questions: What are the causes of development and/or underdevelopment? Are Third World countries merely at a primitive stage of development analogous to European countries prior to the Industrial Revolution? What are the roles of climate, the legal system, education, health and sanitation, natural resources, technology, multinational corporations, religious beliefs, and so on? Prerequisites: AEC 53 and 55, or permission.

SEC 127. **Comparative Economic Systems** (4) Analysis of economic systems different from the U.S., with emphasis on the planned economies of the Soviet Union, China, and Eastern Europe. The mixed and welfare economics of Western

Europe and Japan are examined. The course includes an introduction to formal planning models and their solution on the computer. Similarities with and dissimilarities from the U.S. in aims, institutions, and basic problems are evaluated. Prerequisites: AEC 53 and 55, or permission. SEC 128. **Population Systems** (4) A study of the interactions between a society's population and its economy. Analysis of how the economic well-being of society affects fertility, mortality, and migration, and how they in turn affect the structure of the economy. A look at Malthusian and neo-Malthusian theories of population growth, the theory of the demographic transition, and Marxist views on population growth. Analysis of over-population, food production, pollution, and the economic development of poor countries. Emphasis on feedback effects in the population system and in the economic system. Prerequisite: AEC 53 or AEC 55.

SGE 138. **Agriculture, Food and Famine** (4) A survey course to introduce the major themes in the history and geography of world agriculture, food production, and consumption. The initial perspective is taken from environmental geography, and subsequent themes will pursue socio-economic issues, then close with an analysis of historical and contemporary areas of food shortage and famines.

SHI 146. **History of Mexico** (4) Ancient indigenous Mexico, Spanish conquest, the development of colonial institutions, independence and the rise of the republic. The aim of the course is to view the treatment of colonial-like institutions in the context of 20th century national social revolution.

SML 93. **Literature Across Cultures** (4) On the basis of selected works taken from the vast body of contemporary world literature, the course surveys the variety of literary expression from cultures around the globe. Although often separated physically by continents, creative writers respond to fundamental human dilemmas in ways characteristic of their craft as well as individuals and members of a culture. Students read, compare, and discuss these responses as they have been formed in Nigeria, Berlin or Sao Paulo, Tokyo, Paris or Mobile.

SIS 141. **Cross-Cultural Training for Foreign Students** (3). A course designed to prepare the foreign student to understand and adapt to life overseas, particularly within the American educational system. Topics include comparative value systems, analysis of cultural events, and American schools as reflections of the larger society.

SPH 122. **Comparative Philosophy** (4) An introduction to philosophy through the works of great thinkers from three of the world's major cultures — China, Greece and Islam — studied in a comparative format and centered on questions which have faced human beings in every age and civilization.

SPO 142. **Comparative Communist Systems** (4) An inquiry into the structure and workings of government and politics in China, U.S.S.R., Yugoslavia, and North Korea, considering the similarities and differences among these systems

toward an understanding of what they have in common that sets them off from non-Marxist systems. Prerequisite: APO 11 or 41.

SPO 160. **Theories of International Politics** (4) Intensive study of the principal analytical and normative theories of international politics and behavior. Prerequisite: APO 51 or permission. SPO 162. **International Organization** (4) Examination of the role of international organization in the contemporary global political system. Major theories and approaches in the field will be studied in conjunction with topics such as interstate conflict and peacekeeping, arms control and nonproliferation, human rights, economic relations between developed and developing countries, food and nutrition, and management of the global commons. Prerequisite: APO 51 or permission.

SPO 164. **International Political Economy** (4) An examination of the major analytical and substantive issues in the field of international political economy, exploring the political and economic problems generated by growing interdependence among advanced industrial states and the conflicts between industrialized and developing countries over the structure and functioning of the postwar international economic order. Prerequisite: AEC 55 or permission.

SPO 166. **International Conflict and Conflict Management** (4) A study of the sources and nature of conflict and methods of conflict management in the international arena. The course will be directed especially to identifying and understanding the kinds and functions of non-violent conflict management now in use, including international law, international regimes, negotiation, and arbitration. Prerequisite: APO 51 or permission.

SPO 168. **Comparative Foreign Policy** (4) A comparative study of the formulation and execution of foreign policy in a variety of political systems. Prior completion of a basic course in political science is recommended.

SPO 170. **American Foreign Policy** (4) An examination of the major developments in American foreign policy and various analytical approaches to their study. Among the issues considered: isolationism, manifest destiny, the Cold War and containment, Vietnam and Central America, detente and arms control, foreign economic policy, and human rights. Prerequisite: APO 11 and 41.

SRS 74. **Autobiography and Religion** (4) A reading course in autobiographies written by religious searchers in both the Western and Eastern traditions. An attempt to assess the religious meaning in the life history of spiritual seekers from ancient times to the present, from India to England, from Crete to Harlem, U.S.A.

SRS 134. **World Religions** (4) Some attention will be given to historical development and to major personalities, but attention will center on fundamental religious questions as developed in major religions of the world. Not open to freshmen.

SIS 191. **Independent Study** (2-4) Permission of the instructor required.

Affiliated Faculty

Martin C. Needler, 1990, Dean, A.B., Harvard, 1954; Ph.D., 1960.

Steven C. Anderson, 1970, Professor of Biological Sciences, B.A., University of California, Riverside, 1957; M.A., San Francisco State College, 1961; Ph.D., Stanford University, 1966.

James W. Derleth, 1990, Assistant Professor of Political Science, B.S., University of Wisconsin - Stevens Point; M.A., American University, 1984; M.A., University of Maryland, 1988; Ph.D., 1990.

James A. Goodrich, 1976, Professor of Business and Public Administration, B.A., Occidental College, 1968; M.A., University of Kansas, 1970; Ph.D., University of California, Los Angeles, 1978.

Michael T. Hatch, 1985, Associate Professor of Political Science, B.A., Utah State University, 1970; M.A., The Johns Hopkins University, 1973; Ph.D., University of California, Berkeley, 1983.

Gerald J. Hewitt, 1969, Professor of Political Science and Philosophy, B.A., University of Notre Dame, 1963; M.A., University of Chicago, 1966; Ph.D., 1973.

Leonard A. Humphreys, 1970, Professor of History, B.S., United States Military Academy, 1945; M.A., Stanford University, 1960; Ph.D., 1975.

Longina Jakubowska, 1987, Assistant Professor of Anthropology, M.A., University of Warsaw, 1976; Ph.D., State University of New York at Stony Brook, 1985.

David Keefe, 1978, Associate Professor of Economics, B.S., Cornell University, 1965; Ph.D., University of California, Berkeley, 1980.

Brian Klunk, 1987, Assistant Dean, Assistant Professor of Political Science, B.A., Pennsylvania State University, 1977; M.A., University of Virginia, 1980; Ph.D., 1985.

Bruce W. LaBrack, 1975, Professor of Anthropology and Sociology, B.A., University of Arizona, 1967; M.A., 1969; M.Phil., Syracuse University, 1975; Ph.D., 1979.

Patricia Liddle, 1990, Director, Office of International Programs, B.A., Westminster College, 1959.

Deborah S. Rubin, 1989, Assistant Professor of Anthropology, B.A., Brown University, 1975; M.A., The Johns Hopkins University, 1985; Ph.D., 1985.

Francis M. Sharp, 1979, Professor of Modern Language and Literature, B.S., University of Missouri, 1964; M.A., University of California, Berkeley, 1969; Ph.D., 1974.

Cortlandt B. Smith, 1970, Professor of Political Science, B.A., University of California, Berkeley, 1968; M.A., 1969; Ph.D., 1975.

Barbara St. Urbain, 1985, Adjunct Lecturer in International Education, B.A., University of Iowa, 1979; M.A., 1981.

Lori Warner, 1987, Assistant Professor of Economics, B.A., University of Nevada at Reno, 1975; Ph.D., University of Utah, 1986.

Harvey R. Williams, 1977, Professor of Anthropology and Sociology, B.A., University of California, Berkeley, 1963; M.A., Vanderbilt University, 1970; Ph.D., 1977.

***"Each of our students
receives the finest education
available today in health
care problem-solving,
preparing to become the
scientist and pharmacist of
tomorrow. . ."***



**Donald L. Sorby, Dean
School of Pharmacy**

SCHOOL OF PHARMACY

A professional school of University of the Pacific dedicated to the training of pharmacists for their roles in modern health care delivery.

The School of Pharmacy was organized in 1955. It is a member of the American Association of Colleges of Pharmacy and is accredited by the American Council on Pharmaceutical Education.

The past decade has witnessed a major change in the practice of pharmacy towards new and expanded roles in health care delivery. This University has pioneered and put into practice new concepts in preparing the individuals who practice pharmacy. Our facilities are modern; the curriculum has been streamlined; our students are placed in learning situations throughout the state.

Mission

The mission of the School of Pharmacy is to provide an environment of academic excellence and social responsibility which will facilitate the propagation and acquisition of knowledge related to the profession of pharmacy and the disciplines in pharmacy education. The School of Pharmacy is committed to educating men and women to lead socially useful and productive lives in response to the needs of society and the profession. Programs of learning are offered to professional and graduate students, practitioners, educators, scientists, and others interested in life-long learning.

Goals

We wish to excel in programs appropriate to our mission, our geographic setting, our clientele and our University. We want to maintain a reputation among pharmacy educators and the pharmacy profession as being one of the finest pharmacy colleges in the United States. We wish this image to be based on a solid record of accomplishments in those areas which we have defined as being appropriate to our missions and goals. We desire to be known as an institution that does well in whatever it undertakes. We desire to be recognized as a leader in pharmacy education.

1. To promote a scholarly environment for students to acquire the knowledge, skills, experiences, motivation and professional attitudes necessary to provide comprehensive professional services and responsible drug therapy for patients, now and in the future.
2. To attract an academically well prepared student body capable of completing the pharmacy curriculum and maintaining ethical and professional standards.
3. To nurture the personal and social development of individuals and their sense of moral

and ethical responsibilities to the changing needs of society and the pharmacy profession.

4. To maintain an outstanding and creative faculty dedicated to providing full educational experiences for students in an environment in which faculty pursue scholarly activities and professional growth.
5. To provide a scholarly environment to support research in the basic and applied pharmaceutical sciences, to advance pharmaceutical knowledge, and to encourage fundamental discovery and the attainment of advanced degrees.
6. To maintain and develop further high quality educational programs or formats which will enable the School of Pharmacy to: (a) provide continuing education which will enable practitioners to meet current licensure requirements; (b) provide traditional and/or non-traditional educational avenues for advanced professional and academic degree studies; (c) improve public perception of pharmacy practice; and (d) increase public awareness of drugs.
7. To encourage interdisciplinary programs and activities with other departments, schools, institutions and organizations.
8. To explore concerns common to pharmacy and allied professions for the purpose of promoting more efficient distribution and utilization of health related services.

The Study of Pharmacy

The School of Pharmacy offers the Doctor of Pharmacy degree and requires the equivalent of two years in pre-pharmacy. Further details of both degrees are provided elsewhere.

Satisfactory completion of the Doctor of Pharmacy degree enables a student to sit for the California State Board of Pharmacy examination and eventually practice pharmacy. The basic residence requirement for completion of the Doctor of Pharmacy degrees is eight semesters which is completed in two and two-thirds years. This has been made possible by utilizing the summer months for instruction, thus providing the same number of instructional days as in four academic years.

Accrediting and licensure bodies require monitored pharmacy practice experience in the professional curriculum. The Doctor of Pharmacy degree program at the University of the Pacific has a two semester experiential component. This component is described in detail in other literature available from the Admissions Office.

In addition to the Doctor of Pharmacy professional degree already noted, the graduate

degrees Master of Science and Doctor of Philosophy are available through the Graduate School in conjunction with the School of Pharmacy.

High School Recommendations

The requirements for admission and graduation requirements, as stated here, have been effective since September, 1986.

A college preparatory program is required. The following courses are recommended for preparing the student for the study of pharmacy:

English	Four years
Mathematics	Four years of college preparatory math, including analytic geometry, precalculus and calculus, if available
Physics with laboratory	One year
Biology with laboratory	One year
Chemistry with laboratory	One year

Pre-Pharmacy College Requirements

Doctor of Pharmacy Degree Program

Mathematics: One semester of college level calculus or its equivalent.

Physics: One year of high school physics (with laboratory) or one semester/quarter of college physics (with laboratory).

Chemistry: (1) General chemistry with lab, eight semester units minimum (regular sequence for chemistry majors) and (2) organic chemistry with lab, eight semester units minimum. Course work should be designed for chemistry or biology majors.

Biological Sciences: General biology, eight semester units with laboratory both semesters; course work may include two semesters zoology, one semester each botany and zoology, or two semesters of general biology designed for biology majors.

Liberal Arts

English Composition: Three semester/four quarter units, minimum.

Public Speaking: Three semester/four quarter units, minimum.

Economics: Three semester/four quarter units, minimum.

General Education: At least one three semester/four quarter unit course from each non-science category of the University General Education Program.

The liberal arts requirements must total a minimum of 28 semester/42 quarter units. (No more than two semester units of physical education may be used to fulfill the electives requirements.)

Sixty-four transferable semester units are required.

Students with a U.S. bachelor's degree are exempt from the general education portion of the liberal arts requirement.

These prepharmacy requirements simply make the candidate eligible for selection. Final selection is based on recommendations, personal factors and strength of academic preparation.

Applicants are urged to write to the UOP Admissions Office regarding questions on the above requirements.

Admission to the Professional School

Applicants should consult the section on admissions dealing with pharmacy under the admission requirements section of this catalog. A grade point average of at least 2.5 is usually necessary to qualify the candidate for admission. The combined math-science grade point average carries especially significant weight in the admission decision.

While the School of Pharmacy reserves the right to ask prospective students to appear for an interview prior to being admitted, admission to the professional school is obtained only through the Office of Admissions. Students with English language skill deficiencies may be required to enroll in special course work prior to admission and continuing throughout the first six semesters of the professional curriculum.

Graduation Requirements

Graduation requirements for each entering class are given to each student at the beginning of the first professional year. Accreditation requirements and curriculum changes may necessitate changes in these requirements.

The School of Pharmacy reserves the right to modify or change the curriculum at any time without prior notice.

Minimum Unit Requirements: Bachelor of Science (entry-level admission no longer available) — 164 semester units (pre-pharmacy plus pharmacy); Doctor of Pharmacy — 198 semester units (pre-pharmacy plus pharmacy).

Residency Requirements: Eight semesters of School of Pharmacy residency are required for both the Bachelor of Science and the Doctor of Pharmacy programs. (A semester in residence consists of registering for a minimum of 12 semester units each semester.)

Grade Point Average Requirement: A grade point average of 2.00 (on a 4-point scale) is required for graduation in: (1) School of Pharmacy "major" courses, (all required H

courses); (2) School of Pharmacy residency coursework, (all courses taken while in residence in the professional program); and (3) All University of the Pacific coursework.

Career-related Electives: All candidates for the Doctor of Pharmacy Degree are required to complete a minimum of eight semester units of career related electives while in residence. These may be School of Pharmacy electives or selected University electives. Electives taken during pre-Pharmacy or while not in residence may not be used to fulfill this requirement. Electives taken to fulfill the general education or liberal arts requirement may not be used to fulfill this requirement.

Liberal Arts Requirement: Candidates for the Bachelor of Science in Pharmacy degree (entry-level admission no longer available) are required to complete a minimum of 28 semester units of liberal arts courses. This includes acceptable liberal arts courses completed in pre-pharmacy, plus any such courses taken while in residence in the School of Pharmacy. Students entering the School of Pharmacy without this requirement are advised to complete it by proper selection of electives, particularly during the Fall semester each year.

General Education Requirements

Students must pass the basic skills competency in quantitative skills and writing and satisfy any general education and liberal arts course requirement not completed in pre-pharmacy. Students entering the School of Pharmacy with a U.S. baccalaureate degree are not required to meet the University General Education requirements. These requirements are enumerated elsewhere in this catalog.

Graduate Degree Programs

Candidates for graduate degrees must meet the requirements established by the Graduate School. Graduate programs are available in the following areas of specialization: Medicinal and Biological Chemistry; Pharmaceutics; Clinical Pharmacy; Physiology and Pharmacology; and Toxicology.

The Master of Science degree may be conferred upon graduates holding a baccalaureate degree from this University (or other recognized institutions) upon satisfactory completion of at least one year of graduate study, including a thesis based upon original research.

Programs leading to the Doctor of Philosophy degree are available to students who meet the general requirements of the Graduate School as well as the specific requirements as listed in the graduate catalog. Interested individuals may obtain further information by writing directly to the Dean of the Graduate School or to the Dean of the School of Pharmacy.

Clinical Experience

All pharmacy students are required to have experience in direct patient care as part of their total program. The Doctor of Pharmacy student registers for two semesters of clinical experience rotations in acute care, long term care, and ambulatory care facilities affiliated with the University. The student is required to enroll in six-week rotations including Community Practice Rotation, Institutional Pharmacy Practice Rotation, Ambulatory Care Rotation, and Adult Internal Medicine Rotation. Additionally, each student will complete two six-week elective rotations.

Clinical Experience Placement Policy

Upon admission, each student is required to sign a form giving the School of Pharmacy the right to place the student in the most appropriate clinical experience site. Selection of the sites for inpatient and outpatient experiences are made at the sole discretion of the University of the Pacific School of Pharmacy.

Pharmacy Licensure

For California pharmacy licensure requirements write California State Board of Pharmacy, 1020 "N" Street, Suite 448, Sacramento, CA 95814.

Campus Pharmacy

A non-profit campus pharmacy is operated in conjunction with the School of Pharmacy under the supervision of registered pharmacists. Prescriptions and other pharmaceutical services are available for students and faculty members. The pharmacy also dispenses drug information and houses the Pacific Drug Information Service.

Course Offerings

Department of Medicinal Chemistry and Pharmaceutics

Donald Floriddia, Chairman
Professors: Chaubal, Floriddia, Fries, Matuszak, Sayre, Sorby, Vasavada
Assistant Professor: Oberlender
Professors Emeriti: Barker, Kihara, Roscoe
Adjunct Professors: Bearce, Maddix, Maki

HMP 100. History of Pharmacy (1-2) A survey of the historical background of pharmacy and medicine from ancient to modern times. Correlations of great medical discoveries and their influence on world history. Emphasis also on California pharmacy history.

HMP 110. Pharmaceutical Dosage Forms (3) A study of the major types of pharmaceutical dosage forms. Basic facts of formulation, manufacture, packaging, labeling and dispensing are presented. Three lecture periods per week.

HMP 110L. Pharmaceutical Dosage Forms Laboratory (1) Laboratory component of HMP

110. Instruction in extemporaneous compounding of topical and oral dosage forms. Practice in dispensing of and counseling for commercially manufactured dosage forms. One laboratory period per week.

HMP 112. Pharmaceutical Calculations (1) A presentation of specific mathematical concepts as they apply to the practice of pharmacy. Emphasis is placed on the study of weights and measures as they apply to calculating doses as well as specific amounts of active ingredients.

HMP 114. Biophysical Properties of Drugs (3) An introductory course designed to teach the beginning pharmacy student the basic principles and terminology which are required to understand the pharmaceutical sciences. Topics included in the class are biochemical energetics, physico-chemical properties of drugs, kinetics and drug-receptor interactions. Prerequisites: two semesters of organic chemistry.

HMP 115. Problem Solving in Biophysical Properties of Drugs (1) This course is intended to be a supplement to HMP 114-Biophysical Properties of Drugs. The objective of the course is to provide extra instruction time to solving problems related to physicochemical principles of drugs as they relate to drug action.

HMP 120. Introduction to Parenteral Products (2) A study of parenteral products, their components and use. Two lecture periods per week. Prerequisite: HMP 110.

HMP 120L. Parenteral Products Laboratory (1) Laboratory component of HMP 120. The practice of aseptic technique, manipulation of needles and syringes, and the compounding of some parenteral products. Additional practice in extemporaneous compounding of oral and topical products and the dispensing of, and patient counseling for commercially prepared dosage forms. One laboratory period per week.

HMP 123. Biochemistry (3) A study of the molecular basis of cellular function and control mechanisms; the relationship of chemical structure to biological function; free energy changes in biochemical processes, sources of energy, energy storage and release; metabolic utilization of foodstuffs and interconversion of metabolites; biosyntheses; mechanisms of replication and the genetic code; interactions of other materials with living systems. Three lectures per week. Prerequisite: two semesters organic chemistry; microbiology or zoology.

HMP 123L. Biochemistry Laboratory (1) A laboratory component of HMP 123. This course includes elementary laboratory procedures for quantitative measurement of biochemical reactions. One laboratory period per week. Prerequisite: concurrent enrollment in HMP 123.

HPC 130. Chemical Identification of Drug Products (2) Methodology for separation of individual drugs from licit and illicit preparations. Qualitative identification made by a combination of chemical spot tests, chromatographic and spectroscopic techniques. Knowledge gained will be useful in community teaching and professional consultation.

HMP 131. Biopharmaceutics (3) A study of the factors influencing the rate and extent of

absorption of a drug, its delivery at the site of action, and consequent biologic effect. An introduction to pharmacokinetic principles as related to drug product selection is presented concurrently. Two lecture periods and one laboratory period per week. Prerequisites: HMP 110, 110L, HCA 122.

HMP 132. Galenical Pharmacy (2-3) A study of the formulation techniques involved in the preparation of galenicals that are currently official in the compendia, as well as those which are not official but are deemed significant to pharmaceutical practice. Emphasis will be placed on the art of formulation; however, underlying scientific concepts will also be discussed. One lecture and one or two laboratory periods per week depending on the number of units selected by the student. Prerequisite: HMP 111.

HMP 133. Medicinal Plants (2) A study of selected plants and plant products used in medicine, including those used in modern, folkloric, and ethnic or alternative systems of medicine around the world.

HMP 134. Medicinal Chemistry I (3) A systematic study of the various classes of drugs with emphasis on the chemical reactivities and physical properties of drugs as they relate to stability, prescription incompatibilities and dosage formulation; drug absorption, distribution, biotransformation, excretion and toxicity characteristics; drug interactions and mechanisms of pharmacologic action as a basis for therapeutics. Prerequisites: HMP 114; HMP 123, HMP 123L, concurrent enrollment in HPH 135.

HMP 141. Clinical Pharmacokinetics (4) A study of pharmacokinetic principles in the quantification of drug distribution in the body and their use in individualizing and optimizing drug dosage regimens. Two lectures (75 minutes each) and one discussion period per week. Prerequisite: HMP 131.

HMP 144. Medicinal Chemistry II (3) A systematic study of the various classes of drugs with emphasis on the chemical reactivities and physical properties of drugs as they relate to stability, prescription incompatibilities and dosage formulation; drug absorption, distribution, biotransformation, excretion and toxicity characteristics; drug interactions and mechanisms of pharmacologic action as a basis for therapeutics. Prerequisites HMP 134, concurrent enrollment in HPH 145.

HMP 149. Special Topics (1-4).

HMP 154. Chemotherapeutic Agents (3) A study of the properties of drugs used in the treatment of bacterial, fungal and viral infections. Prerequisite: HPH 146.

HMP 161. Nutrition (3) A study of nutrition as it relates to the maintenance of a positive state of health. The course emphasizes the basic concepts of nutrition, the role of vitamins and minerals and the relationship of nutrition to diseased states. Three lecture periods per week. Prerequisites: HMP 123, HMP 123L.

HMP 164. Advances in Applied Pharmacokinetics (2) A systematic approach to a

rational application of basic pharmacokinetics to patient specific clinical practice. Prerequisite: HMP 141.

HMP 184. Cosmetics: Formulation and Function (2) An introduction to the formulation and function of cosmetic products intended for hair, nails, skin, lips and eyes. Includes consultant tips for effectiveness and consumer safety. Two lecture periods per week. Prerequisite: HMP 111.

HMP 185. Cosmetics: Formulation and Function Laboratory (1) A hands-on introduction to the formulation and function of cosmetic products for the hair, nails, skin, lips, and eyes. Prerequisite: HMP 184.

HMP 187. Drug Biotransformation (3) A study of the molecular mechanisms and the influences of environment, genetics, sex and other factors on various enzyme systems, especially those located in the liver, which may alter drug molecules to less or more active metabolites. The relationship of drug biotransformation to pharmacokinetics, drug interactions and toxicity will be emphasized. Prerequisites: HMP 123, HMP 123L, HMP 134 or 144.

HMP 189, 190. Industrial Pharmacy (3, 3) A study of unit operations used in pharmaceutical production of solid, semisolid and liquid dosage forms including aerosols. Two lectures and one laboratory period per week. Prerequisite: HMP 131.

HMP 193. Undergraduate Independent Study (1-5) Independent study involving library and/or laboratory.

HMP 203. Parenteral Pharmaceuticals (3) Consideration of theoretical and practical aspects of the preparation of sterile parental products. Two class periods and one laboratory period per week.

HMP 221. Chemobiodynamics (3) Molecular theories of drug action, kinetics of drug-receptor interactions, and quantitative structure-activity relationships. Prerequisite: HMP 144. (Spring).

HMP 231. Advanced Medicinal Chemistry: Drug Design (3) A study of modern methods in design of chemotherapeutic agents including: enzyme inhibitors and metabolic blockers; rationale of selective toxicity; mechanisms of selective toxicity. Prerequisites: HMP 134, HMP 144, and graduate standing.

HMP 234, 235. Biosynthesis (3, 3) Biosynthesis of medicinally active principles of biological origin. Prerequisites: Biochemistry, graduate standing and permission (given alternate years).

HMP 237. Gas and High-Performance Liquid Chromatography (3) Principles, practice and application in biopharmaceutic research. Recent advances in technology, GC data reduction, peak quantitation and identification will be discussed and observed. Two lectures and one laboratory period/per week. (Offered in odd-numbered years, Spring).

HMP 238. Introduction to Radiotracer Methods and Radiation Protection (4) A study of radionuclides and radioactivity: their sources, properties and units; principles and

instrumentation for detection and measurement of radiations; biological effects of radiations; and principles of radiation protection and safety: units, computations, records, rules and regulations. The course is primarily directed to students interested in Nuclear Pharmacy.

HMP 255 (ACH 255). Biochemical Regulation (3) Life processes require the coordination and integration of an enormous number of chemical reactions. Emphasis will be on the fundamental mechanisms involved in regulation of enzyme catalyzed reactions as they function in rate-limiting steps in metabolic processes.

HMP 257. Biochemistry of Disease (3) (S) A study of diseases with specific biochemical lesions. Three lectures per week. Prerequisites: HMP 123, HMP 123L, HPH 145, HCA 142, HPH 156 or permission. (Spring).

HMP 264. Pharmacokinetic Study Design and Analysis (2) A study of research techniques in pharmacokinetics. Emphasis is placed on project conceptualization, data collection, data analysis, and interpretation of results. Various computational software employed including SAS, SPSS, Minitab, and NONMEM. Prerequisites: HMP 131, HMP 141, AMA 37 or equivalent, graduate standing or permission. (Spring).

HMP 287. Drug Biotransformation (3) A comprehensive study of the molecular mechanisms involved and the influences of environment, genetics, sex and other factors on various enzyme systems, especially those located in the liver, which may alter drug molecules to less or more active metabolites. The relationship of drug biotransformation to pharmacokinetics, drug interactions and toxicity will be emphasized. Prerequisites: HMP 124 and HPH 135.

HMP 289, 290. Manufacturing Pharmacy (3, 3) An in-depth study of basic and applied aspects of pharmaceutical manufacturing operations. Two lectures and one laboratory period per week. Prerequisite: graduate status or permission.

HMP 293. Graduate Independent Study (3, 3) Laboratory problems and research in selected topics. Permission of instructor.

HMP 295. Graduate Seminar (1) Review of current topics in pharmacy. All Master of Science degree candidates are required to attend and to participate.

HMP 297. Graduate Research (1-5) May be repeated as progress warrants. Prerequisites: Graduate standing.

HMP 299. Thesis (4) For M.S. degree candidates only.

HMP 391. Independent Study (1-5) May be repeated as progress warrants.

HMP 395. Seminar (1) All doctoral (Ph.D.) candidates are required to attend and participate in the seminars. No more than six credits may be used toward doctoral degree requirements.

HMP 397. Advanced Research (2-12) Limited to doctoral (Ph.D.) candidates. May be repeated as progress warrants.

HMP 399. Dissertation (2-12) Open only to doctoral (Ph.D.) candidates.

Department of Pharmacy Practice

Patrick Catania, Chairman

Professors: Abood, P. Catania, Christopherson, King, Lum, Sarnoff, Supernaw

Associate Professors: Harralson, Kehoe, Mergener, P. Williams

Assistant Professors: Carr-Lopez, Fredriks,

Gundersen, Ito, McWaters

Assistant Clinical Professor: Wagner

Instructor: Saroyan

Lecturer: Balch

Professors Emeriti: Brown, Polinsky, Rowland

Adjunct Professors: Anderson, Apps, Baker, Bearce,

Bergener, P. Boehm, Boro, Brans, Brinkman,

Britt, Brodbeck, Brown, Browning, Caiazzo,

Carlson, Carr-Lopez, Carrejo, G. Castillo, S.

Castillo, H. Catania, Caudill, Cavallavo, Ceek-

son, Chan, Chretien, G. Christa, W. Christa,

Chun, Coleman, Conroy, B. Costo, M. Costo,

Cox, Coyne, Cram, Cranston, Cromer, Dahl,

Deftereos, DeMeo, Dete, Dick, Dockum, Doyle,

Dugoni, Ekins, Ellenor, D. Ellis, L. Ellis,

Elzarian, Erb, Evans, Ferrell, Fischer, Fong,

Foster, Freidman, Gee, Geierman, Geis, George-

Pardini, Gibson, Giles, Goo, Good, Grasham,

Graul, Gray, Green, Giusti, Hallbauer, Hamada,

Hatai, Heins, Heller, Higa, Ihlenfeld, Imoto,

Inakuku, Inouye, Ito, Joe, Johns, Kamigaka,

Kaneshiro, Keil, Keller, King, Kootsikas, Korman,

Korr, Krainert, Kwentus, Lallo, A. Lee, K. B. Lee,

K. L. Lee, L. Lee, R. Lee, S. Lee, Lewis, Light,

Liter, Lofholm, Lok, Lopez, G. Louie, S. Louie,

Low, Lundstad, Ma, MacKeller, MacMillan, Mad-

dix, Maki, Martin, Marty, McComb, Miyashiro,

Morreale, Muramoto, Murphy, Nagata, Nakasoto,

Nickols, Oesterman, Ogawa, Pappo, Peterson,

Puglisi, Reifman, Renneker, Rho, Rizkallah,

Robles, Roblez, Rondoni, Rosenquist, Roughley,

Rowe, Russell, Ryono, Sasaki, Sato, Schaftel,

Schalker, Schanzenbach, J. Schneider, R.

Schneider, Sheets, Shimasaki, Shirai, Snediker, F.

Stefani, Steger, Stellato, Stotler, Sumiye, Sze,

Takagi, Takemoto, Taketa, Taniyama, Thalken,

Thomas, Thompson, Tsang, Tutt, Umezawa, L.

Wagner, Warren, Weber, Weiner, Weiser, White,

Whitmore, Whittle, Williams, Witmore, Woelfel,

C. Wong, K. Wong, F. Woo, J. Woo, M. Woo,

Wright, Yauman, F. Yee, W. Yee, Youmans, A.

Young, L. Young, Zelman

HCA 101. Pharmacy Orientation (1) A general survey of the scope of pharmacy including but not limited to educational and licensing requirements, career and occupational opportunities, pharmacy organizations (campus, local, state and national), basic pharmacy terminology, and University and School of Pharmacy regulations and pre-pharmacy requirements.

HCA 113. Introduction to Pharmacy Practice (1) An overview of the past, present and future of pharmacy including the various career options within pharmacy. Prerequisite: students must be enrolled in the School of Pharmacy.

HCA 115. Medical Microbiology (4) Survey of micro-organisms implicated in human disease with emphasis on characteristics and properties responsible for pathogenesis. Three lectures and two laboratory periods per week.

HCA 121. Basic Cardiac Life Support (1) Emergency basic life support using cardiopulmonary resuscitation techniques. Prerequisites:

Open to pharmacy students (third semester standing or higher) with permission of instructor.

HCA 122. Biostatistics and Literature Evaluation (3) The use of statistics and methods and resources used in searching and evaluating the clinical literature.

HCA 123. Health Care Delivery Systems (2) An investigation into the delivery of health care services as they affect the practice of pharmacy in the United States. Prerequisite: economics.

HCA 124. Community and Institutional Pharmacy (2) The practice of pharmacy in community and institutional settings with emphasis on the administrative responsibilities of pharmacists.

HCA 126. Home Health Care (2) The practice of pharmacy in home health care settings. The clinical, legal and economic aspects of pharmacy services in various domiciliary settings. Prerequisite: HCA 162 or concurrent enrollment.

HCA 127. Hospital Pharmacy (2) Pharmaceutical services within the hospital environment with emphasis on programs and responsibilities that are unique to hospital pharmacy. Prerequisite: HCA 124.

HCA 128. Gerontology and Geriatric Therapy (2) An exploration of the social and psychologic aspects of aging as well as the pharmacokinetic and pharmacodynamic changes related to elderly patients. In addition, this course examines common diseases of the elderly and how aging affects drug therapy. Prerequisite: sixth semester standing only.

HCA 134. Herbs and the Pharmacist (2) A study of herbs that are currently popular and used for the treatment of conditions (health) and disease states. Methods of preparation, active ingredients, effectiveness, toxicity, and possible misuse/abuse. Common names and botanical and plant parts are presented. Two lecture periods per week.

HCA 135. Drug Information Service (2) Four hours per week rotation experience in the Pacific Drug Information Center. Practical experience fielding questions and formulating appropriate responses. Prerequisite: HCA 122.

HCA 138. Patient History (1) A systematic approach to the process of taking a patient history, including the patient interview.

HCA 139. Microcomputer Programming (3) The essentials of microcomputer programming for the pharmaceutical sciences and for contemporary pharmacy practice.

HCA 142. Clinical Laboratory and Physical Assessment Techniques (3) Basic clinical laboratory medicine, physical assessment techniques and their application to the diagnostic process and utility in the monitoring of the patient to drug therapy. Prerequisites: HMP 124, HPH 127.

HCA 144. Introduction to the Skilled Nursing Facility (2) A clinical pharmacy component in a skilled nursing facility; a systematic approach to monitoring drug therapy the long-term care patient. Prerequisites: HPH 145, 146.

HCA 148. Introductory Biostatistics (2) An

introductory course in the terminology and use of biostatistics.

HCA 149. **Special Topics** (1-4).

HCA 150. **Computer Applications of Statistical Analysis** (2) A course utilizing the computerized statistical package, MINITAB, for data analysis. Prerequisites: HCA 122 or previous statistics course including ANOVA or consent of instructor.

HCA 152. **OTC Therapeutics and Health Accessories** (3) Non-prescription drug therapy and use of health devices and accessories. Prerequisites: HMP 144, HPH 145, 146, concurrent enrollment in HPH 156.

HCA 153. **Pharmacy Management** (4) An analysis of the financial, personnel and product management systems applicable to the various environments in which pharmacy is practiced.

HCA 156. **Introduction to Critical Care Pharmacy** (2) An introduction to the various critical care environments emphasizing problems requiring intensive care, special monitoring needs, and how the critical care pharmacist practices in these settings. Prerequisites: HCA 157, HMP 154.

HCA 157. **Therapeutics I** (3) Consideration and precautions in the selection, dosing and monitoring of drugs used to treat commonly encountered medical problems. Prerequisites: HCA 142, HMP 141, HPH 145, 146.

HCA 158. **Therapeutics Seminar** (1) Seminar on topics covered in Therapeutics I and II. Prerequisites: Concurrent enrollment in HCA 157 and HCA 167 (second semesters).

HCA 162. **Contemporary Pharmacy Practice** (3) A survey of the sociologic and psychologic aspects of patient care, contemporary practice issues and the interaction of patients and health care providers with pharmacists, including effective communication skills.

HCA 163. **Pharmacy Law and Ethics** (2) An examination of the laws and regulations pertaining to the control of drugs and devices and the legal framework and ethical considerations within which the practice of pharmacy exists.

HCA 164. **Basic Electrocardiography** (2) Basics of electrocardiogram reading and interpretation; to include changes induced by drugs. Prerequisite: HPH 145.

HCA 165. **Business Law for the Pharmacist** (2) An introduction to the business laws affecting the pharmacist.

HCA 167. **Therapeutics II** (3) A continuation of the topics begun in Therapeutics I. Prerequisites: HCA 157, HMP 141, HPH 145, 156.

HCA 168. **Pediatric Pharmacokinetics** (2) This course is designed to provide an overview of the developmental patterns of drug absorption, distribution, metabolism and excretion in pediatric patients. The development of pediatric therapeutic drug regimens for selected drug groups will also be covered. Prerequisites: HMP 141, permission of the instructor.

HCA 169. **Therapeutics III** (2) Therapeutics for infectious diseases. Two lecture periods per week. Prerequisites: HPH 135, HPH 145, HMP 154.

HCA 171. **Internal Medicine Rotation** (6).

HCA 172. **Ambulatory Care Rotation** (6).
HCA 173. **Hospital Pharmacy Practice Rotation** (6).

HCA 174. **Community Pharmacy Practice Rotation** (6).

HCA 176A. **Anticoagulation Clinic Rotation** (6).

HCA 176B. **Antimicrobial Drug Monitoring Rotation** (6).

HCA 176C. **Critical Care Rotation** (6).

HCA 176D. **Drug Information Rotation** (6).

HCA 176E. **Cardiology Rotation** (6).

HCA 176F. **Clinical Pharmacokinetics Rotation** (6).

HCA 176G. **Gynecology (OB/GYN) Rotation** (6).

HCA 176H. **Home Health Care Rotation** (6).

HCA 176I. **Industrial Pharmacy Rotation** (6).

HCA 176J. **Geriatrics/Long Term Care Facility Rotation** (6).

HCA 176K. **Psychopharmacy Rotation** (6).

HCA 176L. **Institutional Pharmacy Administration Rotation** (6).

HCA 176M. **Community Pharmacy Management Rotation** (6).

HCA 176N. **Neurology Rotation** (6).

HCA 176O. **Oncology Rotation** (6).

HCA 176P. **Pediatrics Rotation** (6).

HCA 176Q. **Quality Assurance Rotation** (6).

HCA 176R. **Non-Prescription Therapy and Management Rotation** (6).

HCA 176S. **Surgery Rotation** (6).

HCA 176T. **Total Parenteral Nutrition Rotation** (6).

HCA 176U. **Drug Utilization Review Rotation** (6).

HCA 176V. **Association Management Rotation** (6).

HCA 176X. **Poison Control Rotation** (6).

HCA 175. **Elective Rotation** (3).

HCA 177. **Elective Rotation** (3).

HCA 180. **Clinical Nuclear Pharmacy Clerkship** (15) Resident training at an affiliated hospital to develop professional competency in clinical nuclear pharmacy. Prerequisite: HCA 239 and permission.

HCA 181. **Advanced Elective Rotation** (3).

HCA 182. **Advanced Elective Rotation** (3).

HCA 184. **Advanced Elective Rotation** (6).

HCA 185. **Advanced Elective Rotation** (6).

HCA 191. **Pharmacy Practicum** (1-3) Procedures related to pharmacy practice. Conference and practicum. May be re-elected for a maximum of three units. Prerequisite: permission.

HCA 193. **Undergraduate Independent Study** (1-5) Library, conference and clinical studies in clinical pharmacy. Permission of instructor.

HCA 195, 196. **Seminar** (1-2, 1-2) Analyses of current topics and research in health care administration. Admission by consent only.

HCA 210. **Advances in Drug Therapy** (3) (S) Discussion of new and experimental therapeutic applications of drugs, posology and specialized techniques of administration. Three lecture periods per week. Prerequisite: HCA 142 and permission.

HCA 215. **Advanced Microbiology** (3) Introduction to virology, microbial physiology, bio-

chemistry and genetics. Three lectures per week. Prerequisites: microbiology, biochemistry, senior or graduate standing. Offered alternate years.

HCA 220. **Immunology** (3) The nature of antigens and antibodies and their interactions. Theories of antibody formation, mechanisms of natural and acquired immunity, auto-immune diseases, transplantation immunity, allergies. Three lectures per week. Prerequisites: microbiology, biochemistry, senior or graduate standing. Offered alternate years. Alternates with HCA 215.

HCA 239. **Applied Radiopharmaceuticals** (3) (S) A study of clinical nuclear pharmacy, to include: role of the nuclear pharmacist, biological effects of radiation, therapeutic uses of radiopharmaceuticals; radiation control regulations; organ imaging procedures in diagnostic nuclear medicine. Safe handling, sterile preparation, quality control, record keeping, storage and exposure dose calculations for radiopharmaceuticals. Two lectures and one lab period per week.

HCA 282. **Long-Term Care Practice** (3) A clinical pharmacy component in a long-term care facility with special emphasis on opportunities and research needs. This course is intended for the student who has not taken comparable course content. Prerequisites: HCA 142, 157, HMP 141 or equivalent; graduate standing and permission.

HCA 283. **Ambulatory Care Practice** (3) Application of clinical pharmacy to ambulatory care settings with special emphasis upon opportunities and research needs. Prerequisites: HCA 142, 157, HMP 141 or equivalent. graduate standing and permission.

HCA 285, 286. **Topics in Acute Care Practice** (3, 3) Application and investigation of clinical pharmacy in an acute care setting with emphasis on medical management of common diseases and national drug therapy. Prerequisites: HCA 142, 157, HMP 141.

HCA 293. **Graduate Independent Study** (1-5) Laboratory problems and library research in selected topics. Permission of instructor.

HCA 295. **Graduate Seminar** (1) (S) Review of current topics in pharmacy. All Master of Science degree candidates are required to attend and participate.

HCA 297. **Graduate Research** (1-5) May be repeated as progress warrants. Prerequisites: Graduate standing and permission.

HCA 299. **Thesis** (4) For M.S. degree candidates only.

HCA 391. **Independent Study** (1-5) May be repeated as progress warrants.

HCA 395. **Seminar** (1) All doctoral (Ph.D.) candidates are required to attend and participate in the seminars. No more than six credits may be used toward doctoral degree requirements.

HCA 397. **Advanced Research** (2-12) Limited to doctoral (Ph.D.) candidates. May be repeated as progress warrants.

HCA 399. **Dissertation** (2-12) Open only to doctoral (Ph.D.) candidates.

Department of Physiology and Pharmacology

James W. Blankenship, Chairman
 Professors: Blankenship, Knapp, Runion, Shirachi
 Visiting Professor: Stanton
 Assistant Professor: Meerdink
 Lecturer: Ferguson
 Emeritus Professor: Riedesel
 Adjunct Professors: Elzarian, Jones, Omaye

HPH 108. Clinical Depression (1) An introduction to the pathophysiology of depression with an emphasis on highlighting behavior that may mask depression in children, young adults and the elderly.

HPH 109. Physiologic Changes in Aging (1) A selective examination of physiologic changes in organ systems undergoing normal aging, with a major emphasis placed on imparting an empathic understanding of the geriatric patient. Prerequisite: HPH 137.

HPH 110. Care and Welfare of Laboratory Animals (1) A comprehensive review of the current legislative and scientific guidelines involving the proper care, use, handling and welfare of laboratory animals used in biomedical teaching and research. One two-hour lecture and one laboratory session per week for four weeks. Prerequisite: first year professional school or graduate standing.

HPH 111. Veterinary Pharmacology (2) The application of pharmacology to the problems of animal health. One two-hour lecture per week. Prerequisites: HPH 135 and 145.

HPH 112. Applied Pathology (2) Lecture, discussion and demonstrations of pathological conditions in animals with comparison to human pathology. A study of tissue correlates in organic disease. Two one-hour periods per week. Prerequisites: HPH 137 and concurrent enrollment in HPH 146.

HPH 117. Human Physiology and Anatomy I (4) A study of the central, peripheral and autonomic nervous systems, including skeletal and smooth muscles, the electrophysiological properties of membranes and synaptic junctions, digestive physiology, and body fluid compartments. The underlying objective of the course is to provide a firm background for the pharmacology/toxicology course sequence and provide a physiological basis for therapeutic decision making. Prerequisite: first year professional school standing or permission.

HPH 122. Neurophysiology (3-4) A study of the central, peripheral and autonomic nervous systems, including skeletal, smooth and cardiac muscles, their electrophysiological properties and the mechanism of membrane potentials and synaptic physiology necessary for the understanding of integrated neural behavior in man. Four one-hour lectures per week. Open to all University students.

HPH 124. Common Pediatric Disease States and Treatment (1) An examination of the pathophysiology and treatment of the ten most frequent medical problems brought to the pediatrician in children of neonate to age eleven. Prerequisites: HPH 145, 156. This class is

limited to 30 students.

HPH 127. Human Physiology and Anatomy II (4) An in-depth study of the physiology of water and electrolyte balance and of the cardiovascular, respiratory, renal, digestive and thermoregulatory systems in the human. The anatomy of these same systems will also be studied in lecture and in laboratory. Two two-hour lectures and one laboratory session per week. Prerequisites: HPH 117 and HMP 123, HMP 123L (concurrently) or equivalent.

HPH 135. Pharmacology-Toxicology I (Nerve and Muscle) (4) A study of the therapeutic and toxic effects produced by drugs and other chemicals and the neural mechanisms involved. Four one-hour lectures per week. Prerequisite: HPH 117, 127 and concurrent enrollment in HPH 136.

HPH 136. Pharmacology and Toxicology Laboratory (1) The activities of prototype medicinals are illustrated using laboratory animals. One three-hour laboratory every other week for two semesters. Prerequisites: Concurrent enrollment in HPH 135, 145.

HPH 137. Human Endocrine Anatomy, Physiology and Pathophysiology (3) A study of the anatomy, physiology and pathophysiology of the hypothalamic, pituitary and peripheral endocrine glands as they relate to the biochemical and physiological effects of their respective secretions. Particular emphasis will be placed on the assessment of normal and abnormal endocrine function by evaluating pertinent clinical data. Prerequisites: HMP 123, HMP 123L, HPH 117, 127.

HPH 139. Small Animal Surgery (1) Demonstration of the fundamental principles of anesthesia, the sterile techniques used in routine or specialized surgery, and the role of pharmacology in pre- and post-operative care of the patient. Prerequisite: HPH 135. A minimum of ten clinical sessions per term; may be re-elected with permission for a maximum of three credits.

HPH 145. Pharmacology-Toxicology II (Organ Systems) (4) A study of the therapeutic and toxic effects produced by drugs and other chemicals and the alterations of homeostatic systems involved. Two two-hour lectures per week. Prerequisite: HPH 135, 137 and concurrent enrollment in HPH 136.

HPH 146. Disease States I (2) A study of basic disease mechanisms as well as the pathophysiology of the cardiovascular and renal organ systems. Prerequisite: HPH 137 or concurrent enrollment.

HPH 149. Special Topics (1-4).

HPH 150. Biology of Cancer (1) The biological, clinical and psycho-social aspects of cancer are examined through the perspectives of medical researchers, physicians and health educators. Prerequisite: HPH 146.

HPH 156. Disease States II (3) A study of the process of neoplasia and neoplastic cells, pathophysiology of the hepatobiliary, respiratory, GI, nervous, reproductive, immune and hematologic systems. Prerequisite: HPH 146.

HPH 158. Fundamentals of Toxicology (2) An introduction to the general principles of toxicology.

The toxic effects of various classes of nonmedical chemicals will be discussed with emphasis on the mechanisms of action, sites of action, signs and symptoms of toxicity, and the treatment of toxicity. Prerequisite: HPH 146.

HPH 180. Fundamentals of Neurologic Evaluation (2) The principles of noninvasive investigation of the central and peripheral nervous systems are presented along with a systematic approach to developing a concise history of the presenting patient. Parkinsonism, multiple sclerosis, stroke, disc involvements, tremor variants and other diseases will be discussed as examples to illustrate investigative techniques useful to the pharmacist. Prerequisite: HPH 135, 145.

HPH 193. Undergraduate Independent Study (1-5) Independent study involving library and laboratory work and the writing of a report. Prerequisite: permission.

HPH 201. Proseminar in Physiology and Pharmacology (2) A seminar course designed to introduce students to the research literature in physiology and pharmacology and to the historical development of certain basic concepts in these areas. One two-hour lecture per week. Prerequisite: graduate standing.

HPH 246. Molecular Pharmacology of Nucleic Acids (3) A study of the mechanisms by which drugs and other chemicals can affect gene expression and cell division through actions on DNA structure and nucleic acid and protein metabolism. Prerequisite: graduate standing or permission.

HPH 249. Special Topics (1-4).

HPH 250. Functional Neuroanatomy (4) An in-depth study of the anatomy of the human brain. Laboratory includes brain dissection. Prerequisite: HPH 117 or equivalent.

HPH 251. Cardiovascular Physiology and Pharmacology (3) An in-depth study of the physiology and pharmacology of the cardiovascular system especially as related to current research and laboratory techniques. Two one-hour lectures and one laboratory session per week. Prerequisite: graduate standing and permission.

HPH 258. Toxicology (2) A study of the adverse effects of various classes of non-medical chemicals with emphasis on the sites and mechanisms of action and on the critical evaluation of research literature. Prerequisite: graduate standing and permission.

HPH 261. Biochemical Pharmacology (4) A study of biochemical methodology as related to the solution of pharmacological problems at the subcellular level. One one-hour lecture and three laboratory sessions per week. Prerequisite: graduate standing.

HPH 263. Neurochemical Pharmacology (4) A study of the neurobiology of nerve cells and the neurochemical pharmacology associated with function of the central and peripheral nervous systems. Two two-hour lectures per week. Prerequisite: graduate standing.

HPH 269. Bioassay and Biometrics (4) A basic and applied study of the biometrical procedures used in the screening and quality control of

synthetic and naturally derived medicinals. One three-hour lecture and one self-instruction session per week. Prerequisite: graduate standing and permission.

HPH 273. Electrophysiological Technology (4) Designed to introduce the fundamentals of electronic instrumentation, to provide training in electrophysiological techniques and to introduce research design procedures using electronic instrumentation to solve problems in physiology and pharmacology. Two one-hour lectures and two laboratory sessions per week. Prerequisite: graduate standing and permission.

HPH 274. Applied Clinical and Laboratory Electrophysiology (2-4) Designed to provide experience in solving real problems in biomedical instrumentation, clinical evaluation or laboratory investigation utilizing an electronic approach to data gathering and analysis. Prerequisites: HPH 273 and permission. Hours arranged, may be re-elected with permission for a maximum of six credits.

HPH 285. Drug Screening and Evaluation (4) A study of the theory and methodology whereby synthetic chemicals and principles isolated from plant and animal sources may be screened qualitatively for possible therapeutic utility. Emphasis is placed on the elucidation of sites and mechanisms of action of drugs. One three-hour lecture and one six-hour laboratory session per week. Prerequisite: graduate standing and permission.

HPH 293. Graduate Independent Study (3) Laboratory problems and library research in selected topics.

HPH 295. Graduate Seminar (1) Review of current topics in physiology, pharmacology and toxicology. All Master of Science degree candidates are required to attend and to participate each semester. No more than 2 credits may be used toward Masters degree requirements.

HPH 297. Graduate Research (1-5) Research experiences for students at the M.S. level. May be repeated as progress warrants. Prerequisites: graduate standing and permission.

HPH 299. Thesis (4) For M.S. degree candidates only.

HPH 391. Independent Study (1-5) Restricted to doctoral (Ph.D.) candidates. May be repeated with permission as progress warrants. No more than 8 credits may be used toward doctoral degree requirements.

HPH 395. Seminar (1) All doctoral (Ph.D.) candidates are required to attend and participate each semester. No more than six credits may be used toward doctoral degree requirements.

HPH 397. Advanced Graduate Research (1-12) Limited to doctoral (Ph.D.) candidates. May be repeated with permission as progress warrants. No more than 8 credits may be used toward doctoral degree requirements.

HPH 399. Dissertation (1-12) Open only to doctoral (Ph.D.) candidates. No more than 8 credits may be used toward doctoral degree requirements.

Major Course Requirements for the Doctor of Pharmacy Degree

Medicinal Chemistry and Pharmaceutics

HMP 110, 110L. Pharmaceutical Dosage Forms
HMP 112. Pharmaceutical Calculations
HMP 114. Biophysical Properties of Drugs
HMP 120, 120L. Introduction to Parenteral Products
HMP 123, 123L. Biochemistry
HMP 131. Biopharmaceutics
HMP 134. Medicinal Chemistry I
HMP 141. Clinical Pharmacokinetics
HMP 144. Medicinal Chemistry II
HMP 154. Chemotherapeutic Agents
HMP 161. Nutrition

Department of Pharmacy Practice

HCA 113. Intro. to Pharmacy Practice
HCA 115. Medical Microbiology
HCA 122. Biostatistics and Literature Evaluation
HCA 123. Health Care Delivery Systems
HCA 124. Community and Institutional Pharmacy
HCA 142. Clinical Lab. and Physical Assessment Techniques
HCA 152. OTC Therapeutics and Health Accessories
HCA 153. Pharmacy Management
HCA 157. Therapeutics I
HCA 162. Contemporary Pharmacy Practice
HCA 163. Pharmacy Law and Ethics
HCA 167. Therapeutics II
HCA 169. Therapeutics III
HCA 171-179. Clinical Experience Rotations
HCA 181-189. Clinical Experience Rotations

Physiology and Pharmacology

HPH 117. Physiology and Anatomy I
HPH 127. Physiology and Anatomy II
HPH 135. Pharmacology-Toxicology I
HPH 136. Pharmacology-Toxicology Lab
HPH 137. Physiology and Anatomy III
HPH 145. Pharmacology-Toxicology II
HPH 146. Disease States I
HPH 156. Disease States II

Career-related Electives — 8 units

Academic Calendar School of Pharmacy

Fall Term	1991
Clinical Experience	August 19-Dec. 20
Labor Day Holiday	September 2
Registration	September 3-5
Classes Begin	September 4
Dean's Welcome Assembly	September 5
Last Day to Add Classes	September 18
Fall Holiday	October 18
Last Day to Drop Classes	October 18
Thanksgiving Vacation	November 27-29 (8:00 a.m.)
Classes Resume	December 2

Classes End	December 6
Final Examination Period	December 9-13

Winter Term 1992

Clinical Experience	January 6-May 8
Registration	January 6-7
Classes Begin	January 6
Martin L. King Holiday	January 20
Last Day to Add Classes	January 21
Presidents' Day Holiday	February 17
Last Day to Drop Classes	February 21
Easter Recess	March 23-27
Classes Resume	April 4
Classes End	April 14
Final Examination Period	April 15-22
Commencement	May 23-24

Spring Term 1992

Registration	April 27-28
Classes Begin	April 27
Last Day to Add Classes	May 11
Memorial Day	May 25
Last Day to Drop Classes	June 12
July 4th Holiday	July 3
Classes End	July 28
Final Examination Period	July 29-Aug. 4

School of Pharmacy Faculty Administrative Officers

Donald L. Sorby, 1984, Dean of the School of Pharmacy, Professor, Pharmaceutical Chemistry, B.S., University of Nebraska, 1955; M.S., University of Washington, 1958; Ph.D., 1960.

Robert B. Supernaw, 1974, Associate Dean of the School of Pharmacy, Professor, Pharmacy Practice, A.A., Long Beach City College, 1967; Pharm.D., University of the Pacific, 1972.

Katherine K. Knapp, 1975, Assistant Dean for Professional Affairs, Associate Professor, Physiology and Pharmacology, B.A., University of Michigan, 1966; M.A., 1967; M.S., 1970; Ph.D., University of California, Davis, 1973.

James W. Blankenship, 1977, Chairman, Department of Physiology and Pharmacology, Professor of Physiology and Pharmacology, B.S., Texas A&M University, 1965; M.S., 1967; Ph.D., University of Utah, 1972.

Patrick N. Catania, 1970, Chairman, Department of Pharmacy Practice, Professor, Clinical Pharmacy, B.S., University of the Pacific, 1968; M.S., 1970; Ph.D., 1973.

Donald G. Floriddia, 1968, Chairman, Department of Pharmaceutics and Medicinal Chemistry, Professor of Pharmaceutics, B.S., Massachusetts College of Pharmacy, 1966; M.S., 1968; Ph.D., University of the Pacific, 1971.

Arthur F. Harralson, 1985, Vice Chairman, Pharmacy Practice, Associate Professor, Clinical Pharmacy, Pharm.D., University of California, San Francisco, 1976; B.A., California State University, Long Beach, 1972.

Michael A. Mergener, 1982, Director of Post-Graduate Education, Associate Professor,

Pharmacy Practice, B.S., University of Wisconsin, Madison, 1973; M.S., 1978; Ph.D., 1978.

Ralph L. Saroyan, 1970, Director, Pharmacy Student Affairs, Instructor, Pharmacy Practice, B.S., University of the Pacific, 1964.

Ravindra C. Vasavada, 1973, Director of Graduate Studies in Pharmacy, Professor of Biopharmaceutics and Industrial Pharmacy, B.S., University of Rajasthan, Kota, India, 1956; B.S., University of Bombay, India, 1958; M.S., University of Southern California, 1961; M.S., University of California, Riverside, 1967; Ph.D., University of Rhode Island, 1971.

Supportive Personnel

Ken Crowe, 1986, General Services.

Nel Horvath, 1971, Administrative Assistant.

Sandra L. McNett-McGowan, 1975, Audio-visual Consultant and Illustrator.

Carl W. Schweitzer, 1971, Business Operations Supervisor.

Joel Wagner, 1988, Pharm.D., Campus Pharmacy Manager.

Department of Medicinal Chemistry and Pharmaceutics

Donald Floriddia, Chairman.

Donald Y. Barker, 1957, Emeritus Professor of Pharmaceutics, B.S., University of Manitoba, 1949; M.S., Purdue University, 1953; Ph.D., 1955.

Madhukar G. Chaubal, 1964, Professor of Medicinal Chemistry, B.S., Ferguson College, University of Poona, India, 1951; B.S., University of Bombay, 1954; M.S., University of Toronto, 1960; Ph.D., University of Rhode Island, 1964.

Donald G. Floriddia, 1968, Chairman, Department of Pharmaceutics and Medicinal Chemistry, Professor of Pharmaceutics, B.S., Massachusetts College of Pharmacy, 1966; M.S., 1968; Ph.D., University of the Pacific, 1971; M.S.R.P., University of Southern California, 1975.

David S. Fries, 1973, Professor of Medicinal Chemistry, B.A., Bridgewater College, 1968; Ph.D., Virginia Commonwealth University, 1971.

Alice Jean Matuszak, 1963, Professor of Medicinal Chemistry, B.S., Ohio State University, 1958; M.S., 1959; Ph.D., University of Kansas, 1963.

Robert Oberlender, 1990, Assistant Professor of Medicinal Chemistry, B.S., Temple University, 1979; Ph.D., Purdue University, 1989.

Charles W. Roscoe, 1962, Emeritus Professor, B.S., Idaho State University, 1948; Ph.D., University of Washington, 1954.

Francis W. Sayre, 1968, Professor of Biochemistry, A.B., University of California, 1949; M.A., College of the Pacific, 1951; Ph.D., University of California, 1955.

Ravindra C. Vasavada, 1973, Director of Graduate Studies in Pharmacy, Professor of Biopharmaceutics and Industrial Pharmacy, B.S., University of Rajasthan, Kota, India, 1956; B.S., University of Bombay, India, 1958; M.S., University of Southern California, 1961; M.S., University of California, Riverside, 1967; Ph.D., University of Rhode Island, 1971.

Department of Physiology and Pharmacology

James W. Blankenship, Chairman.

James W. Blankenship, 1977, Professor of Physiology and Pharmacology, B.S., Texas A & M University, 1965; M.S., 1967; Ph.D., University of Utah, 1972.

George C. Ferguson, 1969, Lecturer in Physiology and Pharmacology, B.S., Oregon State University, 1965; D.V.M., 1962.

Katherine K. Knapp, 1975, Assistant Dean for Professional Affairs, Professor of Physiology and Pharmacology, B.S., University of Michigan, 1966; M.A., 1967; M.S., 1970; Ph.D., University of California, Davis, 1973.

Marvin H. Malone, 1969, Emeritus Professor of Physiology and Pharmacology, B.S., University of Nebraska, 1951; M.S., 1953; Ph.D., 1958.

Denis J. Meerdink, 1990, Assistant Professor of Physiology and Pharmacology, B.S., Arizona State University, 1974; M.S., Iowa State University, 1978; Ph.D., 1981.

Carl C. Riedesel, 1956, Emeritus Professor of Physiology and Pharmacology, B.S., University of Idaho, 1934; M.S., University of Nebraska, 1947; Ph.D., State University of Iowa, 1952.

Howell L. Runion, 1969, Professor of Physiology and Pharmacology, B.S., College of the Pacific, 1956; M.S., University of Oregon, 1963; Ph.D., University of Glasgow, 1968; P.A.-C., Stanford University, 1981.

Donald Y. Shirachi, 1971, Professor of Physiology and Pharmacology, B.S., University of the Pacific, 1960; M.S., University of California, 1965; Ph.D., Purdue University, 1968.

Hubert C. Stanton, 1988, Visiting Professor of Pharmacology, B.S., Idaho State University, 1951; M.S., Oregon State University, 1953; Ph.D., State University of Iowa, 1958.

Department of Pharmacy Practice

Patrick Catania, Chairman.

Arthur Harralson, Vice Chairman.

Richard R. Abood, 1991, Professor of Pharmacy Practice, B.S., University of Nebraska, 1972; J.D., University of Nebraska, 1976.

Marilynn Balch, 1980, Lecturer in Pharmacy Practice, B.A., Dominican College of San Rafael, 1966; M.S., University of the Pacific, 1977.

John K. Brown, 1967, Emeritus Professor of Clinical Pharmacy, B.S., University of

Manitoba, 1959; M.S., University of Washington, 1962; Ph.D., 1965.

Sian M. Carr-Lopez, 1990, Assistant Professor of Pharmacy Practice, A.A., Yuba College, 1982; Pharm.D., University of the Pacific, 1985.

Patrick N. Catania, 1970, Chairman, Department of Pharmacy Practice, Professor of Clinical Pharmacy, B.S., University of the Pacific, 1968; M.S., 1970; Ph.D., 1973.

William J. Christopherson, Jr., 1972, Professor of Clinical Pharmacy, B.S., Idaho State University, 1948; M.S., University of Michigan, 1962.

Dean A. Fredriks, 1989, Assistant Professor of Pharmacy Practice, A.A., Modesto Junior College, 1982; Pharm.D., University of California, San Francisco, 1988.

Berit P. Gundersen, 1986, Assistant Professor of Pharmacy Practice, Pharm.D., University of the Pacific, 1984.

Arthur F. Harralson, 1985, Vice Chairman, Pharmacy Practice, Associate Professor of Clinical Pharmacy, B.A., California State University, Long Beach, 1972; Pharm.D., University of California, San Francisco, 1976.

Matthew K. Ito, 1988, Associate Professor of Clinical Pharmacy, Pharm.D., University of Southern California, 1986.

William A. Kehoe, Jr., 1985, Associate Professor of Clinical Pharmacy, B.A., University of California, Los Angeles, 1975; Pharm.D., University of California, San Francisco, 1981.

Cisco N. Kihara, 1957, Emeritus Professor and Lecturer in Pharmacy Practice, Ph.D., Idaho State University, 1929; B.S., 1931; M.S., University of the Pacific, 1961.

James C. King, 1962, Professor of Clinical Pharmacy, B.S., University of New Mexico, 1953; M.S., University of Texas, 1958; Ph.D., 1962.

Bertram L. Lum, 1977, Associate Professor of Clinical Pharmacy, Pharm.D., University of the Pacific, 1976.

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Michael A. Mergener, 1982, Director, Postgraduate Professional Education, Associate Professor of Pharmacy Practice, B.S., University of Wisconsin, 1973; M.S., 1976; Ph.D., 1978.

Fuad M. Nahhas, 1964, Professor of Biological Sciences, B.A., College of the Pacific, 1958; M.A., 1960; Ph.D., Purdue University, 1963.

Max Polinsky, 1961, Emeritus Professor of Pharmacy Practice, B.S., Idaho State College, 1953; M.B.A., University of Wisconsin, 1959; Ph.D., 1965.

Ivan W. Rowland, 1955, Emeritus Professor of Pharmacy Practice, B.S., Idaho State College, 1932; M.S., University of Colorado, 1947; Ph.D., University of Washington, 1954.

Darwin Sarnoff, 1972, Professor of Pharmacy Practice, B.S., Philadelphia College of

Pharmacy, 1963; M.S., Purdue University, 1966; Ph.D., 1969.

Ralph L. Saroyan, 1970, Director, Student Affairs, Instructor of Pharmacy Practice, B.S., University of the Pacific, 1964.

Robert B. Supernaw, 1974, Associate Dean, Professor of Pharmacy Practice, A.A., Long Beach City College, 1967; Pharm.D., University of the Pacific, 1972.

Joel Wagner, 1988, Assistant Clinical Professor of Pharmacy Practice, Pharm.D., University of Southern California, 1969.

Paul J. Williams, 1982, Associate Professor of Clinical Pharmacy, Pharm.D., University of the Pacific, 1974; M.S., University of North Carolina, 1980.

Adjunct Faculty

Oliver R. Anderson, 1988, Adjunct Professor, B.S., University of California, San Francisco, 1955.

Evelyn Apps, 1988, Adjunct Professor, B.S., Glasgow University, Scotland, 1955; B.S., University of Utah, 1968.

Melanie S. Baker, 1988, Adjunct Professor, Pharm.D., University of Southern California, 1988.

William C. Bearce, 1987, Adjunct Professor, A.A., Pasadena City College, 1971; B.A., California State University, Northridge, 1975; Pharm.D., University of the Pacific, 1978.

James S. Bergener, 1988, Adjunct Professor, B.S., North Dakota State University, 1968.

Paul E. Boehm, 1978, Adjunct Professor, B.S., North Dakota State University, 1959; M.S., 1972.

Maureen S. Boro, 1988, Adjunct Professor, Pharm.D., University of California, San Francisco, 1986.

Robert A. Brans, 1988, Adjunct Professor, B.S., University of California, Berkeley, 1960; Pharm.D., University of California, San Francisco, 1965.

Joseph H. Brinkman, 1987, Adjunct Professor, B.S., University of Cincinnati, 1954.

Judy K. Britt, 1984, Adjunct Professor, A.A., San Joaquin Delta College, 1968; Pharm.D., University of the Pacific, 1971.

Martha S. Brodbeck, 1984, Adjunct Professor, A.A., San Joaquin Delta College, 1971; B.S., California State University, Sacramento, 1975; Pharm.D., University of the Pacific, 1976.

William C. Brown, 1988, Adjunct Professor, A.D., Sue Bennett Junior College, 1967; B.S., University of Kentucky, 1970.

William C. Browning, 1985, Adjunct Professor, B.S., University of Arizona, 1971; M.S., 1983.

Louis C. Caiazzo, 1986, Adjunct Professor, B.S. (Pharm), St. Johns University, 1966.

Terry Steven Carlson, 1987, Adjunct Professor, B.S., University of California, Davis, 1980; Pharm.D., University of the Pacific, 1983.

Sian M. Carr-Lopez, 1987, Adjunct Professor, Pharm.D., University of the Pacific, 1985.

Ambrose D. Carrejo, 1987, Adjunct Professor, Pharm.D., University of California, San Francisco, 1986.

Gilbert E. Castillo, 1983, Adjunct Professor, B.S., University of the Pacific, 1976; Pharm.D., 1979.

Sammy A. Castillo, 1988, Adjunct Professor, Pharm.D., University of California, 1977.

Harriet F. Catania, 1980, Adjunct Professor, B.S., University of Pacific, 1970; Pharm.D., 1976.

Jo-Ann L. Caudill, 1982, Adjunct Professor, B.S., University of North Carolina, 1978.

Richard J. Cavallaro, 1987, Adjunct Professor, Pharm.D., University of Southern California, 1986.

Thomas L. Ceekson, 1988, Adjunct Professor, Pharm.D., University of Southern California, 1986.

Lucinda A. Chan, 1985, Adjunct Professor, Pharm.D., University of the Pacific, 1983.

Steven D. Chretien, 1982, Adjunct Professor, Pharm.D., University of California, San Francisco, 1973.

Gretta Christa, 1988, Adjunct Professor, B.S., University of California, Berkeley, 1983; Pharm.D., University of the Pacific, 1986.

Walter W. Christa, 1987, Adjunct Professor, B.S., University of Georgia, 1974.

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Ronald F. Cortopassi, 1988, Adjunct Professor, A.A., College of San Mateo, 1969; B.A., University of California, Santa Barbara, 1971; Pharm.D., University of California, San Francisco, 1975.

Brenda D. Costo, 1988, Adjunct Professor, A.A., Fresno City College, 1982; Pharm.D., University of the Pacific, 1985.

Marc C. Costo, 1987, Adjunct Professor, B.S., University of California, Riverside, 1981; Pharm.D., University of the Pacific, 1984.

Thomas C. Cox, 1987, Adjunct Professor, B.S., Northeast Louisiana University, 1978.

Martha Rose Coyne, 1987, Adjunct Professor, Pharm.D., University of the Pacific, 1983.

David L. Cram, Jr., 1988, Adjunct Professor, B.S., University of California, Davis, 1983; University of California, San Francisco, 1987.

Richard T. Cranston, 1988, Adjunct Professor, B.S., University of Connecticut, 1972; M.S., Ohio State University, 1974.

Bruce Cromer, 1988, Adjunct Professor, B.S., University of Florida, Gainesville, 1968; Pharm.D., University of California, San Francisco, 1978.

Brian J. Dahl, 1988, Adjunct Professor, A.A., Orange Coast College, 1981; B.S., California State University, Fullerton, 1983; Pharm.D., University of California, San Francisco, 1987.

Debbie A. Deftereos, 1987, Adjunct Professor, Pharm.D., University of the Pacific, 1979.
Howard J. DeMeo, 1988, Adjunct Professor, B.S., University of Hawaii, 1970; B.S., Oregon State University, 1973.

Cindy M. Dete, 1988, Adjunct Professor, A.A., City College of San Francisco, 1979; B.A., San Francisco State University, 1982; Pharm.D., University of the Pacific, 1986.

Ronald Dick, 1988, Adjunct Professor, B.S., University of Kansas, 1964; M.S., University of Southern California, 1967.

Randolph L. Dockum, 1983, Adjunct Professor, Pharm.D., University of Southern California, 1978.

Kathryn M. Doyle, 1988, Adjunct Professor, B.S., University of Michigan, 1977.

Bernadette M. Dugoni, 1987, Adjunct Professor, A.A., College of San Mateo, 1979; B.S., University of California, Davis, 1982; Pharm.D., University of California, San Francisco, 1986.

Brent R. Ekins, 1985, Adjunct Professor, B.S., University of Utah, 1974; Pharm.D., 1978.

Gray L. Ellenor, 1983, Adjunct Professor, Pharm.D., University of Southern California, 1970.

Donald B. Ellis, 1988, Adjunct Professor, Pharm.D., University of Southern California, 1983.

Leslie A. Ellis, 1987, Adjunct Professor, B.S., University of Washington, 1982.

Edward J. Elzarian, 1979, Adjunct Professor, B.S., University of the Pacific, 1974; M.S., University of the Pacific, 1978.

John N. Erb, 1987, Adjunct Professor, B.S., Albany College of Pharmacy, 1966; Pharm.D., University of California, 1971.

Steven C. Evans, 1988, Adjunct Professor, A.S., San Diego Mesa College, 1973; Pharm.D., University of the Pacific, 1977.

Richard J. Ferrell, 1986, Adjunct Professor, B.S., North Dakota State University, 1969; M.A., Webster University, 1978.

Joseph F. Fischer, 1988, Adjunct Professor, B.S., University of California, Los Angeles, 1973; Ph.D., University of California, Los Angeles, 1977; Pharm.D., University of the Pacific, 1984.

Debra J. Fong, 1988, Adjunct Professor, Pharm.D., University of Southern California, 1987.

Jerry A. Foster, CMDR, 1984, Adjunct Professor, B.S., University of Southern California, 1970.

Marvin H. Friedman, 1981, Adjunct Professor, B.A., University of California, Los Angeles, 1975; Pharm.D., University of Southern California, 1979.

Joseph S. Gee, 1979, Adjunct Professor, Pharm.D., University of California San Francisco, 1968.

Joseph L. Geierman, Jr., 1988, Adjunct Professor, B.S., Washington State University, 1972; Pharm.D., University of the Pacific, 1979.

Gary W. Geis, 1983, Adjunct Professor,

B.S., Oregon State University, 1961.

Elaine C. George-Pardini, 1985, Adjunct Professor, Pharm.D., University of the Pacific, 1983.

Clifton R. Gibson, 1980, Adjunct Professor, A.S., Cypress College, 1971; B.S., University of the Pacific, 1978.

William S. Giles, 1988, Adjunct Professor, B.S., University of Illinois, 1971.

Donald L. Giusti, 1976, Adjunct Professor, Pharm.D., University of California, San Francisco, 1970.

Elwin D. Goo, 1983, Adjunct Professor, B.A., University of Southern California, 1968; Pharm.D., 1972.

James F. Good, 1987, Adjunct Professor, B.S., University of Wisconsin, 1970.

Ross H. Grasham, 1985, Adjunct Professor, B.S., College of the Pacific, 1959; B.S. in Pharmacy, University of the Pacific, 1965.

Robert E. Gaul, 1988, Adjunct Professor, B.S., Philadelphia College of Pharmacy and Science, 1969.

David R. Gray, 1982, Adjunct Professor, B.S., California State University at Long Beach, 1970; Pharm.D., University of Southern California, 1977.

Charles R. Green, 1974, Adjunct Professor, B.S., University of the Pacific, 1968.

Kenneth R. Hallbauer, 1988, Adjunct Professor, B.S., University of New Mexico, 1964; M.B.A., Golden Gate University, 1977.

Lindsay K. Hamada, 1988, Adjunct Professor, B.S., University of the Pacific, 1986.

Janie K. Hatal, 1986, Adjunct Professor, A.A., College of Sequoia at Visalia, 1975; B.A., University of California, Berkeley, 1977; Pharm.D., University of the Pacific, 1982.

Joseph E. Heins, 1988, Adjunct Professor, B.S., University of California, Santa Barbara, 1985; Pharm.D., University of the Pacific, 1988.

Randall G. Heller, 1984, Adjunct Professor, Pharm.D., University of the Pacific, 1979.

Anne M. Higa, 1982, Adjunct Professor, Pharm.D., University of Southern California, 1974.

Richard W. Ihlenfeld, 1986, Adjunct Professor, B.S., University of Wisconsin, 1966; M.S., University of Michigan, 1974.

Ronald M. Imoto, 1987, Adjunct Professor, A.A., College of the Sequoias, 1967; Pharm.D., University of California, San Francisco, 1971.

Todd K. Inakuku, 1987, Adjunct Professor, B.S., University of Wyoming, 1976.

Gayle C. Inouye, 1987, Adjunct Professor, Pharm.D., University of the Pacific, 1984.

Terry L. Isham, 1988, Adjunct Professor, B.S., University of Tennessee, 1969; M.A., Pepperdine University, 1981.

Guy Ito, 1988, Adjunct Professor, B.S., University of California, Riverside, 1976; Pharm.D., University of Southern California, 1981.

Davis Joe, 1988, Adjunct Professor, B.S., Massachusetts College, 1982.

Scott T. Johns, 1988, Adjunct Professor,

B.A., California State University, Fresno, 1986; Pharm.D., University of California, San Francisco, 1986.

Judith K. Jones, 1974, Adjunct Professor, B.A., Baylor University, 1962; M.D., Baylor College of Medicine, 1966; Ph.D., University of California, San Francisco, 1973.

Mas M. Kamigaki, 1987, Adjunct Professor, B.A., Stanford University, 1961; M.D., Tulane University, 1965.

Claudia A. Kaneshiro, 1982, Adjunct Professor, Pharm.D., University of Southern California, 1979.

Ronald Keil, 1984, Adjunct Professor, B.S., University of Colorado, 1976.

Brian C. Keller, 1988, Adjunct Professor, B.S., University of California, San Diego, 1979; Pharm.D., University of California, San Francisco, 1988.

Gordon H. King, 1972, Adjunct Professor, B.S., University of the Pacific, 1966.

Maria E. Kotsikas, 1987, Adjunct Professor, B.S., University of California, Davis, 1976; Pharm.D., University of Southern California, 1980.

Nancy E. Korman, 1988, Adjunct Professor, Pharm.D., University of California, San Francisco, 1969.

Fred Korr, 1982, Adjunct Professor, Pharm.D., University of California, San Francisco, 1973.

Lesia Krainert, 1987, 1972, Adjunct Professor, B.S., University of the Pacific, 1986.

Joseph A. Kwentus, 1988, Adjunct Professor, B.A., St. Louis University, 1968; M.D., 1972.

Louis A. Lallo, 1983, Adjunct Professor, Pharm.D., University of California, San Francisco, 1975.

Amy W. Lee, 1988, Adjunct Professor, B.S., University of the Pacific, 1980.

Karen L. Lee, 1987, Adjunct Professor, B.A., University of California, Berkeley, 1981; Pharm.D., University of California, San Francisco, 1986.

Karena B. Lee, 1988, Adjunct Professor, Pharm.D., University of California, San Francisco, 1976.

Lily M. Lee, 1988, Adjunct Professor, Pharm.D., University of California, San Francisco, 1977.

Robert T. Lee, 1988, Adjunct Professor, B.S., Idaho State University, Pocatello, 1982.

Susan C. Lee, 1980, Adjunct Professor, B.S., University of California, Santa Barbara, 1971; Pharm.D., University of the Pacific, 1974.

Michael Lewis, 1984, Adjunct Professor, Pharm.D., University of Southern California, 1961.

Greg S. Light, 1986, Adjunct Professor, Pharm.D., University of the Pacific, 1982.

Melvin E. Liter, 1984, Adjunct Professor, B.S., University of Kentucky, 1968; Pharm.D., M.S., University of the Pacific, 1984.

Paul A. Lofholm, 1977, Adjunct Professor, Pharm.D., University of California, San Francisco, 1964.

Kendall W. Lok, 1988, Adjunct Professor, B.S., University of Utah, 1968.

Julio R. Lopez, 1986, Adjunct Professor, B.A., University of California, Los Angeles, 1975; Pharm.D., University of California, San Francisco, 1984.

Gary K. Louie, 1987, Adjunct Professor, B.S., University of California, Los Angeles, 1979; Pharm.D., University of California, San Francisco, 1984.

Stan G. Louie, 1988, Adjunct Professor, B.S., University of California, Los Angeles, 1982; Pharm.D., University of California, San Francisco, 1987.

Susan S. K. Low, 1988, Adjunct Professor, B.S., University of California, Los Angeles, 1982; Pharm.D., University of California, San Francisco, 1987.

Lance J. Lundstad, 1987, Adjunct Professor, B.S., University of Montana, 1977; B.S., University of Montana, 1981; M.S., North Dakota State University, 1986.

Mary Y. Ma, 1977, Adjunct Professor, B.A., University of California, Los Angeles, 1970; Pharm.D., University of Southern California, 1975.

Donald E. MacKeller, 1987, Adjunct Professor, Pharm.D., University of the Pacific, 1986.

Mary W. MacMillan, 1983, Adjunct Professor, B.S., University of South Carolina, 1969.

Daniel S. Maddix, 1987, Adjunct Professor, A.A., Hartnell College, 1982; Pharm.D., University of the Pacific, 1985.

Jane K. Maki, 1987, Adjunct Professor, Pharm.D., University of Southern California, 1985.

Scott C. Martin, 1987, Adjunct Professor, B.S., Northeastern University, Boston, 1981.

Bonnie J. Marty, 1987, Adjunct Professor, B.S., University of Wisconsin, 1980.

Dennis McComb, 1980, Adjunct Professor, Pharm.D., University of the Pacific, 1974.

James T. Miyashiro, 1983, Adjunct Professor, B.A., Oregon State University, 1967; M.A., Central Michigan University, 1977.

Anthony P. Morreale, 1985, Adjunct Professor, Pharm.D., University of the Pacific, 1983.

Edwin E. Muramoto, 1983, Adjunct Professor, Pharm.D., University of California, San Francisco, 1963.

Howard J. Murphy, 1988, Adjunct Professor, A.A., Solano College, 1949; B.S., University of California, San Francisco, 1952.

Ronald E. Nagata, 1982, Adjunct Professor, Pharm.D., University of California, San Francisco, 1968.

Sharlene K. Nakasato, 1982, Adjunct Professor, B.S., University of Southern California, 1977; Pharm.D., 1980.

Bruce S. Nickols, 1970, Adjunct Professor, A.B., College of the Pacific, 1950; M.D., University of Southern California, 1954.

Paul J. Oesterman, 1981, Adjunct Professor, Pharm.D., University of the Pacific, 1976.

Peter J. Ogawa, 1987, Adjunct Professor, Pharm.D., University of California, San Francisco, 1985.

Stanley T. Omaye, 1976, Adjunct Professor, B.A., Sacramento State College, 1968; M.S., University of the Pacific, 1972; Ph.D., Univer-

sity of California, Davis, 1975.

Pat Pappo, 1988, Adjunct Professor, Pharm.D., University of California, San Francisco, 1983.

Gordon E. Peterson, 1982, Adjunct Professor, B.S., University of the Pacific, 1964.

Richard C. Puglisi, 1982, Adjunct Professor, B.S., University of Pittsburgh, 1950.

Kenneth S. Reifman, 1987, Adjunct Professor, B.S., University of Chicago, 1961.

Mark L. Renneker, 1988, Adjunct Professor, B.S., University of California, Santa Cruz, 1975; M.D., University of California, San Francisco, 1979.

Jay P. Rho, 1985, Adjunct Professor, Pharm.D., University of Southern California, 1982.

Moheb M. Rizkallah, 1988, Adjunct Professor, B.S., Cairo University, 1951; M.S., 1968; Pharm.D., University of the Pacific, 1973.

Carlos Infante Robles, 1987, Adjunct Professor, Pharm.D., University of California, San Francisco, 1980.

Jody G. Roblez, 1987, Adjunct Professor, B.S., University of Utah, 1979.

Lisa C. Rodondi, 1987, Adjunct Professor, Pharm.D., University of California, San Francisco, 1984.

Lauren A. Rosenquist, 1988, Adjunct Professor, B.S., University of Minnesota, 1965.

Jean M. F. Roughley, 1988, Adjunct Professor, B.S., St. John's University, 1971; M.A., Long Island University, 1980.

Richard M. Rowe, 1985, Adjunct Professor, Pharm.D., University of the Pacific, 1981.

Nancy B. Russell, 1988, Adjunct Professor, B.S., University of California, Los Angeles, 1977; Pharm.D., University of California, San Francisco, 1982.

Russel A. Ryono, 1987, Adjunct Professor, Pharm.D., University of the Pacific, 1983.

Randall K. Sasaki, 1987, Adjunct Professor, Pharm.D., University of the Pacific, 1979.

Ronald I. Sato, 1985, Adjunct Professor, B.S., University of California, Irvine, 1978; Pharm.D., University of Southern California, 1982.

Hershel D. Schaftel, 1987, Adjunct Professor, B.A., California State University, Northridge, 1979; Pharm.D., University of the Pacific, 1982.

William L. Schalker, 1988, Adjunct Professor, B.S., North Dakota State University, 1957; M.S., 1960.

Kurt S. Schanzenbach, 1987, Adjunct Professor, B.S., Washington State University, 1976; Pharm.D., University of Kentucky, 1979.

James K. Schneider, 1983, Adjunct Professor, B.S., University of the Pacific, 1974.

Robert A. Schneider, 1984, Adjunct Professor, B.S., University of North Dakota, 1961.

William P. Sheets, 1988, Adjunct Professor, Pharm.D., University of Southern California, 1957; M.S., St. Mary's College, 1986.

Robert S. Shimasaki, 1982, Adjunct Professor, B.S., University of California, Los Angeles, 1975; Pharm.D., University of

Southern California, 1979.

Gwen S. Shirai, 1988, Adjunct Professor, B.S., Creighton University, 1956.

Robert Snediker, 1985, Adjunct Professor, B.S., Northeastern University, 1978.

Alvin J. Stefani, 1988, Adjunct Professor, Pharm.D., University of California, San Francisco, 1969.

Frank E. Steger, Jr., 1985, Adjunct Professor, B.S., University of the Pacific, 1980.

Nancy A. M. Stellato, 1988, Adjunct Professor, B.S., Albany College of Pharmacy, 1981.

Richard E. Stotler, 1987, Adjunct Professor, A.A., George Washington University, 1964; B.S., Medical College of Virginia, 1965; M.S., University of Michigan, 1975.

Leslie K. Sumiye, 1985, Adjunct Professor, B.A., University of Hawaii, 1973; B.S., University of Washington, 1976; Pharm.D., Wayne State University, 1979.

Anita Y. Sze, 1988, Adjunct Professor, B.S., University of Southern California, 1981; Pharm.D., 1985.

JoAnne L. Takagi, 1988, Adjunct Professor, B.S., University of California, Irvine, 1976; Pharm.D., University of California, San Francisco, 1986.

Curtis K. Takemoto, 1986, Adjunct Professor, B.S., University of California, San Francisco, 1976; M.S., 1980; Pharm.D., 1984.

Glenn M. Taketa, 1976, Adjunct Professor, Pharm.D., University of Southern California, 1968.

Jeff Taniyama, 1988, Adjunct Professor, Pharm.D., University of Southern California, 1974.

Mark S. Thalken, 1984, Adjunct Professor, Pharm.D., University of the Pacific, 1980.

Gary H. Thomas, 1986, Adjunct Professor, B.S., University of Arizona, 1975; Pharm.D., University of the Pacific, 1977.

Robert A. Thompson, 1987, Adjunct Professor, B.S., Washington State University, 1966; M.S., University of Iowa, 1980.

Roy S. Toledo, 1987, Adjunct Professor, B.S., University of Southern California, 1980; Pharm.D., University of Southern California, 1984.

Mildred P.-Lee Tsang, 1987, Adjunct Professor, Pharm.D., University of California, San Francisco, 1975.

Elise P. Tutt, 1988, Adjunct Professor, B.S., University of Georgia, 1985.

G. Keith Umezawa, 1988, Adjunct Professor, B.A., University of California, Los Angeles, 1973; University of California, San Francisco, 1980.

Lorraine Wagner, 1987, Adjunct Professor, B.S., Sidney University, Australia, 1965; Pharm.D., University of Southern California, 1977.

Robert E. Warren, 1988, Adjunct Professor, A.A., Reedley College, 1963; Pharm.D., University of California, San Francisco, 1967.

Joel N. Weber, 1984, Adjunct Professor, B.S., University of the Pacific, 1978; Pharm.D., 1980.

Richard S. Weiner, 1989, Adjunct Professor,

B.A., University of Delaware, 1975; M.C., 1978; Ph.D., 1981.

Monica C. Weiser, 1988, Adjunct Professor, Pharm.D., University of Southern California, 1984.

Tammie L. White, 1988, Adjunct Professor, B.S., University of California, Los Angeles, 1983; Pharm.D., University of California, San Francisco, 1987.

Alisa D. Whitmore, 1988, Adjunct Professor, Pharm.D., University of California, San Francisco, 1981.

Sheila J. Whittle, 1983, Adjunct Professor, B.S., University of Oklahoma College of Pharmacy, 1972; M.S., 1974.

David C. Williams, 1988, Adjunct Professor, B.S., University of the Pacific, 1978.

Douglas M. Witmore, 1988, Adjunct Professor, Pharm.D., University of California, San Francisco, 1965.

Joseph A. Woelfel, 1985, Adjunct Professor, B.S., University of the Pacific, 1970; M.S., 1972; Ph.D., 1978.

Claudia M. Wong, 1985, Adjunct Professor, Pharm.D., University of Southern California, 1982.

Katharine A. Wong, 1985, Adjunct Professor, Pharm.D., University of the Pacific, 1982.

Frederick O. Woo, 1987, Adjunct Professor, B.S., Stanford University, 1954.

Joseph C. Woo, 1986, Adjunct Professor, B.S., University of the Pacific, 1977.

Margie M. Woo, 1988, Adjunct Professor, Pharm.D., University of the Pacific, 1987.

Karen A. Wood, 1988, Adjunct Professor, Pharm.D., University of Southern California, 1987.

James W. Wright, 1983, Adjunct Professor, B.S., University of California, Davis, 1976; Pharm.D., University of California, San Francisco, 1980.

Gary A. Yawman, 1984, Adjunct Professor, B.S., Washington State University, 1974.

Freddie W. Yee, 1987, Adjunct Professor, B.S., Sacramento State University, 1978; B.S., University of the Pacific, 1981.

William P. Yee, 1986, Adjunct Professor, Pharm.D., University of the Pacific, 1983.

Sharon L. Youmans, 1986, Adjunct Professor, Pharm.D., University of California, San Francisco, 1985.

Alan Young, 1976, Adjunct Professor, B.S., University of the Pacific, 1966.

Lowell S. Young, 1988, Adjunct Professor, B.A., Princeton, 1960; M.D., Harvard, 1964.

Larry A. Zelman, 1985, Adjunct Professor, Pharm.D., University of Southern California, 1983.

“We provide a flexible academic program and individualized support services to adult students who are returning to college to change their careers and the direction of their lives.”



**Don Duns, Dean
University College**

UNIVERSITY COLLEGE

An undergraduate division of the University of the Pacific specifically designed to provide academic programs and essential support services to adult learners twenty-five years of age or older.

University College is oriented toward serving the needs of adults, often part-time students, who wish to obtain or complete an undergraduate degree. It assists interested persons in determining if they can be admitted to the University, identifying appropriate academic programs to meet individual needs, acquiring financial aid information, and securing access to needed student services.

University College is a "mainstreaming" program which integrates adult learners with the younger "traditional" students. The classes chosen by University College students are taken from the traditional curriculum and are taught by highly qualified full-time university faculty members. The academic diversity of the University is available to University College students. Students may take courses in any of the other schools and colleges on the campus, provided that they meet the prerequisites of the course.

"I came to the University of the Pacific seeking a credential which would make me what I should have been. I found something much more important, an education."

John Malcolm

University College offers a very flexible curriculum. Majors may be designed to meet the specific career plans of the student. Classes are offered throughout the day and there is a selection of evening courses so that persons working during the day may still complete their work toward a degree. Because re-entry students often experience difficulties in their work or in family circumstances, some choose to take a semester off and return to resume their studies at a later time.

Summer session at the University of the Pacific offers special opportunities for University College students with early morning, daytime and evening classes at a lower tuition. Because the summer contains three separate sessions, students may complete the equivalent of an entire semester's work by taking the maximum number of units allowed in each session.

"Returning students seem to be more motivated, open and serious, and they come with a vast range of experience to which they can relate their academic knowledge. They are a very positive influence on others in the classroom — their motivation sparks people."

Professor Harvey Williams

Students in University College experience many advantages because the University of the Pacific is a resident campus. They can participate in and benefit from the many activities and events which take place every day of the week. Conservatory concerts, notable speakers, athletic events, recreational opportunities and other activities for learning and entertainment are available to University College students.

University College students are organized into the University College Student Association (UCSA). As a constituent member of the Associated Students of the University of the Pacific (ASUOP), the UCSA participates through its officers in governance, plans and programs, activities for University College students, and it receives a portion of the student fees for its own use.

Who Should Consider University College?

University College students are at a point of transition in their lives and find they need a change in a direction which involves more academic work. Although most University College students enter with approximately two years of college experience, it is possible to enter the College with very little or no previous work at the college level.

"My decision to return to school was one that allowed me to gain direction and confidence in myself, as well as achieve an excellent education. Enrolling in UOP, was by far, an excellent choice on my part. Professors at UOP acknowledge their students as individuals and with complete respect. In addition, they permit themselves to be available if you need to meet with them."

Mary Gomez

The standards of admission for University College students are the same as those applied to all other entering students. Consideration is given, however, for the years of experience and accomplishment most adult students have gained through work, volunteer activity or independent learning.

The majority of University College students are employed at least part-time while they attend classes. Most students enroll in at least a half-time course of study (minimum of six units) and less than a full-time schedule (twelve units). There are some students, however, who carry a full-time course of study and do not work.

Academic Programs Offered By University College

University College draws on virtually the entire University for its academic programs. University College students work with a faculty adviser and a fellow re-entry student adviser to develop an individualized program of study from existing university resources. Students may opt for a traditional major offered in one of the other schools and colleges of the University by obtaining approval of the sponsoring unit and completing its requirements. For example, students may enroll in a variety of majors offered in the College of the Pacific, or seek a teaching credential through the School of Education.

Currently University College students are majoring in Computer Science, Biology, Chemistry, Communication, English, Art, multi-subject credential programs through a Liberal Studies Major, Public Relations (self-designed), Organizational Behavior (self-designed), Human Services (self-designed), as well as other existing and self-designed major options.

The University has recently adopted a policy allowing students to enroll in a minor field of study in addition to the major. Students may take advantage of this option in a variety of disciplines including business administration, organizational behavior, women's studies, history and other areas.

Experiential Learning Credit

University College students have several opportunities to earn credit for experiential learning. One option is to earn credit through the preparation of a portfolio containing essays describing a significant work experience, volunteer activity or creative activity. Essays prepared by the student, in effect, challenge courses regularly offered at the University of the Pacific. Faculty members who teach the relevant courses evaluate the essays to determine if the student has actually learned the content of the course through experience. Up to 30 units of credit toward a degree may be earned in this way. Restrictions on this credit limit it to elective units only. General Education or major requirements cannot be met through this option. A fee is charged for the evaluation services and credit awarded.

Students may also take CLEP examinations (College Level Examination Program) for a reasonable fee and earn four units of undergraduate, lower division credit for each test receiving a passing score. Broad area tests and specific field tests are available.

Other forms of experiential credit include units earned through challenging courses and through cooperative education and internships.

University College will assist students who wish to take advantage of these opportunities to earn credit for experiential learning. A special course in portfolio preparation is offered periodically by the College.

Degree Requirements

The University College students normally receive a Bachelor of Arts degree. This degree requires satisfactory completion of 124 units of credit, completion of an academic major or concentration, and completion of the University General Education Program, including writing and quantitative skills proficiency requirements. Students must earn a "C" average (2.00) in all college work taken for the degree, in work taken at the University of the Pacific, and in courses taken as major requirements. A residency requirement stipulates that 32 of the last 40 units taken for completion of the undergraduate degree must be taken at the University of the Pacific, excluding units received for credit for prior experiential learning.

A maximum of 30 units may be earned through a combination of concurrent enrollment in classes at other college and universities while enrolled at UOP, correspondence and extension courses from other regionally accredited colleges and universities, and military or non-collegiate courses evaluated by the American Council on Education.

Student Support Services

Often, when a person has spent several years employed, caring for a family or otherwise involved before continuing their education, they

may need guidance in planning their academic career in relationship to their individual needs, abilities and goals. University College programs begin with assistance in discovering the options that are available. Assessment of personal goals, learning style, vocational interests and level of student skills are among the services offered by the College, in cooperation with several University offices.

The Academic Skills Center provides assistance in reading, writing and study skills. Your student advisers can help you with test-taking and time management. The Career Planning and Placement Office provides skilled assistance for persons in search of career options. The University's Counseling Center helps students avoid unnecessary stress and develop coping skills. The Mathematics Laboratory assists students who must meet the university quantitative skills requirement. Of course, skilled academic advising is readily available.

"University College has given me all the tools I need to succeed. The support system the college provides allows me to concentrate on my education without having to worry about the administrative details. If I have a question about my program or progress, I feel I can walk into the office and get an answer. The staff, including the Dean, are accessible. Knowing that the support is behind me has given me the confidence to push my boundaries beyond what I ever would have imagined possible."

Muriel Fish

An important dimension of University College is the supportive nature of its student body. Students meet at lunch weekly to discuss their experiences. Frequently they tutor each other

and participate in study groups. University College students, in spite of their busy schedules, are most willing to respond to the personal and academic needs of their peers.

Financial Aid

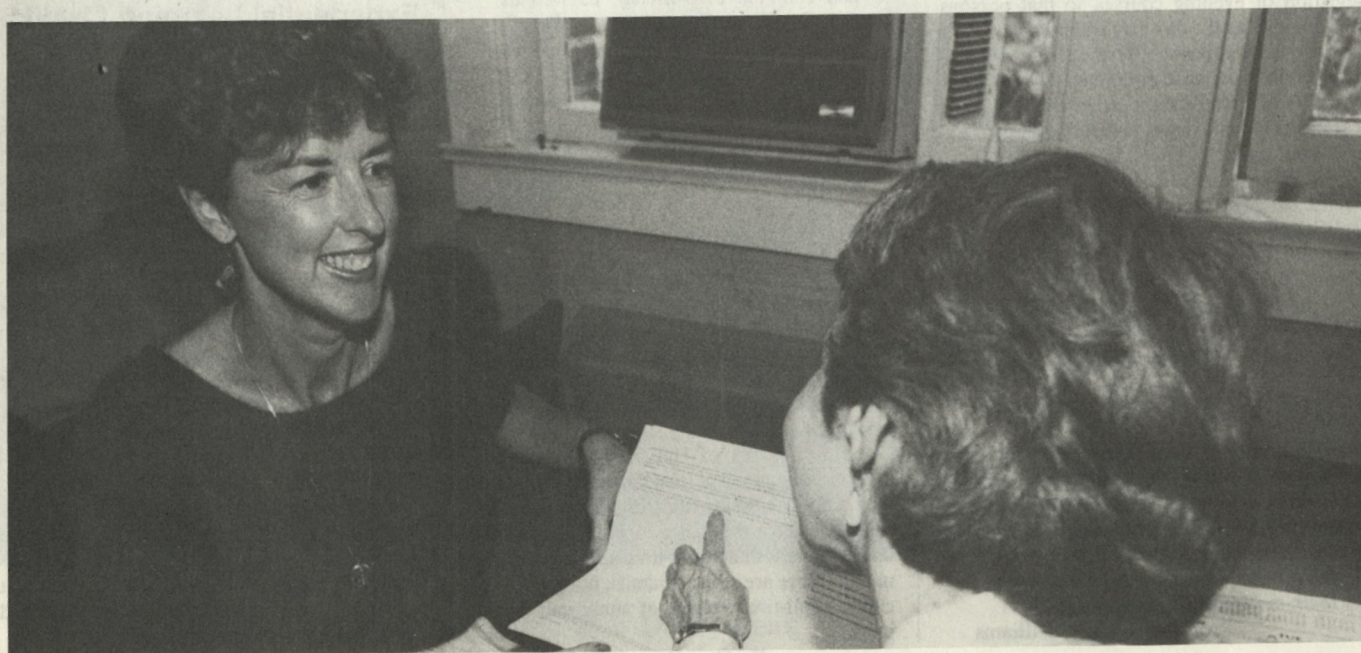
University College students are eligible for the full range of financial aid programs available to any University of the Pacific student who can demonstrate financial need. Indeed, at present approximately sixty-five percent of the students enrolled in University College are receiving substantial financial aid awards (averaging approximately \$10,000 per student per year) composed of grants, loans and work study funds drawn from state, federal and University of the Pacific sources. A small but significant number of University College students are supported in part or in full by their employers.

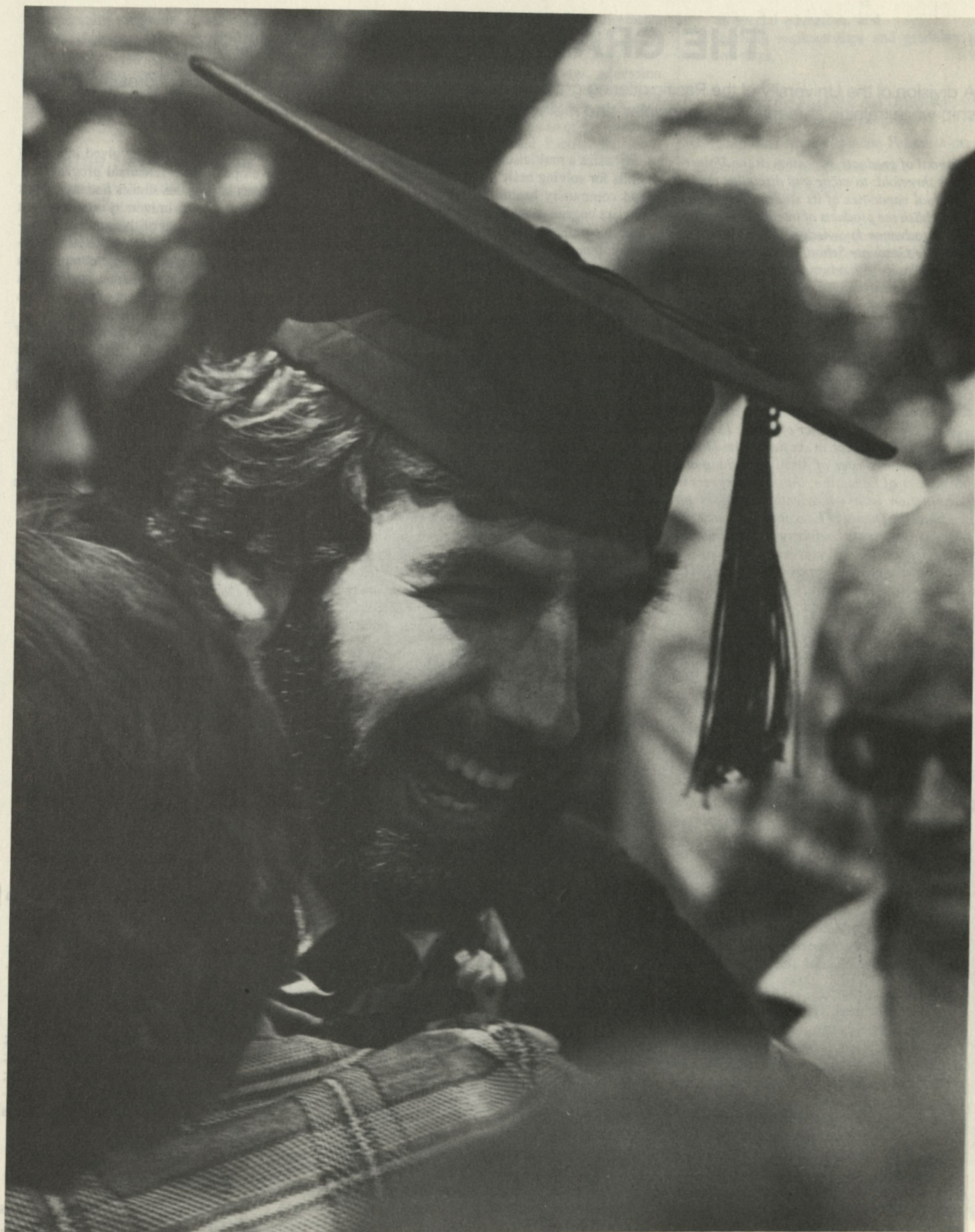
In addition to the traditional state and federal programs, University College also provides information and assistance to students who may want to apply for financial aid from corporate sources, service organizations and other agencies. The College administration works closely with the University Office of Financial Aid in the development of additional sources of financial support for adult students.

"I was concerned as an older student that I would stick out like a sore thumb in the classroom. That simply hasn't been the case. The students are great!"

The faculty members at UOP are outstanding. They are clearly committed to teaching, always available and willing to schedule meetings at off hours."

David Oberholtzer





THE GRADUATE SCHOOL

A division of the University of the Pacific offering graduate programs emphasizing distinctive forms of creative scholarship while training students in the principles and methods of research and developing their professional competence.

The goal of graduate education at the University is threefold: to excite and discipline the intellectual capacities of its students, to record and publish the products of intellectual inquiry, and to advance knowledge. To achieve this goal, the Graduate School encourages faculty to work closely with advanced students to create an environment congenial to advanced academic and professional study and to further scholarship and research.

The Graduate School offers programs through the departments of the College of the Pacific, the School of Education, the School of Engineering, the School of Pharmacy and the Conservatory of Music, leading to seven advanced degrees: the Master of Arts in 12 fields; the Master of Science in six fields; the Master of Music; the Master of Arts in Teaching and the Master of Education, these two degrees in combination with a credential program for teaching; the Doctor of Education; and the Doctor of Philosophy in chemistry and pharmaceutical sciences. The two year entry-level master's program in physical therapy is administered by the School of Pharmacy.

Accreditation. The Graduate School, as an integral part of the University, is accredited by the Accrediting Commission for Senior Colleges and Universities of the Western Association of Schools and Colleges. In addition, the Conservatory of Music is a charter member of the National Association of Schools of Music, and its curriculum in music therapy is accredited by the National Association of Music Therapy. The teacher education work in the School of Education is approved for all of its degrees and credentials by the State Commission for Teacher Preparation and Licensing and by the National Council for Accreditation of Teacher Education. The Department of Communicative Disorders is accredited by the American Speech-Language-Hearing Association. The Physical Therapy degree program is accredited by the American Physical Therapy Association.

Distinctiveness. The distinctiveness of the Graduate School is that its graduate programs emphasize different forms of creative scholarship while training students in the principles and methods of research and developing their professional competence.

For example, interdisciplinary programs in the School of Pharmacy involve physical-chemical mechanisms of drug absorption and bioavailability, molecular mechanisms of drug action, chemical definition of auto-recognition sites, tumor biology and clinical studies in acute and long-term care facilities. So its programs

emphasize a multidisciplinary perspective and skills for solving basic problems in individual and community health. Research students in physics engage in studies in theoretical physics and theoretical chemistry based on recent developments in the theory of groups and differential equations. Discoveries made in the department provide unique viewpoints that unify these investigations.

Graduate students in biological sciences carry out research in areas ranging from field studies in plant and animal systematics and ecology to laboratory studies on bacterial antibodies and cellular morphogenesis. They learn to use a variety of techniques such as slab gel electrophoresis, electron microscopy and computerized data reduction.

In the School of Education, the Bureau of Educational Research and Field Services enables graduate students to develop and implement their own research projects as well as to participate in programs funded by outside agencies. Students studying in communication are urged to become involved in interdisciplinary learning experiences augmented by field study and internships as they pursue their degrees in such areas as mass media, behavioral studies, rhetorical theory and linguistics.

In the School of Engineering, the Department of Electrical and Computer Engineering offers a master's degree program which includes a clinic concept bringing projects from industry on campus to be studied and developed by graduate students.

In psychology, students work toward a degree in behavioral psychology emphasizing either applied behavior analysis/therapy or behavioral medicine. Students prepare for positions providing services to mentally and/or developmentally disabled populations, positions in business settings, and positions in health care delivery systems involving the application of psychological knowledge to the treatment of physical diseases. The program also provides preparation for doctoral work in psychology for those students who wish to study beyond the master's degree.

The graduate degree in communicative disorders prepares students for California licensure and national certification. Both on campus and off campus practicums are complements to the academic program. Students may also elect to obtain the Clinical Rehabilitative Services Credential/Speech, Hearing and Language.

In the Conservatory of Music, some students are being prepared for the performance world, some enter college teaching or music education in public or private schools, others music therapy. Music education students have

the opportunity to become involved in a carefully developed micro-rehearsal program.

Students in religious studies find their work supported by a total university environment rather than the isolation of the seminary. Students in sociology find Stockton to be a community that is unique in its ethnic composition and in the role Blacks, Chicanos and Asians have played in the development of the city, San Joaquin County and California.

The University Library has a number of special collections including holdings on the history of the American West and substantial portions of the original papers of John Muir and Jack London.

Degree Programs

Master's degree programs are offered in the areas of study listed below:

Biological Sciences (M.S.)
Chemistry (M.S.)
Communication (M.A.)
Communicative Disorders (M.A.)
Education (M.A., M.Ed., M.A.T.)
Electrical Engineering (M.S.)
English (M.A.)
History (M.A.)
Inter-American Studies (M.A.)
Music (M.A., Mus.M.)
Music Therapy (M.A.)
Pharmaceutical Sciences (M.S.):
 Pharmaceutics, Medicinal Chemistry,
 Physiology-Pharmacology, Clinical
 Pharmacy, Toxicology
Physical Education and Recreation (M.A.)
Physical Therapy (M.S.)
Physics (M.S.)
Psychology (M.A.)
Religious Studies (M.A.)
Sociology (M.A.)
Spanish (M.A.) (See under Inter-American Studies)

Degree programs leading to the Ph.D. are offered in chemistry and pharmaceutical sciences.

Degree programs leading to the Ed.D. are offered in the following areas:

Foundations and multicultural education; educational administration and supervision; educational and counseling psychology; curriculum and instruction; music education; special education; other possible areas of concentration.

Credential Program

The graduate program in education prepares candidates for credentials for public schools.

Preparation programs exist in the following areas: classroom teaching, pupil personnel services, school psychologist, administrative services and four specialist programs (Language Development, Reading, Special Education and English as a Second Language).

Degree Requirements

For Master's — Satisfactory completion of 30 or more units of graduate work or a minimum of six or eight courses, depending on whether the student follows a thesis plan, a non-thesis plan or a plan which also meets certain State certification requirements.

For Ed.D. and Ph.D. — Degree requirements are outlined in the Graduate School Catalog.

For detailed program listings, admission requirements and financial aid information, write for a copy of the Graduate School Catalog at the following address: Dean of the Graduate School, University of the Pacific, Stockton, California 95211.

Financial Aid

Contact the appropriate Graduate Department for information regarding the following:

1. government-funded programs in such areas

- as special education, and
2. teaching assistantships and graduate fellowships.

Contact the Financial Aid Office for information on the following programs:

1. California State Graduate Fellowships,
2. federal loan programs, and
3. college work-study.

For information on government bilingual teacher grant programs, contact both the School of Education and the Financial Aid Office.



McGEORGE SCHOOL OF LAW

A professional school of University of the Pacific offering a Juris Doctor Degree in a full-time or part-time program, and Master of Laws Degrees in Taxation, Business and Taxation, and Transnational Business Practice.

McGeorge School of Law was founded in 1924. Its purpose is to prepare its graduates for the various roles performed by men and women who are members of the legal profession in our society. As the Sacramento campus of the University of the Pacific, McGeorge occupies a significant place in the legal education community. The law school is a dynamic center for legal education, research, and training in the skills of legal advocacy.

Accreditation. McGeorge School of Law is a member of the Association of American Law Schools, fully accredited by the American Bar Association and by the Committee of Bar Examiners of the California State Bar, registered by the Regents of the State University of New York, and approved by the Veterans Administration for veterans' educational benefit programs. The School of Law has a chapter of The Order of the Coif, the national legal scholastic honor society.

Campus and Library Facilities. The Sacramento campus, which is devoted exclusively to law training, occupies a 20-acre site with more than 25 buildings designed as an attractive "living and learning environment" and is considered one of the finest in the nation. On campus housing as well as a swimming pool, sauna, spa and other recreational facilities are located within the law school complex.

About 1,200 students are enrolled in the School's full-time day and part-time evening divisions as well as its graduate law programs. All 50 states and several foreign countries are usually represented in the student body.

The Law Library consists of six reading rooms including a two-story stack area. A variety of study accommodations are available, including individual carrels, group study rooms, typing rooms and videotape viewing rooms. The library presently contains over 330,000 volumes. The Law Lab, a computer learning and research center contains computer terminals available for use by students in computer-assisted law exercises, LEXIS and WESTLAW computerized legal research tools, and word processing.

All buildings are climatized and carpeted throughout to provide an atmosphere conducive to professional study and training.

The Center for Advanced Study of Law and Policy houses the Clinical Programs and provides faculty offices as well as research and classroom space for the post-juris doctor degree programs.

The law school's Center for Legal Advocacy houses the nationally-recognized "Courtroom of the Future." This circular courtroom

arena contains design features and advanced electronic and visual display equipment to function as a model for developing new methods to facilitate the judicial process. The courtroom serves two main purposes: as a classroom for training in the skills of trial advocacy and as a laboratory for research studies of judicial process. All first year students have an opportunity to sit as jurors in mock trials conducted weekly by senior students and presided over by visiting trial judges.

The law school is within easy driving distance of the California State Capitol, legislative and government offices, federal, state, local and appellate courts, and the State Law Library. Students are thus able to observe the law and decision-making processes at their sources and are conveniently located near their clinical or work-study assignments.

Basic Program of Study and Degree Requirements. The law school operates on the semester system with 88 units required for the J.D. degree. The full-time program of study in the Day Division requires three years of law study, while the part-time Evening Division program requires four years. An accelerated Evening Division program is open to part-time students who achieve a minimum cumulative grade point average of 2.5 at the completion of the first year. The required first year curriculum for full-time students includes Introduction to Law, Criminal Law, Contracts, Torts, Property, Legal Research and Writing, and Civil Procedure. In advanced years, students take a combination of required and elective courses designed to assist them achieve their perceived roles in the legal profession. The current program contains over 100 electives in the areas of business, commerce, labor law, environmental law, property, personal relationships, torts, criminal justice, taxation, public and administrative law, comparative and international law, interdisciplinary courses, clinical and practice-oriented electives, and special programs and activities.

A special joint degree program is available with limited cross-credit for acquisition of the J.D./M.B.A. (Master of Business Administration), and other advanced degrees in accounting and computer science through an arrangement with California State University, Sacramento.

The faculty is composed of 61 full-time professors and 33 adjunct professors. McGeorge has an active program of bringing distinguished legal scholars to the campus on an annual visiting basis. The law school has had a tradition of close and personal relationships among the faculty, administration and students

which helps to create an environment in which professional ideals are developed and maximum learning takes place.

Activities. The *Pacific Law Journal* has one of the largest circulations among law reviews in California. McGeorge's location in the state capital has led to a natural emphasis on California legislation. Published quarterly, the student-operated *Journal* includes a section analyzing "Significant California Legislation of the Year" which is read by a large percentage of the state's practicing attorneys. The *Transnational Lawyer*, another student-operated journal, focuses on matters of interest to the practitioner involved in international business transactions.

All students are members of the Student Bar Association which through its elected Board of Governors coordinates a number of activities, including the annual Lou Ashe Legal Symposium where noted lawyers, judges and government officials participate. The school also has a program for recognizing student organizations of various interests and memberships. Some of the various organizations open to all law students include the Women's Caucus, Law Partners, minority law students' organizations, legal fraternities, Nevada Law Students Association, Student Trial Lawyers, Computers and Law Association, religiously affiliated organizations, the Business Law Forum, the Environmental Law Forum, the Sports Law Forum and the Pacific International Law Society.

Moot Court and International Moot Court Honors Boards composed of advanced students administer the moot court programs. All law students are required to participate in one of the Moot Court programs. Top students are selected from this program to represent McGeorge in state-wide, regional and national competitions with other law schools.

The Roger Traynor Honor Society, named for the distinguished former Chief Justice of the California Supreme Court, honors scholastic excellence by selecting for membership students named to the Dean's Honor List for each of two years. Students whose academic performances place them in the top ten per cent of the graduating class are eligible for election to The Order of The Coif.

Special Programs

Graduate Programs. The J.D. program is enriched by graduate programs leading to the Master of Laws (LL.M.) in Taxation, Business and Taxation, and Transnational Business Practice, portions of which are open to J.D. candidates.

International Programs. Headquartered at Salzburg University in Austria, McGeorge operates a variety of international programs which provide experience abroad. A Summer International Legal Studies course is available at Salzburg to current law students. The Budapest/Vienna Institute on East/West Commerce and Law provides an opportunity for contact with a socialist bloc legal system. In cooperation with the Inns of Court, the London Institute on Comparative Advocacy provides a unique opportunity for law students to participate in the training by which English barristers are called to the Bar. Also in London, the Institute on International Business and Commercial Law focuses on transnational business transactions.

For post-juris doctor study, a specialized graduate study program combined with an overseas internship with a firm or public agency in Europe or the Pacific Rim leads to the Master of Laws (LL.M.) in Transnational Business Practice.

Trial Advocacy and Clinical Programs.

The School of Law has been a leader in advocacy training and clinical experiences designed to develop students' skills and confidence in the courtroom setting. A program for seniors in Trial Preparation and Advocacy provides opportunities for learning how to interview clients, gather evidence, prepare facts and present evidence in a full-day trial in the McGeorge courtroom. Students may also earn credits working on actual cases through a number of clinical programs including District Attorney and Public Defender Internships, the Attorney General Civil and Criminal Appellate Practice programs, Legal Aid Clinics, Legislation and the Law of Politics, and various State of California agencies such as the Energy Commission, the Department of Water Resources, Public Employee Retirement System, and the State Board of Equalization. Additionally, stu-

dents gain clinical experience through judicial internships and placement with other agencies such as the Office of the United States Attorney, the Roseville City Attorney and the Sacramento County Counsel.

The law school operates its own law offices, including the Community Legal Services Center, the Administrative Adjudication and Victims of Crime Clinics, the Small Claims Advisors Clinic and the Sacramento Mediation Center Clinic. These offices are staffed by full-time attorney instructors and a large staff of student attorneys.

Through these programs, students gain experience in all phases of the attorney-client relationship, including supervised representation of clients in court. Other opportunities for clinical legal experience exist through volunteer service and through work-study programs in government legal offices. Further insights can be gained through the Student Research Pool and the Moot Court Programs. By providing these and other opportunities, McGeorge strives to bridge the gap between law school and practice in the profession.

Admission Requirements

The School of Law will receive applications for admission to regular status from individuals who have received the Bachelor's degree from an accredited college or university or who will have completed this work by the time of admission to law school. An applicant seeking admission to McGeorge School of Law, day or evening division, must comply with the following procedures:

1. Complete an application for admission on the official form available from the Admissions Office and enclose an application fee (non-refundable).
2. Take the Law School Admission Test.
3. Register with the Law School Data Assembly Service (LSDAS).

4. Furnish at least three letters of recommendation evaluating the applicant's integrity and potential for legal studies.

The Committee on Admissions begins reviewing application files early in each calendar year for the entering fall semester class. Although there is no fixed application deadline, the number of seats available for each entering class is limited so early completion of application material is advisable.

In reviewing applicants, the Admissions Committee will grant preference to University of the Pacific graduates when compared to equally qualified graduates of other schools.

To receive the Law School catalog and application forms, write to: Admissions Office, McGeorge School of Law, University of the Pacific, 3200 Fifth Avenue, Sacramento, CA 95817. A copy of "Pre-Law Curriculum: A Dean's Advice" and other pertinent information applicable to special interests will be furnished upon request.

Summer Pre-Law Program. A Pre-Law Program is offered each summer at the University's McGeorge School of Law in Sacramento. Students complete three courses for six units of undergraduate credit. Students also participate in general guidance sessions about law study and legal careers. Housing is available on the Sacramento campus. Past course offerings have included:

UPL 93. The Adversarial Process (2) The role, nature and sources of law in the United States; major legal ideas and legal processes characteristic of the adversary system; emphasis on the evolution through judicial opinions of concepts of justice.

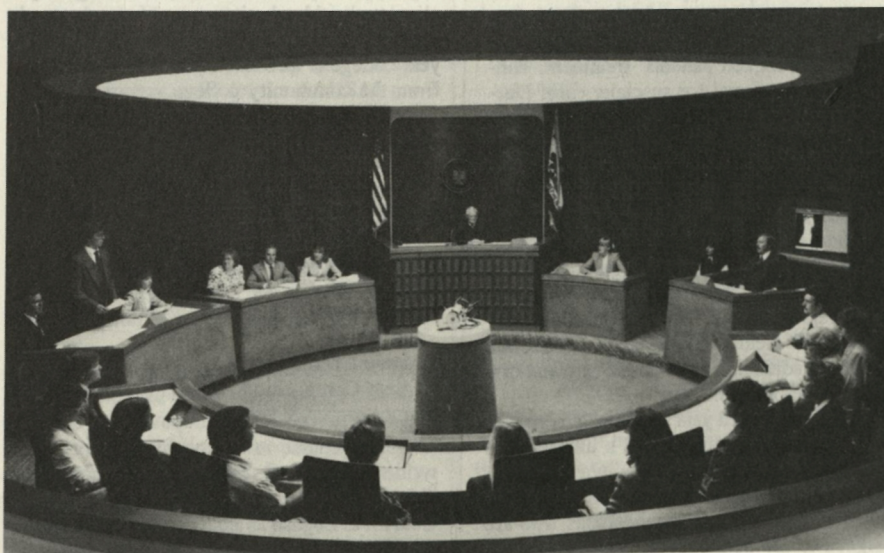
UPL 193A. Individual Rights and the Criminal Process (2) Formation and development of the constitutional framework of the criminal trial; analysis of competing values of maximum personal freedom and a safe society; trends in the administration of criminal justice.

UPL 193B. Procedural Aspects of Judicial Systems (2) Procedural aspects of resolving civil disputes; choice of forum; power and competence of courts; constitutional guarantees of notice and right to be heard.

UPL 193C. The Child, the Family and the State (2) Society's regulation through legal rules and procedures of relationships among family members and between the family, as a basic socio-economic unit, and the larger society of which it is a part.

UPL 193D. Creation of Enforceable Obligations (2) Historical requirements of contract formation; modern statutory enactments; socio-economic principles influencing whether a particular promise should be enforced.

For further information contact Director, Summer Pre-Law Program, University of the Pacific, McGeorge School of Law, 3200 Fifth Avenue, Sacramento, California 95817.



SCHOOL OF DENTISTRY

A professional school of the University of the Pacific offering the Doctor of Dental Surgery Degree in a unique 36-month program that prepares graduates to provide quality dental care to the public and to supplement and adapt their knowledge and skills throughout their professional life.

The School of Dentistry of the University of the Pacific is recognized as one of the outstanding dental health care educational programs in the world. Its graduates have earned a reputation for the highest standards of clinical excellence and are active and successful members of the profession.

The health sciences campus, located in San Francisco, includes didactic, laboratory, and clinical instructional as well as research facilities. The University also includes nearby, reasonably-priced student housing and a community-based teaching clinic.

In addition to the Doctor of Dental Surgery degree, UOP has a program in the specialty of orthodontics, leading to a certificate and the Master of Science degree in Dentistry, an International Dental Studies program which grants a D.D.S. degree to individuals with the equivalent of a doctoral degree in dentistry from schools in other countries after two years of training, and residency programs in Advanced Clinical Education (ACE) and Advanced Education in General Dentistry (AEGD).

The School of Dentistry is well known for the quality of its clinical education, its thirty-six month program (the only such program in the United States), a humanistic approach to education, and the active participation of its graduates in the School and the profession of dentistry. The dental education programs are fully accredited by the Commission on Dental Education. The School of Dentistry is a member of the American Association of Dental Schools.

Mission

The four academic/three calendar year program leads to the Doctor of Dental Surgery degree. Basic goals of the School of Dentistry are to:

1. educate persons who, upon completion of the academic and clinical programs, will be prepared to provide quality dental care to the public;
2. conduct and disseminate the results of research in the areas of basic sciences, clinical dentistry, delivery of dental care and dental education;
3. provide comprehensive dental treatment and information through clinic facilities in the building, community clinics and education programs;
4. provide and promote continuing education programs to keep practicing dental professionals current with recent developments in the field; and to
5. provide postgraduate education programs which will both strengthen the quality of

undergraduate education and open avenues of professional advancement for qualified graduates from dental programs.

Curriculum

The thirty-six month curriculum leading to the degree of Doctor of Dental Surgery combines biomedical, preclinical and clinical arts and sciences in a program that prepares graduates to provide excellent quality dental care to the public and to enter a changing world that will require them to supplement and adapt existing knowledge and skills. The academic year beginning in July is divided into 13-week quarters consisting of ten weeks of instruction, an examination week and two weeks of vacation.

Biomedical science instruction in anatomy, biochemistry, physiology, pharmacology and microbiology is offered during the first eight quarters, and diagnostic science instruction in pathology, radiology and oral diagnosis and treatment planning is continued throughout the curriculum. Principles and procedures of preventive dentistry and appropriate aspects of the behavioral sciences are presented and practiced throughout the program.

Preclinical instruction in the various dental disciplines is concentrated in the first four quarters with students learning to work from a seated position in preclinical laboratories and with a chairside assistant in conjunction with pediatric dental practice. Clinical work with patients is initiated in the third quarter.

Advanced instruction is correlated with clinical practice during the second and third years. The School's comprehensive patient care program is based on the concept of private dental practice where the student assumes responsibility for assigned patients' treatment, consultation and referral for specialty care. During the second year, students provide comprehensive dental care under direction of a group practice administrator and multidisciplinary faculty team from diagnostic sciences, periodontics, operative dentistry, endodontics, orthodontics, and fixed and removable prosthodontics.

Oral and maxillofacial surgery, pediatric dentistry and radiology are learned in respective specialty clinics. Doctoral students participate with faculty and graduate orthodontic students in adjunctive orthodontic care and oral development clinics.

During the third year, students practice 36 hours per week in the School's ultramodern clinic and in extramural clinics in a variety of community settings. Students are assisted at the chair by community college students who are assigned to the School to gain clinical dental

assisting experience. Under faculty supervision, advanced students provide dental care in selected community clinics that resemble private practice settings more closely than intramural clinics. Instructional emphasis at extramural sites includes development of dental office and auxiliary management skills.

In addition to instruction in principles of practice management, students receive individual counsel regarding how and where to establish practice and to apply for postgraduate education. A weekend conference devoted to new developments in dentistry serves to acquaint students with opportunities for postgraduate education and to discuss the realities of dental practice with alumni.

Admission Requirements

There are four basic requirements for admission to the course of study leading to the degree of Doctor of Dental Surgery: completion of required pre dental education, completion of the Dental Admission Test (DAT), submission of complete application materials, and appearance at the School for a personal interview.

Pre dental education must be completed at a college or university from which subject matter is accepted for credit toward advanced standing at the University of the Pacific or universities with equal standing. At least three years of collegiate work, including 135 quarter or 90 semester credits is recommended. Courses from a community college will be acceptable if they are transferable as equivalent to pre dental courses at a four year college. Applicants should submit a copy of an advanced standing evaluation form provided by the four year college or a course equivalency statement from the community college.

Required pre dental education courses include the following:

	Semester	Quarter
Biology or Zoology with laboratory	2	3
General Physics with laboratory	2	3
Inorganic Chemistry with laboratory	2	3
Organic Chemistry	1	2
English Composition, Communication or Speech*	2	3

*One course in composition or technical writing is required. Other courses should develop written or verbal communication skills. Courses in English as a Second Language (ESL) do not meet this requirement.

Students who do not speak English as their primary language may be required to submit results of the Test of English as a Foreign Language (TOEFL).

Pass/Fail evaluations in required subjects are unacceptable unless accompanied by a narrative transcript provided by the awarding school.

Although it is recommended that applicants have a baccalaureate degree, no specific major is required or preferred. Upper division courses that extend content of required subjects and/or those in areas such as economics, computer science, business administration and the humanities, are recommended.

The Dental Admission Test (DAT) is administered in April and October each year at approximately 100 centers nationwide and applicants to the School of Dentistry must have taken the test no later than October to qualify for the class entering in July. Applicants are encouraged to take the test earlier than October in the event they wish to repeat the examination, as the highest score achieved in each category is used in evaluation of credentials. Preference is given to students who provide DAT scores no later than November. Information about the test and applications is available from the Division of Educational Measurements, American Dental Association, 211 East Chicago Avenue, Chicago, Illinois 60611.

Application materials. The School of Dentistry participates in the American Association of Dental Schools Application Service (AADSAS). AADSAS is an information clearinghouse which will transmit to a dental school the biographical and academic data required by admissions committees, thereby relieving the applicant of the burden of completing multiple and repetitious individual applications. To apply to the School, mail a postcard to AADSAS, 1625 Massachusetts Avenue, N.W., Suite 101, Washington, D.C. 20036, and request application materials. Return the completed application form to AADSAS with copies of transcripts from each college and university attended, and a check or money order for the AADSAS processing fee: \$85.00 for the first school and \$10.00 for each additional school. Completed application materials must be received by AADSAS no later than December 15 for an applicant to be considered for the class entering in July. A fee of \$50 is required by the School before processing of an application is initiated. This application fee will be applied to first quarter tuition for students enrolled in the program.

If the undergraduate institution has a pre-health sciences advisory committee, a committee evaluation is required. Otherwise, three letters of recommendation are required, one from a predoctoral advisor and two from predoctoral or upper division course professors. Letters of recommendation from health care professionals who know the applicant well are encouraged.

Personal interview. Applicants whose credentials appear to meet predoctoral requirements are invited to the School for an interview with one or more members of the Admissions Committee. Applicants selected for interview are notified by letter of available dates for the interview. During the interview the applicant's interest in dentistry, future plans, maturity and personal qualities needed for successful work with patients are assessed. In addition, applicants participate in an orientation seminar, meet informally with current students, and tour the School.

Selection factors. The Admissions Committee carefully considers each applicant's scholastic record, scores on the DAT, AADSAS essay, letters of recommendation, evidence of manual dexterity (including the perceptual ability portion of the DAT), and other personal attributes and qualities, as well as demonstration of his or her understanding about a career in the dental profession.

The Admissions Committee has a firm policy of not discriminating against any applicant because of age, creed, national or ethnic origin, marital status, race, color, gender, or sexual orientation. Established review procedures ensure applicants an equal opportunity to be considered for admission. The School has an affirmative action program with regard to admission of qualified ethnic minorities, females and members of under-represented groups.

Honors Programs

Five Year Program Leading to D.D.S. Degree

Minimum requirements for predoctoral education may also be met through an Honors Program. This program was initiated at the University's Stockton campus in 1984 to provide predoctoral education in two academic years for qualified students. Entrance requirements at the freshman level are as follows:

1. A combined SAT score of 1,200.
2. A 3.5 grade point average based on a substantial high school mathematics and science program.
3. Acceptable scores on the UOP competency examinations in writing and quantitative skills administered upon entering the University.

Acceptance into the Honors Program is limited each year to ten students.

Six Year Program Leading to Baccalaureate/D.D.S. Degrees

High school students also have an opportunity to enroll in a selective Six Year Baccalaureate/D.D.S. Program. Students accepted into the program may obtain a bachelor's degree from the College of the Pacific after three years on the Stockton campus and one year at the School of Dentistry in San Francisco. This special opportunity, combined with the 36-month accelerated program of the dental school, makes

possible the completion of all requirements for both the bachelor's degree and the Doctor of Dental Surgery degree in a total of six years.

Entrance requirements at the freshman level are as follows:

1. A combined SAT of 1,050 with a minimum score of 520 on the verbal portion.
2. A minimum of 3.4 grade point average in high school college preparatory courses.
3. A broad exposure to science and mathematics, including college preparatory courses in chemistry, biology and algebra.
4. Substantial course work in college preparatory English.

Applications of students who meet basic criteria will be considered by a screening committee which will make the final selections.

Graduate Orthodontic Program

The advanced orthodontic education program was instituted in 1971. Classes begin each July for the 24 month graduate program in Orthodontics. Instruction prepares the student to provide excellent treatment based on contemporary biologic orthodontic principles and is recognized for educational eligibility by the American Board of Orthodontics.

Courses of instruction include principles of orthodontics, cephalometrics, biomechanics, craniofacial biology, research methodology, appliance laboratory, psychiatry/pediatrics, statistics, anatomy, oral pathology, research design, oral physiology, cleft lip and palate, comparative appliances, occlusion and gnathology, orthognathic surgery, practice management, and periodontic/orthodontic care. Faculty foster the collegial atmosphere with informal professional relationships and mutual respect among students and faculty.

Clinical instruction and practice are conducted in the School's Orthodontic Clinic in seven one-half day clinics per week including three general orthodontic, two mixed dentition, one adult care, and one surgical orthodontic clinic. Adult patients constitute about one-fourth of a student's case load. Each student receives five new patients and eight to twelve transfer patients in each of the clinics. Students are rotated to the Facial Pain Research Clinic. Fixed appliance treatment employs the edgewise technique although instruction permits a wide latitude of clinical variation based on patient needs. Experience in treating the entire range of orthodontic problems is provided.

Each student engages in an investigative project and completes an acceptable thesis to qualify for the Master of Science in Dentistry degree.

Students are scheduled for didactic and clinical instruction five full days per week, thus full participation is required. While there is no prohibition of weekend private dental practice, students' commitments during the first twelve months of the program seriously limit this opportunity.

International Dental Studies Program

Through the Division of International Dental Studies, the opportunity to earn the Doctor of Dental Surgery degree is available to qualified graduates of foreign dental programs. This 24-month, eight-quarter program provides practical and comprehensive training in dental techniques as practiced in the United States. The Program is described more fully in a separate brochure available from the Program Coordinator, International Dental Studies Program, School of Dentistry, University of the Pacific, 2155 Webster Street, San Francisco, CA 94115-2399, U.S.A.

The International Dental Studies (IDS) curriculum includes preclinical and clinical instruction in dental subjects in the School's traditional D.D.S. program, as well as instruction in pharmacology, oral pathology, differential diagnosis of oral diseases, facial pain, care of disabled, hospital dentistry, and preparation for state licensure, and the behavioral sciences including basic management science, introduction to geriatric dentistry, fundamentals of dental practice, and jurisprudence. IDS students begin clinical patient care in the third quarter and spend the greater portion of their second year in clinical practice.

Complete admission requirements and application procedures are described in the separate brochure available from the Coordinator, International Dental Studies Program. Basic prerequisites for admission are: 1) possession of a dental degree from an accredited foreign dental school, 2) completion of PART I of the Dental National Board Examination with a score of 75 or higher in each section, and 3) for non-native English speaking persons: submission of an acceptable score on the Test of English as a Foreign Language (TOEFL).

Applicants who meet preliminary requirements are required to sit for the technical examination administered by appointment at the School's San Francisco campus. The IDS Program Admissions Committee considers the following factors in selecting applicants for admission: dental school achievement, National Board Dental Examination scores, English language proficiency, performance on the technical examination, professional experience, and advanced degrees.

Advanced Education in General Dentistry Program

The Advanced Education in General Dentistry (AEGD) Program, a one year postgraduate residency, leads to a certificate of completion. Postgraduate students provide advanced, comprehensive dental care for assigned patients, including geriatric individuals and those who are medically compromised and/or developmentally disabled. The major portion of dental service is provided at the School's clinic

under supervision of AEGD and specialist faculty. Residents also learn to provide dental care in the hospital operating room with general anesthesia, and to interact with a variety of health professionals and social agencies to coordinate dental service with other care received by patients with complex medical, emotional, and social backgrounds. Patients are assigned to a resident who is responsible for treating all dental needs of those patients. Residents receive a stipend in 12 equal monthly payments.

The Pacific Presbyterian Medical Center and Hospital, adjacent to the School of Dentistry, provides the hospital based portion of the program. U.O.P. dental faculty participate in medical staff committees, act as consultants for hospitalized patients and in the emergency room, and provide dental care for their patients in the hospital's operating room. AEGD residents may attend medical specialty clinics and seminars and other hospital-sponsored lectures and are assigned to rotations in the anesthesiology, medicine, and dental departments.

The Advanced Education in General Dentistry program starts July 1. Basic prerequisites for admission are graduation from an accredited dental school and submission of all application materials in a timely manner. Required application materials include: completed application form, dean's letter, dental school transcript with academic rank, two or more letters of recommendation, personal statement of goals and objectives, copies of National Board PART I scores, and registration number from the Postdoctoral Dental Matching Program. The AEGD program uses the American Association of Dental Schools' Postgraduate Application Support Service (PASS) application system and the National Dental Matching Program notification program. Application materials for the July entering class must be submitted to the PASS program by October 15 of the year preceding desired matriculation. Complete admission requirements and application procedures are described in materials available from the AEGD Program Director, School of Dentistry.



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- Lucas Underwood, 1946**, Professor of Musicology, Emeritus, 1972.
- Graciela T. de Urteaga, 1963**, Professor of Modern Language and Literature, Emeritus, 1982.
- Stanley G. Volbrecht, 1961**, Professor of Geology, Emeritus, 1989.
- Carl Voltmer, 1948**, Professor of Physical Education and Recreation, Emeritus, 1971.
- William H. Wadman, 1955**, Professor of Chemistry, Emeritus, 1988.
- Patricia Wagner, 1962**, Professor of Sociology, Emeritus, 1981.
- Walter C. Wagner, 1962**, Professor of Economics, Emeritus, 1986.
- Earl J. Washburn, 1946**, Professor of Art, Emeritus, 1984.
- Roy A. Whiteker, 1976**, Dean of the College of the Pacific, Emeritus, 1989.
- John P. Wonder, 1963**, Professor of Modern Language and Literature, Emeritus, 1990.
- Robert R. Winterberg, 1950**, Vice President, Emeritus, 1990.
- Paul H. Winters, 1956**, Professor of Communication, Emeritus, 1989.

CAMPUS BUILDINGS & FACILITIES

Alpha Chi Omega (D, 10)
 Alpha Kappa Phi (D, 6-7)
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Anderson Hall (F, 6-7)
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 Second Floor: Executive Vice President's Office, University Relations Office
 Anderson Y (D-E, 10)
 Art Center (D, 5)
 ASUOP Annex (D, 5)
 ASUOP Office (E, 6)
 Bannister Hall (F, 5)
 Baun Hall (F, 6)
 Bechtel International Center (F-G, 4)
 Bookstore (E, 6)
 Bridge, Donald B. Wood (E, 4)
 Burns Tower, Robert E. (E, 8-9)
 Callison Dining Room (G, 4)
 Career Planning & Placement Center (E, 11)
 Carter House (F, 4)
 Catering (E-F, 6-7)
 Casa Jackson (F-G, 3-4)
 Casa Werner (H, 5)
 Central Receiving (K, 5)
 Chapel, Morris (C-D, 8)
 Chemistry Laboratory Building (K, 6)
 Classroom Building (J, 7)
 Colliver Hall (D, 8)
 Common Room (G-H, 4)
 Community Involvement Program (F-5)
 Computer Center (G, 6)
 Conservatory of Music (F, 9)
 Faye Spanos Concert Hall
 COP Cooperative Education (E, 11)
 Cowell Student Health Center (C, 2)
 Dance Room (J, 4)
 Delta Delta Delta (C, 7)
 Delta Gamma (C-D, 7)
 Drama & Theatre Arts-Studio Theatre (J, 5-6)
 Duplicating (K, 4)
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 Eiselen House (G, 3)
 Elbert Covell Dining Hall (G-H, 4-5)
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 Field House (G-H, 2)
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 George Wilson Hall (G, 5)
 Gold Room (F, 6)
 Grace A. Covell Hall (D, 7)
 Grocery Store (E, 6)
 Gymnasium (F-G, 5)
 Hand Hall (D-E, 6)
 Harris House (D-E, 10)
 Health Center, Cowell Student (C, 2)
 Hydraulics Laboratory (F, 6)
 Jessie Ballantyne Hall (G, 4)
 John Ballantyne Hall (F, 4)
 Kappa Alpha Theta (C, 7)
 Khourey Hall (F-G, 6)
 Kjeldsen Pool (I-J, 2)
 Knoles Field (H, 3)
 Knoles Hall (E, 7)
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 William Knox Holt Library (F, 8)
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 Locker Rooms (K, 3)
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 Mail Room (K, 4)
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McCaffrey Center (E, 6)
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 Second Floor: Restaurants, ASUOP, Gallery, Conference Room
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 Music Annex II (E-F, 4-5)
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 Conservatory (F, 9)
 Owen Hall (F, 5)
 Quonsets (E-F, 4-5)
 Rehearsal Hall (F, 8)
 Music Studios (E-F, 8-9)
 Olson Hall (K, 6)
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 Recital Hall (F, 8)
 Redwood Room (E, 6)
 Regents' Dining Room (D-E, 10)
 Rehearsal Hall (F, 8)
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 Ritter House (G, 3-4)
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 Weber Memorial Hall (E, 8)
 Wemyss House (G-H, 3-4)
 Wendell Phillips Center (G-H, 6-5)
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 Z Building (I-J, 4)
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 Vice Presidents
 Academic (E, 7)
 Executive (E-F, 6-7)
 Financial (F, 6)
 Institutional Advancement (F, 6-7)
 Student Life (E, 7)
 Admissions (E, 7)
 Alumni and Parents (E, 8-9)
 Athletic Director (F-G, 5)
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Computer Services (G-H, 5)
 Dean of Students (E, 7)
 Development (E, 8-9)
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 Holt-Atherton Pacific Center for Western Studies (F, 8)
 Housing (F, 5)
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 Biological Sciences (J-K, 7)
 Black Studies (G-H, 5)
 Chemistry (K, 6)
 Classics (G-H, 5)
 Communication Arts (D-E, 6)
 Communicative Disorders (J, 4)
 COP, Co-op/Intern Programs (F, 6)
 Drama (J, 5-6)
 Economics (G-H, 5)
 Engineering (E-F, 6)
 English (E, 7)
 Geology & Geography (E, 5)
 History (G-H, 5)
 Mathematics (J, 7)
 Modern Language & Literature (G-H, 5)
 Philosophy (H, 4)
 Physical Education & Recreation (F-G, 5)
 Physics (J, 7)
 Political Science (G-H, 5)
 Psychology (J-K, 5)
 Religious Studies (C-D, 8)
 Sociology (G-H, 5)

School of Business & Public Administration (E, 8)**Conservatory of Music (F, 9)****School of Education (H, 6)****School of Engineering (F, 6)****School of International Studies (F-G, 4)****School of Pharmacy (A, 5)****Graduate School (E, 7)****University College (E, 11)****School of Dentistry**

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McGeorge School of Law

3200 Fifth Avenue
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In front of Conservatory of Music. Visitor permit required and available in the Burns Tower Lobby. Permit not required on weekends or after 4:00 p.m.



ACADEMIC CALENDAR — 1991-92

1991 Fall Semester (All Schools & Colleges except Pharmacy)

Freshman Orientation & Registration

Session 1	June 22-24
Session 2	June 29-July 1
Session 3	August 27-29
Foreign Student Orientation	August 24-26
Transfer Orientation and Registration	August 31-September 1
Labor Day Holiday	September 2
†Registration — All Students	September 3-5
Classes Begin	September 4
Late Registration (with late fee)	September 6-18
†Last Day To Add Classes	September 18
†Last Day for Pass/No Credit or Letter	
Grade Option	September 18
Deadline for Application for Graduation	October 1
Last Day to Receive Applied Music Refund	October 4
Fall Holiday	October 18
Last Day for Tuition Refund	October 18
†Last Day To Drop Fall Classes	October 23
*Advising for Spring Semester	October 28-November 15
*†Sign-in for Spring Classes	November 16
Thanksgiving Vacation	November 27-29 (8:00 a.m.)
Classes Resume	December 2
Classes End	December 13
Final Examination Period	December 16-20
Fall Graduation Date	December 20

1992 Spring Semester (All Schools & Colleges except Pharmacy)

Foreign Student Orientation	January 23-24
New Student Orientation	January 25-26
†Registration — All Students Except Pharmacy (see Pharmacy calendar)	January 27-29
Classes Begin	January 28
Late Registration (with late fee)	January 30-February 11
†Last Day To Add Classes	February 11
Last Day for Pass/No Credit or Letter	
Grade Option	February 11
Presidents' Day Holiday	February 17
Last Day to Receive Applied Music Refund	February 21
*Advising for Fall Semester	March 9-April 3
Last Day for Tuition Refund	March 12
†Last Day to Drop Spring Classes	March 18
Spring Break	March 23-27
Classes Resume	March 30
*†Sign-in for Fall Semester Classes and Summer Sessions	April 4
Report of Estimated Grades of Less than C for Graduating Seniors	April 10
Final Date to Present Approved Thesis or Dissertation	April 17
Classes End	May 15
Final Examination Period	May 18-22
Commencement Weekend	May 23-24

School of Pharmacy Calendar

1991 Fall Semester

Registration, Returning Students	September 3-5
Labor Day Holiday	September 2
Classes Begin	September 4
Late Registration (with late fee)	September 6-18
Last Day to Add Classes	September 18
Deadline for Application for Graduation	October 1
Fall Holiday	October 18
Last Day for Tuition Refund	October 18
Last Day to Drop Fall Classes	October 23
Advising for Winter Semester Classes	November 4-14
Sign-in for Winter Semester Classes	November 15
Sign-in for UOP Classes (Spring)	November 16
Thanksgiving Vacation	November 27-29 (8:00 a.m.)
Classes Resume	December 2
Classes End	December 6
Final Examination Period	December 9-13

1992 Winter Semester

Registration	January 6-7
Classes Begin	January 6
Late Registration (with late fee)	January 8-21
Martin Luther King Holiday	January 20
Last Day to Add Classes	January 21
Presidents' Day	February 17
Last Day for Tuition Refund	February 19
Last Day to Drop Winter Classes	February 21
Advising for Spring & Fall Classes	March 16-April 2
Spring Break	March 23-27
Classes Resume	March 30
Sign-in for Spring & Fall Classes	April 3
Sign-in for UOP Classes (Fall)	April 4
Classes End	April 14
Final Examination Period	April 15-22
Commencement	May 23-24

1992 Spring Semester

Registration	April 27-28
Classes Begin	April 27
Late Registration (with late fee)	April 29-May 11
Last Day to Add Classes	May 11
Memorial Day Holiday	May 25
Last Day for Tuition Refund	June 10
Last Day to Drop Spring Classes	June 12
July 4th Holiday	July 3
Classes End	July 28
Final Examination Period	July 29-August 4

* Limited to currently enrolled students.

† Advisers should arrange to be available on this day.

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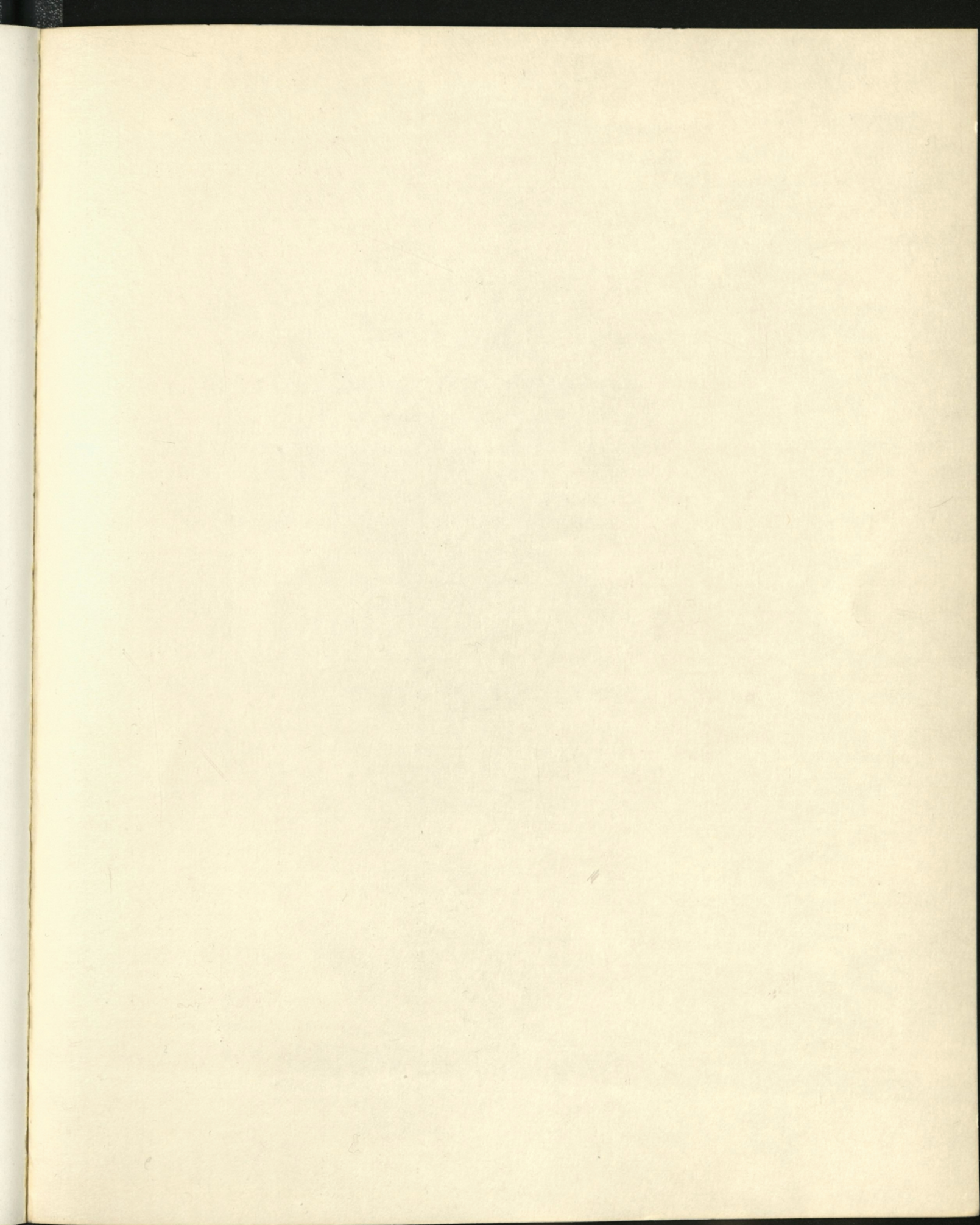
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