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2006/2007 University of the Pacific General Catalog

University of the Pacific

university of the pacific

general catalog 2006 • 2007

Academic Divisions of the University

College of the Pacific (Arts & Sciences)
Conservatory of Music
Eberhardt School of Business
Gladys L. Benerd School of Education
School of Engineering and Computer Science
School of International Studies
The Thomas J. Long School of Pharmacy and Health Sciences
Graduate School
Arthur A. Dugoni School of Dentistry
McGeorge School of Law
Center for Professional and Continuing Education

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3601 Pacific Avenue
Stockton, California 95211

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Accreditation

The University of the Pacific is accredited by the Accrediting Commission for Senior Colleges and Universities of the Western Association of Schools and Colleges (WASC), located at 985 Atlantic Ave., Suite 100, Alameda, CA 94501; 510-748-9001.

Stockton Campus

Procedures, rules, regulations, services, tuition, etc., vary on the three campuses of University of the Pacific. This catalog states those for the schools and colleges of the University located on the Stockton campus. The University reserves the right to change fees, modify its services or change its programs at any time and without prior notice being given. 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.

Statement of Non-discrimination

The University does not discriminate on the basis of race, gender, sexual orientation, national origin, ancestry, color, religion, religious creed, age, marital status, cancer-related or genetic-related medical conditions, disability, citizenship status, military service status, and any other status protected by law.

In accordance with the above University policy and in compliance with all applicable laws, all educational services will be provided and all employment decisions (including recruitment, training, compensation, benefits, employee relations, promotions, terminations) will be made without regard to the individual's status protected by law. To the extent provided by law, the University will reasonably accommodate qualified individuals with disabilities which meet the legal standards for documentation, whenever the individual is otherwise qualified to safely perform all essential functions of the position.

This notice is given pursuant to the requirements of Title IX of the Educational Amendments of 1972, Title VII of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973 and amendments and other laws, orders and regulations governing discrimination. The University of the Pacific has designated the Director of Human Resources to coordinate the University's efforts to comply with laws, orders and regulations governing discrimination. Any person having a complaint should contact in writing: The Director of Human Resources, University of the Pacific, 3601 Pacific Avenue, Stockton, CA 95211.

Because the catalog is compiled well in advance of the academic year it covers, changes in programs, policies, and the academic calendar may well occur.

Updates are made on the electronic version of this publication and can be found at insidepacific.uop.edu

All catalog information is subject to change without notice or obligation.

a history of innovation

The University of the Pacific's mission is to provide a superior, student-centered learning experience integrating liberal arts and professional education and preparing individuals for lasting achievement and responsible leadership in their careers and communities.

University of the Pacific was established by pioneer Methodist ministers in 1851 as the first chartered institution of higher learning in California. Since its founding Pacific has earned widespread recognition for its student-centered approach to education, its many firsts and innovations, and the accomplishments of more than 50,000 living alumni.

As an innovator and leader in higher education, Pacific provided the West Coast with its first medical school in 1858 (it later became part of Stanford and today is California Pacific Medical Center), its first coeducational campus in 1871, its first conservatory of music in 1878 and the nation's first "cluster colleges" in the 1960's. Pacific was also the nation's first 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. By moving from San Jose to Stockton in 1924, Pacific became the first and only private university in the Central Valley. Shortly after occupying the new campus, Pacific established one of California's earliest schools of education. It was renamed the Gladys L. Benerd School of Education in 1992 in honor of the alumna's endowed gift.

As a mark of stability in administration, only five presidents have headed the University since locating in Stockton. Dr. Donald V. DeRosa began his service in 1995 as the fifth president since 1924 and the 23rd since 1851.

The University experienced its greatest growth and an expansion into graduate professional education under the administration of Dr. Robert Burns (1947-1971). In 1955 the School of Pharmacy was opened (now the Thomas J. Long School of Pharmacy and Health Sciences in honor of the benefactor and regent who with his brother Joseph Long founded Longs Drugstores) and in 1956 the graduate school. The School of Engineering was established in 1957 and five years later the College of Physicians and Surgeons, a school of dentistry founded in San Francisco in 1896, merged with the University and became the San Francisco campus. In 2004 the dental school was renamed the Arthur A. Dugoni School of Dentistry to honor the extraordinary leadership of its Dean from 1978, based on a $50 million gift from alumni and friends.

A new concept in higher education in the United States found expression in the establishment of cluster colleges in the 1960's that adapted the Oxford and Cambridge model to an American setting. The colleges integrated faculty and students into living and learning communities. The first, Raymond College, was established in 1962. A second followed in 1963 with the opening of Elbert Covell College, the first bilingual-bicultural college in the country. A third, Callison College, was established in 1967 and focused on non-western studies with a year of study in an Asian culture. The cluster colleges were ended in 1982. However, their emphasis on a global education continued in a new School of International Studies, the first university-based undergraduate school of international studies in California. The learning community concept of the cluster colleges was strengthened in College of the Pacific, the liberal arts core of the University recognized for preparing responsible citizen leaders who will contribute in lasting ways to careers and communities.

Continuing expansion of graduate professional education, McGeorge College of Law, an independent law school founded in Sacramento in 1924, merged with the University in 1966 as the McGeorge School of Law. In the fall of 1977, the department of business administration in College of the Pacific was reorganized as the School of Business and Public Administration. In 1995 it was renamed Eberhardt School of Business in honor of the Eberhardt family's endowed gifts. In 1985 programs designed specifically for adult "re-entry" students were reorganized and revitalized through University College, with further reforms and expansion a decade later into a Center for Professional and Continuing Education.

As the University's Sesquicentennial Year of 2001 approached, a new era of expansion and innovation began. In 1995 Pacific offered the first four-year guarantee whereby students were assured completion of the bachelor of arts degree in four years. Accelerated programs were initiated by President DeRosa to enable students to complete undergraduate studies in combination with professional degrees in pharmacy, law, dentistry and business in one to three fewer years.

In 1999 alumni Dave and Iola Brubeck announced that their papers, recordings and memorabilia, a treasure of historic American music and memorabilia, would be deposited at Pacific for study and research. In response to this gift and in honor of a legend in jazz and American music, President DeRosa announced formation of The Brubeck Institute for the study, promotion and performance of American music.

Adding emphasis to the Sesquicentennial Celebration in 2001, Pacific completed or undertook more that $40,000,000 in new facilities, including a 250-person residence hall, the first in more that two decades, an Art and Geosciences Center, a science building and a $21-million health sciences learning center and clinic. Since then, the University has added a second new residence hall, greatly expanded the fitness center, completed a new Humanities Center and an addition and renovation of the library.

Pacific's progress and leadership in higher education have earned national recognition. The University is ranked in the top four "best values" of doctoral level universities on the West Coast, is included in many top ten or top five lists for attention to students, financial aid, career placement and student counseling, and for the Stockton campus, which was ranked as sixth most beautiful campus in the nation.

The vision statement of the University states, "University of the Pacific will be among the best national universities, known for linking liberal arts and professional education at both undergraduate and graduate levels through distinctive, innovative curricular and co-curricular programs of exceptional quality and high value. Pacific will become a national leader in the creative use of experiential learning and leadership development."

university of the pacific

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Introduction

The University of the Pacific is committed to educating students by offering baccalaureate and post-baccalaureate degrees in the liberal arts and sciences and in professional education. Through studies devoted to comprehensive learning, specialized study, scholarly and creative activity and lifelong educational development, the University strives to provide a total educational environment for students – one that encourages maximum academic, personal and social development in an intellectual community of students, faculty and staff.

An undergraduate's formal education at Pacific consists of three parts:

1) the major program or area of specialization,

2) the General Education Program, which consists of the Pacific Seminars and the Breadth Program, and

3) 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 general education program is designed to provide undergraduate students with common intellectual experiences and breadth of knowledge regardless of their areas of specialization. These goals are engendered through exposure to different ways of organizing knowledge and the development of competencies such as writing, critical and quantitative reasoning, retrieval of information, oral communication, understanding diversity, and working in groups. 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 is 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. Students are encouraged to participate in service learning and in work-based learning such as internships.

The University's main 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 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 Stockton campus student body of approximately 4,600 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 nearly 70% of the students live on, or within a block or so of the campus, creates 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.

Academic Divisions of the University

The University's schools and colleges 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 later in this catalog.

College of the Pacific (Liberal Arts and Sciences)

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 division 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. 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 inter-disciplinary programs which cut cross traditional fields of knowledge.

Conservatory of Music

Students in the Conservatory of Music may choose among majors in composition, performance, music education, music history, music therapy and music management. In addition to these programs currently pursued by 200 students, the Conservatory provides the opportunity for students throughout the University to develop or refine musical skills through courses in applied music.

Eberhardt School of Business

Students in the Eberhardt School of Business are educated for management positions in business, government and not-for-profit organizations. Approximately 600 students are enrolled in the School's undergraduate and MBA programs in business administration.

Gladys L. Benerd School of Education

The Gladys L. Benerd School of Education prepares students for careers in teaching, counseling and administration at the elementary and secondary school levels. Some 400 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.

School of Engineering and Computer Science

The School of Engineering and Computer Science, with some 500 students, offers nine baccalaureate programs: Bioengineering, civil, computer, electrical, and mechanical engineering; engineering physics, engineering management; computer science and computer information systems. All degree programs combine academic and practical training with the engineering curricula requiring a full year of paid engineering related work experience..

School of International Studies

The School of International Studies, the newest school on campus, has 140 students enrolled. All students in the School must spend at least one semester abroad and learn a foreign language. They may pursue one of five majors: international and regional studies, international relations, global economic relations, international environmental policy, or a self-designed major.

Thomas J. Long School of Pharmacy and Health Sciences

The School of Pharmacy and Health Sciences offers the Doctor of Pharmacy degree. Some 1,025 students are enrolled in the School, including about 350 undergraduates pursuing pre-pharmacy studies in preparation for beginning the professional program. The Department of Speech-Language Pathology is housed in the School as well as the graduate program in Physical Therapy.

Graduate School

The University's post-baccalaureate division, the Graduate School, offers study in teacher credential programs, master's degrees in 14 disciplines, and doctorates in education and pharmaceutical sciences. Students who hold a baccalaureate degree from an accredited college or university with a qualifying grade point average and appropriate graduate-level entrance examination results, may pursue Graduate School programs. These include California teaching credentials, the degrees of Education Specialist, Master of Arts or Science, Master of Business Administration, Master of Music, Master of Education, Doctor of Education, or the Doctor of Philosophy. Dual professional-graduate degree programs exist for the M.B.A./J.D. and Pharm.D./M.S. Pharm.D./Ph.D. and chemistry graduate programs are included in the Pharmaceutical Sciences Graduate Program.

McGeorge School of Law and Arthur A. Dugoni School of Dentistry

In addition to these schools and colleges on the Stockton campus, the University includes the McGeorge School of Law, located in Sacramento, and the Arthur A. Dugoni School of Dentistry in San Francisco. Some 1,100 students are enrolled at McGeorge in both day and evening programs while the dental school has an enrollment of about 470 students.

General Education

Pacific's general education prepares students for a lifetime of reflection and for the application of knowledge to everyday life. It liberates the individual and energizes the citizen. The program balances the depth of study in a major with a broad introduction to different academic areas and disciplines. It exposes students to various ways critical thought is organized and develops fundamental skills—such as writing, analytical thinking, critical reading, quantitative analysis, and oral presentation skills—that are transferable to any kind of study. The general education program has three main components: the Pacific seminars, the breadth program, and fundamental skills. Refer to the general education section for additional information.

Pacific Seminars and Breadth Program

Freshmen are required to take Pacific Seminars I and II in their first year and Pacific Seminar III in their senior year. A 'freshman' is defined as a student who has earned fewer than 16 units of transferable, classroom college level work completed after high school graduation. In addition to the Pacific Seminars, students must complete six or nine courses in the breadth program. Students should check with their school or college dean's office for specific breadth program requirements. With the guidance of their adviser, students select courses from the categories below:

I. The Individual and Society

- I.A Individual and Interpersonal Behavior
- I.B Society and Culture in the United States
- I.C Society and Cultures Outside the United States

II. Human Heritage

- II.A Literature, Letters and Language
- II.B Fundamental Human Concerns
- II.C Practice and Perspective in the Visual and Performing Arts

III. Natural World and Formal Systems of Thought

III.A Life and Physical Laboratory Sciences

III.B Formal Systems of Thought

III.C Science, Technology and Society

By taking classes in these areas, the student will acquire capacities and habits of thought that 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 bachelor's and first professional degree students on the Stockton campus must complete a minimum of two courses in each category. All students must complete a course in categories III.A and III.B. College of the Pacific students must complete three in each category and one in each subdivision.

Fundamental Skills

The University evaluates students to identify those with deficiencies in reading, written expression and quantitative skills. These students are required to take courses designed to improve their understanding and performance in these areas. The reading, 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 provides the student with a wide choice in the selection of electives. The University's policy is to allow students in any program to take courses in any other school or college on campus, 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.

Accelerated Programs

The University offers joint-degree programs between liberal studies and professional programs which result in accelerated learning. Requirements include varying degrees of demands on the student to take certain courses and maintain grade point averages. This educational linking is offered through the Eberhardt School of Business with the Five-Year Bachelor's/M.B.A., the School of Engineering offers an Accelerated Engineering Program (AEP) in four years and offers an Engineering Management/MBA program, the School of Pharmacy and Health Sciences offers a Pre-Pharmacy Advantage Program, the School of Dentistry offers a Pre-Dental/D.D.S. accelerated program, and the McGeorge School of Law offers a 3+3 Bachelor's/J.D. or a Four-Year J.D./M.B.A. Details on these programs can be found in each school's section later in this publication.

Admission Requirements

The University of the Pacific seeks applications from students who have shown by past achievement that they have attained a high level of scholarship, initiative and maturity, who possess good character, and have 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. The University is interested in a student body characterized by diverse ethnic, religious, economic and geographic backgrounds.

Please refer to the Office of Admission website for the most current policies regarding all subjects in the following section of this catalog. The website address is www.pacific.edu/admission.

Undergraduate Admission

www.pacific.edu/admission

Application Priority Dates

www.pacific.edu/keydates

Fall Freshman Applicants

November 15 Application Priority Date

- All Pre-Pharmacy Applicants/Notification: March 15
- All Pre-Dental Applicants/Notification: March 15
- All Dental Hygiene Freshman Applicants/Notification: March 15
- All Founders Scholarship Applicants/Notification After Admission
- All Early Action Admission Program Applicants (see below)/Notification: January 15

January 15 Application Priority Date

- Regular Admission Program (all majors not listed above) / Notification: March 15

Fall Transfer Applicants

June 1

- All Transfer Applicants

Spring Freshman & Transfer Applicants

September 1

- Dental Hygiene Transfer Applicants / Notification: Rolling

November 15

- All applicants (excluding Dental Hygiene applicants)/Notification: Rolling

Applications may be considered after these dates but space may be limited. Because of certain special procedures in the handling of applications for international students, these applications should be completed earlier than U.S. applications. Candidates for the Doctor of Pharmacy program should refer to the Pharm.D. website: www.pacific.edu/pharmd for deadline information.

Applications are reviewed once they are complete. Most students will be mailed notification in mid-March. The University of the Pacific adheres to the May 1 national candidates reply date. It is on or before this date that the University expects a reply to its offer of admission for the fall semester.

Early Action Admission Option

The University of the Pacific offers a non-binding 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 Admission postmarked by November 15. Early Action applicants will be notified in mid-January. Those admitted under this plan have the same National Candidates Reply Date of May 1 as all other admitted students.

Interviews

Prospective students are encouraged to visit the campus, but formal interviews are not usually required for freshman or transfer applicants (except Dental Hygiene, Pharm.D, and Organizational Behavior). 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.

Campus Visits

www.pacific.edu/visitus

Prospective students are invited to visit the campus as guests of the University. It is recommended that prospective students visit the campus when classes are in session, avoiding weekends or University vacation periods. (See Academic Calendar) The Office of Admission will arrange a schedule for a prospective student's visit which may include appointments with faculty members, an admission counselor appointment, a financial aid counselor appointment (depending on availability), a tour, and/or a group information session. The opportunity for high school seniors to spend the night in a residence hall is also available on a limited basis.

For individuals or small groups, student-led tours are available most days, Monday through Friday, morning and afternoon as well as some Saturday mornings. Tours and informational sessions for larger groups are also available, but must be planned at least two weeks in advance with the Office of Admission. During the academic year the Office of Admission is open most days Monday through Friday from 8:30 a.m. to 5:00 p.m. and on selected Saturdays from 9:00 a.m. to noon. Summer hours may differ. Saturday visits and tours are by appointment only. Please go to www.pacific.edu/visitus or call the Office of Admission to schedule a visit to campus.

Appointments, Information and Forms

For information on an area of specific interest, for application forms, or for an admissions appointment, use any of the following information to reach the Office of Admission:

Office of Admission,
University of the Pacific
3601 Pacific Avenue
Stockton, CA 95211
Telephone: (209) 946-2211
Fax: (209) 946-2413
Website: www.pacific.edu/admission
E-mail: admission@pacific.edu

Admission of Freshman Students

Regular Admission

Freshman applicants are those who are either applying while seniors in high school or those who have not taken any college courses since earning their high school diploma or its equivalent. Verification of graduation from an accredited secondary school is required prior to the beginning of the first term of attendance. Exceptions may be made for those who have passed either the General Education Development (GED) Test or the High School Proficiency Exam.

Special emphasis is placed on the coursework selected, the grades achieved in those courses, and the cumulative grade point average. Supporting recommendation from a school counselor or teacher is also important. In addition, the Admission Committee reviews the results of either the SAT or the ACT.

The essay submitted with the University of the Pacific Application is carefully read, and the committee looks at co-curricular activities. Applicants are selected for admission only after a careful review of the entire application file.

A Completed Application Includes:

1) Application Form and Fee:
www.pacific.edu/apply

Option I: On-line application. The application must be filled out and submitted by the applicant. There is a $30 processing fee for an application submitted on-line. A fee waiver is available for students in low-income situations, children of University employees, and children of registered alums.

Option II: Paper application. The form must be completed, dated and signed by the applicant. The processing fee for a paper application is $60, payable to University of the Pacific. Please write the student's name and birth date on the check. See Option I (above) for information on fee waivers.

2) Essay: A 500 word essay is required. Please include your name and birth date on each page.

3) Recommendation: One academic recommendation from an academic teacher, counselor or adviser is required.

Those recommending an applicant may use the online form at www.pacific.edu/recommendation or send a written recommendation on official letterhead.

4) Transcripts: An official, sealed copy of transcripts for all high school and/or college coursework including courses offered by extension or correspondence, is required. Failure to acknowledge and submit all records is grounds to deny or revoke admission, or for dismissal from the University or revocation of degrees earned. Applicants must also submit transcripts for any college work taken while still in high school. Transfers with more than 30 transferable semester units do not need to have high school transcripts sent, unless requested. Final official transcripts must be submitted prior to the first day of classes, and must show satisfactory work or the University has the right to revoke the offer of admission.

5) Test Score Policies for Applicants to the Fall 2006 or Spring 2007 semesters

- Applicants must submit scores from the SAT or/and ACT. Pacific will accept all versions of the SAT (old or new). Pacific requires the optional writing section of the ACT for each ACT test submitted.
- If the applicant has taken the SAT or ACT multiple times, Pacific will accept the highest combination of subscores from all SAT attempts and highest combination of all subscores from all ACT attempts.
- Pacific requires that the SAT or ACT scores be sent electronically from the College Board (SAT) web site, www.collegeboard.com or the ACT web site, www.act.org. Paper score reports or scores listed on high school transcripts will not be accepted.
- Scores received in January from the December SAT or ACT tests are the last scores that will be used for admission or scholarship consideration for fall applicants. Students for whom later tests are the first and only test taken are exempt from this policy.

Special Admission Requirements

- **Music Applicants:**
www.pacific.edu/music
In addition to academic requirements, those applying for admission to the Conservatory of Music must present evidence of music talent and achievement by performing an audition on the principal performing medium. Those planning to major in composition must also submit an original composition. Auditions are held at the Conservatory at regular intervals throughout the academic year. Students unable to appear in person may substitute a recorded audition. Audition information is available at www.pacific.edu/music or by calling the Conservatory of Music at (209) 946-2418.
- **Dental Hygiene Applicants:**
www.pacific.edu/dentalhygiene
Strong candidates applying for the dental hygiene program will be invited to campus for an interview after items one through five (above) have been received.

  Dental Hygiene applicants have separate application deadlines (September 1 for Spring or November 15 for Fall). After an initial review, strong dental hygiene candidates will be invited for interviews that are required for admission into the 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 solid college preparatory program. Generally speaking, preparatory 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 algebra I, II and geometry; at least two years of laboratory science in at least two disciplines (biology, chemistry, Earth science or physics); at least two years of the same foreign language; three years of social science; one year of fine or performing arts; 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, dentistry or pharmacy should include biology, chemistry and physics as well as advanced mathematics in their secondary school program. (See chart for recommended course of study.)

Recommended Courses

Course	Science & Technical	All Others Majors
English	4 years	4 years
Fine Arts/ Performing Arts	1 year	1 year
Foreign Language (one)	2 units	2 years
Social Science	2 years	3 years
Mathematics*	4 years	3 years
Laboratory Science**	3 years	2 years
Academic Electives***	1 year	1 year

** Suggested math sequence for science and technical majors: algebra, geometry, algebra II, trigonometry or calculus. Minimum suggested math sequence for all other majors: algebra, geometry, algebra II.*

*** Biology, chemistry and physics are recommended for all students pursuing science and technical disciplines.*

**** Academic elective courses should be in advanced foreign languages, mathematics, laboratory sciences or other solid preparatory courses.*

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 Admission 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.

Advanced Placement, International Baccalaureate and College Credits Earned While In High School

College credit (four units per examination) may be granted to students who achieve scores of three, four or five on Advanced Placement examinations and/or scores of four through seven on International Baccalaureate exams taken at the higher level. In some cases, general education credit will be granted for Advanced Placement examination scores of four or five or International Baccalaureate exam (higher level) scores of five through seven– up to a total of eight units. In addition, students who have taken college courses prior to high school graduation will receive credit toward University of the Pacific graduation, as long as the credit is transferable, is earned at an accredited college and is awarded college credit on a transcript generated by that college. The purpose 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. (See also the CLEP information below.)

College-Level Examination Program (CLEP)

College credit may 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 from the Office of Admission.

Maximum Units by Examination

A maximum of 20 semester units will be accepted from any or all of the following: courses taken in regionally accredited correspondence schools, extension courses, or credit by examination. This limit does not apply to credit earned through Advanced Placement (A.P.) Examinations or the International Baccalaureate (I.B.) Program.

Admission of Undergraduate Transfers

www.pacific.edu/transfer

Regular Admission

Transfer students receive consideration for admission to Pacific under two options.

Option 1 – (Eligible for admission from high school): If a student would have qualified for admission to Pacific as a high school senior, has less than 30 transferable semester units, and is in good academic standing at the college in which they are currently enrolled, then he/she is generally eligible for admission. For students who would have qualified as freshmen, there is no minimum number of units required for transfer.

Option 2 – (Not eligible for admission from high school): If a student would not have qualified for admission to Pacific as a high school senior, he or she may apply for transfer to Pacific after completing at least one year of full-time study (30 or more transferable semester units) at another two- or four-year accredited college or university. The minimum grade point average for consideration is 2.80.

Generally, 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, or have been suspended or disqualified. Special consideration may be given in unusual circumstances.

A Completed Application

Please refer to the information under this heading in the Freshman Admission section above.

Transferable Courses and Unit Limitations

- 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.
- Courses taught at a community college are not acceptable to replace upper division courses at Pacific.
- The maximum number of units that will be accepted from a community college is 70 and no community college credit will be accepted after a student has completed 70 units from all institutions attended.
- A course with a grade of C- or below will not transfer to Pacific. No units will be awarded for that course.

- If a student repeats a course in which a C- or below was earned, the two grades will be averaged, and a new GPA for the course will be calculated.
- If a student repeats a course in which a C or higher is earned, the second attempt will not be calculated in the GPA. No units will be awarded for the repeated course.

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 determined that they have the potential for satisfactory college work.

Admission of International Students

www.pacific.edu/international

The University of the Pacific welcomes applications from international students and provides complete support services for them through International Programs and Services. The University is authorized to issue appropriate immigration documents to international students for immigration purposes and provides immigration services to enrolled students.

International applicants whose native language is not English are required to provide scores from the Test of English as a Foreign Language (TOEFL). The minimum score accepted for undergraduate admission is 475 (paper-based), 150 (computer-based) or 52 (iBT). The minimum TOEFL score for professional Pharm.D. admission consideration is 550 (paper-based), 213 (computer-based) or 80 (iBT). SAT-I: Reasoning Test results are not routinely required of international students applying from outside the U.S. unless they have graduated from an American-style high school, or if they are interested in consideration for the Accelerated Pre-Dental or Pre-Pharmacy Advantage Programs.

In order to comply with regulations of the United States Citizenship and Immigration Service, the University of the Pacific requires international 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 international students will be provided upon request.

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 Veterans

The University of the Pacific encourages veterans to apply for admission and is approved under Federal and State laws for the training of veterans. Satisfactory completion of a period of military service will be taken into consideration in the evaluation for admission.

Accelerated/ Combined Programs

Pre-Pharmacy Advantage Programs

www.pacific.edu/prepharm

Pacific offers three options which provide for guaranteed admission into our Professional Pharmacy (Pharm.D.) Program, if all pre-pharmacy advantage requirements, including courses taken in sequence at Pacific and minimum GPAs, are met and the formal pharmacy interview (which includes a writing sample) is passed. The current university minimum GPA requirement needed as one part of advancing from any of these Pre-Pharmacy Advantage Programs into our Professional Pharmacy Program is 2.70 overall and 2.70 in selected math/science courses.

The implementation of specific admission criteria for the Pre-Pharmacy Advantage Program are meant to ensure that students have the appropriate time to successfully prepare for advancement into the Professional Pharmacy Program.

The following minimum criteria for consideration are valid for students entering in the Fall semester 2006. University of the Pacific reserves the right to change criteria for freshmen entering in subsequent years.

Five-Year (2+3) Pre-Pharmacy/Pharm.D. Option

Freshmen are admitted directly into the Pre-Pharmacy Program in the School of Pharmacy and Health Sciences. After two years, they advance into the Pharm.D. Program if they have fulfilled all pre-pharmacy advantage requirements. Minimum Criteria for consideration: High school GPA of 3.6 (on a 4.0 scale) and either a combined SAT Reading and Math score of 1250 (with at least a 550 in both Reading and Math), or an ACT composite of 27.

Six-Year (3+3) Pre-Pharmacy/Pharm.D. Option

Freshmen are admitted directly into the Pre-Pharmacy Program in the School of Pharmacy and Health Sciences. After three years, they advance into the Pharm.D. Program if they have fulfilled all pre-pharmacy advantage requirements. Minimum Criteria for consideration: High school GPA of 3.4 (on a 4.0 scale) and either a combined SAT Reading and Math score of 1150 (with at least a 500 in both Reading and Math), or an ACT composite of 25.

Seven-Year (4+3) Bachelor's/Pharm.D. Option

These pre-pharmacy applicants will be admitted instead into Pacific's arts and sciences division, College of the Pacific, and pursue a Bachelor of Science degree with a major from either the Department of Biological Sciences or the Department of Chemistry. If they complete their bachelor's degree in four years (but no more than five years) they will be eligible to advance into the Pharm.D. Program if they have fulfilled all of the same pre-pharmacy advantage requirements. This option will ensure that these students are on track from the beginning of their college careers to earn, at least, a Bachelor's degree. Minimum criteria for consideration: High School GPA of 3.2 (on a 4.0 scale) and either a combined SAT Reading and Math score of 1050 (with at least a 500 in both Reading and Math), or an ACT composite of 22.

** Please note: There is no formal Pre-Pharmacy Advantage available to a student who attends another institution for a semester or a year or two and then transfers as a science major into Pacific's arts and sciences division. We have excellent undergraduate programs to which transfers are welcome to apply, but once here, these students will compete with those applying from other institutions for space in the Pharm.D. Program.*

Accelerated Dental Programs

www.pacific.edu/predent

Pacific offers three accelerated dental programs to first-time freshmen which combine undergraduate preparation with the only three-year D.D.S. program in the country. Students admitted to any of these programs will be admitted to Pacific's Arthur A. Dugoni School of Dentistry if they meet the requirements outlined in their pre-dental program acceptance letter. A guaranteed interview option for in-school or transfer students also exists. Students will complete their pre-dental courses at Pacific's main campus in Stockton and their professional courses at Pacific's Arthur A. Dugoni School of Dentistry in San Francisco.

Any freshman applicant who selects "pre-dental" from the list of majors on their application for undergraduate admission will automatically be considered for all three programs. Please note that students admitted to the 2+3 program are also automatically admitted into the 3+3 and the 4+3 programs, and those students admitted to the 3+3 program are also admitted to the 4+3 program. It is also important to note that the 2+3 and 3+3 programs do not "accelerate" four years worth of undergraduate study into two or three years. Students in these two programs are taking the same course load as most students on campus, they are simply taking only those specific courses which will meet the requirements to advance to the Arthur A. Dugoni School of Dentistry after two or three years.

The following minimum criteria for consideration are valid for students entering in the Fall semester 2007. Pacific reserves the right to change criteria for students entering in subsequent years.

Five-Year (2+3) Pre-Dental/Doctor of Dental Surgery (D.D.S)

Program allows completion of two years (four regular semesters) of specific pre-dental and general education courses on Pacific's Stockton campus. This is then followed by three years (eight semesters in 36 months) at the Arthur A. Dugoni School of Dentistry in San Francisco. Upon successful completion of the five-year program, the student will earn a D.D.S. degree. Minimum Criteria: High school GPA of 3.7 (on 4.0 scale) and either an ACT composite score of 31 or a combined SAT Reading and Math score of 1350 (with a minimum Reading score of 630). Only students who are coming to Pacific as first-time freshmen are eligible for this program at the time of admission.

Six-Year (3+3) Bachelor's/D.D.S.

Program allows for completion of all pre-dental and general education requirements, and the courses for a major in either Biological Sciences or Chemistry in three years (six regular semesters). The credit from the first year of dental school can then be used to earn a bachelor's degree, and the D.D.S. degree is earned upon completion of the third year of dental school. The minimum GPA and test score requirements for admission into the 3+3 Program are a high school GPA of 3.6 (on a 4.0 scale) and either an ACT composite score of 29 or a combined SAT Reading and Math score of 1270 (with a minimum Reading score of 600). Only students who are coming to Pacific as first-time freshmen are eligible for either of these options at the time of admission.

Seven-Year (4+3) Bachelor's/D.D.S.

Program allows students to major in almost any discipline, while completing all pre-dental and general education requirements, prior to entering the D.D.S. program. Minimum Criteria: High school GPA of 3.5 (on 4.0 scale) and either an ACT composite score of 27 or a combined SAT Reading and Math score of 1210 (with a minimum Reading score of 600). Only students who are coming to Pacific as first-time freshmen are eligible for this program at the time of admission.

Guaranteed D.D.S. Interview Option for In-School or Transfer Students:

In addition to the above programs, any current full-time student (12 units minimum per semester) who completes at least 48 units at Pacific, including significant coursework in the sciences which count toward a science major, will be guaranteed an interview at the University of the Pacific Arthur A. Dugoni School of Dentistry, if they meet the standards (including college GPA and DAT scores) required of someone in the 4+3 program.

Please note: The Office of Admission does not admit students to this program. Any student interested in this option should begin working directly with a pre-dental faculty adviser as soon as they enroll or as soon as they know they are interested in pursuing this option.

Five-Year Bachelor's/MBA

Students who successfully complete the appropriate prerequisite and core business courses may earn a Master of Business Administration (MBA) degree in just one additional year. Business students automatically take the appropriate courses, but students majoring in many other subjects may also meet these requirements with careful planning.

Six-Year (3+3) Bachelor's/Juris Doctorate (J.D.)

This program permits qualified undergraduates to enroll at University of the Pacific's McGeorge School of Law in Sacramento during the fourth year and complete a bachelor's degree at the end of the first year of law school. Applicants should indicate their interest in this program by checking the "3+3 Bachelor's/Juris Doctorate" box on the application form. Students must maintain a 3.4 grade point average in their major and a 3.2 cumulative undergraduate GPA. In addition, students must complete the following requirements prior to enrollment at McGeorge: 43 units of general education; a total of 92 units of credit, of which 60 must be completed at University of the Pacific's Stockton campus; completion of all major courses; a minimum LSAT score within the 50th percentile; a recommendation from the dean of the University of the Pacific undergraduate school/college from which the degree will be received; and completion of the McGeorge School of Law application.

Admission of Professional Pharm.D. Students

www.pacific.edu/pharmd

Students seeking admission to the Doctor of Pharmacy degree program who did not enter Pacific as a freshman through the pre-pharmacy advantage program must have completed a minimum of 64 transferable units prior to matriculation. These units must be in specific courses which meet the University of the Pacific Thomas J. Long School of Pharmacy and Health Sciences requirements. Therefore, no application to the Doctor of Pharmacy program will be accepted unless the applicant has taken, is taking, or plans to take, all of these pre-pharmacy courses prior to enrollment (see specifics in School of Pharmacy section). Students who have not taken organic chemistry or biology within the last seven years must enroll in refresher courses before entering.

Admission to the Doctor of Pharmacy degree program is competitive. Factors considered in the application review include overall grades, math/science grades, difficulty of course loads, academic performance trends, curriculum selection, recommendations, involvement in clubs, organizations and community service, work experience, and a mandatory interview.

All students applying to the Doctor of Pharmacy program must apply through the Pharmacy College Application Service (PharmCAS): www.pharmcas.org. Pacific's application deadlines for this program can be found at www.pacific.edu/pharmd. It is critical that candidates submit all required information in a timely manner. Applications are not reviewed until they are complete. Students completing their files after published deadlines will be considered on a space available basis only. A completed application includes: PharmCAS application and fee, supplemental application form and fee, two recommendations (on required forms), Educational Background Chart, resume, and official transcripts from all colleges and universities attended. Some documents must be sent to PharmCAS and some to Pacific. Students with international coursework are required to submit an evaluation from Educational Credential Evaluators (ECE). Students whose native language is not English may be requested to submit scores from the Test of English as a Foreign Language (TOEFL). The minimum acceptable TOEFL score for admission consideration is 550 (paper-based), 213 (computer-based), or 80 (International Based).

Please visit www.pacific.edu/pharmd for details on application requirements. Direct any questions about the Thomas J. Long School of Pharmacy and Health Sciences to the Coordinator for Pharmacy Admission at (209) 946-2211.

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 this institution provides.

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:

Item	Resident	Non-Resident
Tuition* per school year, 2006-2007 permitting enrollment for 12 to 18 units in each semester	$26,920	$26,920
Health Fee	240	240
Room and Board (including house fee)	8,700	
ASUOP Activity Fee	150	150
McCaffrey & Recreation Fee	40	40
Total, per school year	**$36,050**	**$27,350**
School of Pharmacy and Health Sciences Annual Tuition (Eleven-month program, three terms)		**$40,380**

**Arthur A. Dugoni School of Dentistry and McGeorge School of Law tuition and fee schedules are available by contacting those campuses.*

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 admission or the Business Office.

Expenses for books and supplies, special fees, and personal expenses will usually average approximately $1,900 per term.

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

Tuition – Undergraduate Students (per semester)

All schools except Pharmacy and Health Sciences

Full-time (12 to 18 units)	$13,460
Part-time (9 to 11 units) per unit	1,170
Part-time (1/2 to 8 1/2 units) per unit	930
Excess units above 18 units, per unit	930
Engineering Co-op (full-time) tuition rate	6,730

Tuition – School of Pharmacy and Health Sciences

Full-time (12 to 19 units)	$13,460
Part-time (9 to 11 units) per unit	1,170
Part-time (1/2 to 8 1/2 units) per unit	930
Excess units above 19 units, per unit	930
Pharmacy Clerkship Rotation (full-time)	13,460
Pharmacy Professional Fee*	325

**Required of all undergraduate participants in the professional program with 12 units or more.*

Tuition – Graduate Students (per semester)

16 to 18 units
$13,460

1/2 to 15 1/2 units, per unit	842
Excess units above 18 units, per unit	842

General Fees (per semester)

Fee for Auditors, per class $50

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.

Wellness Center Fee $120

(income tax deductible as health insurance)
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 1/2 to 81/2 units.

ASUOP Activity Fee $75

Required of all students who live in University residence halls and all undergraduates taking 9 units or more; optional for students with 1/2 to 8 1/2 units.

McCaffrey & Recreation Fee $20

Required of all students taking 9 units or more.

Engineering/Computer Science Course Fee $150 (per semester)

Required of all students enrolled in the School of Engineering and Computer Science. Students are exempt from the fee while participating in the off-campus cooperative education program. Existing course fees will continue to apply to all non-majors enrolled in schools courses.

Conservatory Fee $250 (per semester)

Required of all Conservatory Majors entering the University as of Fall 2004.

Applied Music Fees (per semester)

Private lessons* in piano, organ, harpsichord, voice, violin, viola, cello, string bass, guitar, flute, clarinet, oboe, bassoon, trumpet/cornet, tuba, trombone, French horn, percussion, saxophone:

One 1/2-hour lesson per week	$125
Two 1/2-hour lessons per week	250
Three 1/2-hour lessons per week	375
Harp:	
One 1/2-hour lesson per week	125
Two 1/2-hour lessons per week	250
Three or more lessons per week	375

Applied class lessons in piano, harpsichord, harp, voice, guitar:*

One unit applied music class lessons	70

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 prorated 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
Organ practice in auditorium, one hour per week (for advanced students only)	7
Organ practice room rental	15
Harpsichord practice room rental	15
Bass, string, and woodwind rental, each	15

**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
Transcript Fee	4
Thesis Binding Fee, per volume	10
Petition Fee	25
Late Registration Fee	
1st & 2nd calendar day	No charge
3rd & 4th calendar day	15
5th through 10th calendar day	25

11th through 15th calendar day	50
After 15th calendar day	100

Undergraduate 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 nonrefundable after May 1.

Payment of Bills

Tuition and fees are due prior to the first day of each semester. A worksheet reflecting the rates and due dates will be provided by the Student Accounts Office. Students may, if approved by the Student Accounts Office, pay tuition in monthly installments. A Late Payment Fee of $150 will be charged for tuition and fee payments received after specified due date for each semester/term. Monthly payments not paid as scheduled will be subject to additional late fees. If a student withdraws or is dismissed during the semester, all outstanding obligations become due and payable on the termination date. International students do not have the privilege of using the monthly payment plan during their first semester at school.

If payments exceed charges on a student account, the account is said to have a *credit balance*. Credit balances are to be returned to the student or paying party, based on the method of payment. The student account is not to be used as a means for cash advances or payments to third parties. Credit balances resulting from cash or check payments, upon request, will be refunded to the student or paying party. Credit balances resulting from student loans and scholarships, if refundable, will also be refunded to the student upon request. Refunds are given in the form of a check from the University, which are printed twice a week (or according to printing schedules). Credit balances resulting from credit card transactions *must* be credited back to the card, and are *not* refundable in the form of a check.

A dispute of any charge on your student account must be in writing within sixty days from the date of billing. All disputes must be sent to: Student Accounts, 3601 Pacific Avenue, Stockton, CA 95211. If you fail to comply within the sixty day time period, you may forfeit your rights to dispute the charge in the future.

Registration, when accepted by the University of the Pacific, constitutes a financial agreement between the student and the school. Tuition fees and other charges the student incurs including, but not limited to, housing, meal plans, and bookstore charges shall be added to the student account and are considered a loan for an educational benefit.

Students failing to make payments as required will be unable to attend classes or use dining or dormitory facilities. The student understands that all of the above mentioned charges, which may be applied to their account, are due and payable upon receipt of their monthly statement. Any charges not paid as agreed may be subject to deferred and late payment fees. It is the student's responsibility to insure that all financial aid is properly credited to his/her account. Failure to make any of the scheduled payments under the monthly payment plan may result in the student's ineligibility to register for future semesters and any remaining unpaid balance will be transferred to the Student Loan Department for servicing.

Upon transfer to the Student Loan Department, the Student Account Note or balance is subject, but not limited, to principal, interest, late charges, collection fees and any legal fees associated with the collection of the debt. Collection costs shall not exceed 30% of the principal, interest, and late charges at the time of acceleration. No diploma or official transcript of credit will be issued until the University bills and student loans/notes have been paid in full. In addition, all institutional loans or other loans guaranteed by the Federal Government must be in good (current) standing prior to the release of diploma or transcripts of credit.

Refunds

The following refund schedule pertains only to tuition and fee charges incurred while attending the University. Housing and meal plan charges are refunded on a prorated basis.

Refunds are based upon a percentage of calendar days.

Withdrawals before classes begin – No charge.

On first day of class — $100 (or 5%, whichever is less).

Within next six calendar days of a semester – $200 (or 10%, whichever is less).

10% of calendar days 90% refund, 10% penalty.

18% of calendar days 80% refund, 20% penalty.

25% of calendar days 60% refund, 40% penalty.

38% of calendar days 40% refund, 60% penalty.

50% of calendar days 25% refund, 75% penalty.

After 50% of calendar days no refund, 100% penalty.

Calendar days of a semester may vary from semester to semester. For exact dates please contact the Student Accounts Office.

Students who intend to withdraw must notify the University by contacting Student Academic Support Services in Bannister Hall. When a financial aid recipient withdraws during a semester, the student's financial aid award is adjusted according to federal and state regulations and University policy.

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

Financial Aid

The University maintains a substantial student financial assistance program which includes scholarships, grants, loans and job opportunities.

Students who wish to be considered for academic merit-based scholarships are advised to complete the admission application process by the appropriate deadline or priority date. Students seeking other University scholarships, grants, work-study, or loans or whose parents wish to apply for a Federal PLUS Loan must also file a Free Application for Federal Student Aid (FAFSA) and complete other application procedures as instructed by the Financial Aid Office. In addition, financial aid applicants who are legal residents of California and do not already have a bachelor's degree are expected to apply for a Cal Grant. High schools and colleges have information about the Cal Grant programs and application procedures.

FAFSA forms and instructions, including instructions for filing over the Internet, may be secured at a high school, college, or from the University. The priority FAFSA filing date is February 15. Pacific awards financial aid to students who apply after the admission and financial aid priority dates; however, late awards may be less favorable.

A student must be approved for admission as a regular student to an eligible degree or certificate program before financial aid can be awarded and must enroll on at least a half-time basis to qualify for most financial aid funds. Awards are usually made for the entire school year and the amount is divided equally among the number of terms of enrollment. Please note that financial aid eligibility is re-evaluated when a student completes pre-professional work and enters a professional program.

Financial aid at the University is available only to U.S. citizens, permanent residents and other eligible non-citizens. Assistance to students in some post-graduate programs is limited to private loans. Students in some undergraduate programs are not eligible for University funds. Additional financial aid information is available from the Office of Financial Aid.

When a financial aid recipient withdraws during a semester, the student's financial aid is adjusted according to federal and state regulations and University policy.

Academic Requirements

Federal regulations require the Financial Aid Office to ensure that financial aid recipients maintain acceptable academic standing and make satisfactory progress in their programs of study.

Students placed on academic probation are placed on Financial Aid Probation, and students who are academically disqualified are placed on Financial Aid Disqualification. Financial aid recipients are also expected to complete satisfactorily at least 67% of all units attempted and to obtain their degrees within a specified maximum period of full-time study.

For further information, please refer to the Academic Probation and Disqualification Policy Statement in this catalog, and the Satisfactory Academic Progress Policy Statement available from the Financial Aid Office.

Community Involvement Program (CIP)

History

CIP was established in 1969 with the aid of concerned students, community members, University faculty and administrators. The program recognizes the importance of undergraduate education, the unique challenges of under-represented groups and the economically disadvantaged.

CIP remains an integral part of the academic processes and planning under the sponsorship of the Vice President of Student Life and the Office of admission, as the University demonstrates its commitment to serve the needs of local students who need a variety of special criteria. A CIP Advisory Board comprised of faculty, students and community members actively supports the program.

Purpose

CIP provides access and opportunity for low income and other under-represented students, giving qualified local residents an opportunity to attend Pacific by providing tuition scholarships and the needed academic support. The program also offers students leadership training and opportunities, preparing them to return to the community as leaders and productive citizens. CIP maintains relationships with the ethnic communities in Stockton, supporting their educational concerns, as the University continues to be a visible and inclusive part of the community. CIP facilitates individual and group projects throughout the community through an active volunteer service program.

Qualifications

Students selected for CIP must meet University academic requirements for admissions. They must demonstrate a history of volunteerism and concern for social issues in the community. Additionally, they must be first-generation college students, come from low-income historically disadvantaged families, and be under-represented in higher education. They must reside in the Stockton area and be U.S. citizens or legal residents.

For information contact: CIP, Bannister Hall, Office of Student Life, University of the Pacific, Stockton, CA 95211; or phone (209) 946-2436.

Work-Study

University of the Pacific participates in the Federal Work-Study program, which provides employment opportunities for students who demonstrate financial need.

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, but attention is usually given to some or all of the following: academic record, special talents, leadership abilities, vocational objectives and financial need. Academic scholarships may be renewed for full-time enrollment in a bachelor's degree or pre-professional program. Detailed information about scholarship renewal is available from the Financial Aid Office.

Academic Merit-Based Scholarships

Entering freshmen who demonstrate extraordinary scholastic achievement and leadership potential and meet minimum criteria may be nominated by their high schools for Pacific Founders Scholarships, valued at $15,000 per academic year.

Entering students who complete the admission application process by January 15 are automatically considered for the merit-based scholarships listed below.

Freshmen entering the University directly from high school may be considered for Regents Scholarships, valued at $10,000 per academic year, and President's Scholarships, for $6,500 per academic year. Recipients are selected on the basis of grade point average, test scores, and other criteria.

Tri-County Transfer Scholarships, for $15,000 per academic year, are awarded to the top two applicants from each community college in the tri-county area. A minimum college GPA of 3.60 is required.

Distinguished Transfer Scholarships valued at $10,000 per year are awarded annually to five entering transfer students with college GPAs of 3.50 or above.

Students transferring to Pacific with college GPAs of 3.35 or above may be considered for Commended Transfer Scholarships of $5,000.

General Academic Endowed Scholarships

Many of the scholarships listed below provide funding for the Regents', President's, and Bishop's Scholarship programs. Scholarships are also available for students regardless of major. A student will be considered an eligible candidate via his/her application for financial aid and maintaining a 3.0 GPA.

Alumni Board Endowed Scholarship. Established by the Alumni Board in honor of Kara Brewer, past Alumni Director.

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

Laura Tull, Walter Pike Austin, and Henrietta T. Austin Endowed Scholarship.

John N. and Jessie L. Ballantyne Endowed Memorial Scholarships. Established during their lifetimes by these Lodi friends of Pacific.

Gertrude Moore Beans and William Know Beans Endowed Memorial Scholarship. Established by a bequest from an alumna of the Class of 1920.

Lonzo and Julie Beck Endowed Scholarship. Established in memory of her husband.

Gladys L. Benerd Endowed Scholarship. Established by Gladys Benerd.

William and Dorothy Biddick Endowed Scholarship. Established by William and Dorothy Biddick.

Bishop's Endowed Scholarship.

William M. Black Endowed Scholarship. Established by the bequest of a faculty member's father.

Constance Bowen Endowed Scholarship.

Anton Brawthen Endowed Memorial Scholarship. Established by his daughter Clara Brawthen.

Seba M. Bronson Endowed Scholarship. Established with a trust.

Dahl Burnham Endowed Scholarship.

Robert E. Burns Endowed Scholarship. Established in memory of Robert E. Burns, 20th president of the University, by his widow Grace Weeks Burns Baun.

Norman J. Cain Endowed Memorial Scholarship. Established by Dr. Harvey D. Cain in memory of his son.

Central United Methodist Church Endowed Scholarship.

Class of 1927 Endowed Scholarship. Established and supplemented by members of the class of 1927.

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

Herman A. and Margaret P. Clover Endowed Memorial Scholarship. Established by Dr. Haworth A. Clover and his wife Carol in memory of his parents.

Robert L. and Lucy S. Colthart Endowed Scholarship. Established with gifts received from their trust.

Elmer C. and Lena E. Courtney Endowed Memorial Scholarship. Established by Lena C. Courtney.

Grace Covell Endowed Scholarship.

Juanita and Earnie Cronkite Endowed Scholarship. Established with their estate gift.

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

Hugh and Esther Davis Endowed Scholarship. Established with an estate gift.

Robert C. and Olive V. d'Erlach Endowed Memorial Scholarship. Funded by their bequest.

Clifford L. Dochterman Endowed Scholarship. Established to honor him upon his retirement.

Coach Don Edwards Endowed Scholarship. Established with a gift from Mr. Cecil Harp in memory of his wife Joan E. Harp.

Christopher A. and Cora S. Elliott Endowed Scholarship.

Charles Sumner Esrey Endowed Scholarship.

Fiftieth Reunion Class Endowed Scholarship. Established in 1991 and supplemented annually by each 50th reunion class.

Elliott L. Fisher Endowed Memorial Scholarship. Established by his family and friends.

Emery and Susie Freeman Endowed Scholarship. Established by a bequest from the Susie Freeman estate.

Friedberger Endowed Educational Scholarship. Established by the bequest of Dr. William Friedberger, in memory of his parents, Arnold and Lotta Friedberger.

David Friedrich Memorial Endowed Scholarship. Established by parents, family and friends in memory of David, class of 1988, who lost his life in a water skiing accident in his senior year at U.O.P.

A. P. Giannini Endowed Scholarship. Established by a bequest.

Irving and Fay Goleman Endowed Educational Opportunity Scholarship. Established by Gordon Zuckerman in honor of two Pacific professors emeriti.

Mildred Woodward Graham Endowed Scholarship. Established with a gift from the National Society of Colonial Dames.

Virginia Graves Endowed Middle Income Scholarship.

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

Hearst Foundation Endowed Scholarship. Established by The Hearst Foundation.

Ruth M. Heath Scholarship. Established through her bequest.

Francis W. and Mary V. Hellman Endowed Scholarship. Established through their bequest.

Ruth Templeton Henney Endowed Memorial Scholarship. Established through her bequest.

Hoefer Foundation.

Claude H. Hogan Endowed Memorial Scholarship. Established through his bequest.

John and Ruth Bay Hoobyar Endowed Scholarship. Established with an estate gift.

Cecil and Alberta Humphreys Endowed Scholarship. Established by a distinguished alumnus and long-time member of Pacific's Board of Regents and his wife, an alumna.

Ruth and Francis H. Jackson Endowed Memorial Scholarship. Established in his memory by his wife Ruth M. Jackson.

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

Clarence and Martha Jones Endowed Scholarship. Established by Clarence and Martha Jones.

Donald S. Jones Memorial Scholarship. Established through an estate gift.

Fletcher Jones Endowed Scholarship.

Dorothy Lea and Anthoy J. Ketman Memorial Endowed Scholarship. Established with an estate gift.

Fay Wallace Kiser Endowed Memorial Scholarship. Established by his wife, Beulah Lee Watson Kiser, who served the University as Dean of Women from 1940 to 1948.

Edith E. Knoles Endowed Scholarship. Established through her estate.

Emily Knoles Centennial Endowed 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.

Samuel Kress Endowed Scholarship.

Dr. Harry W. Lange and William H. Pfund Endowed Scholarship.

La Quinta Inns, Inc., Endowed Scholarship. Originally established by La Quinta Inns, Inc., and augmented by a portion of the rooms rented by Pacific visitors.

Elizabeth Laskin Endowed Memorial Scholarship. Established and supplemented by her parents, Mr. and Mrs. Myron Laskin of Milwaukee, WI, and many friends in memory of this 1956 graduate.

The Leatherby Family Endowed Scholarship. Established with a gift from Russell and Susie Leatherby.

Edward Charles Leighton Endowed Scholarship Fund. Established with an estate gift.

Bessie Lenvig Endowed Scholarship.

William and Carol Linee Endowed Scholarship. Established through the bequest of these long-time Stockton residents.

Garth Rodrick Lipsky Endowed Memorial Scholarship. Established by his mother, Edna Lipsky.

Lenora M. Magee Endowed Memorial Scholarship.

George H. Mayr Endowed Scholarship. Established by the George H. Mayr Foundation in honor of their founder.

Erford and Dorothy Knoles McAllister Endowed Scholarship.

Stanley E. McCaffrey Endowed Scholarship. Established by family, friends and colleagues in honor of the 21st president of Pacific (1971-1987).

John A. McCarthy Memorial Endowed Scholarship.

Robert T. Monagan Endowed Scholarship. Established with honorary gifts from Omega Phi Alpha and Delta Upsilon donors.

Wert E. and Viola Moore Endowed Scholarship. Established by a bequest of long-time Stockton resident, Viola Moore.

Timothy Patrick Murphy Endowed Memorial Scholarship. Established by the parents and many friends of Tim Murphy, class of 1978, whose life at Pacific left an indelible impression.

Marshall O. Nelson Endowed Scholarship.

Orange Aid Endowed Scholarship. Established by community members and friends of the University who volunteered their services. Funded by the sale of student "survival kits" and membership dues.

Pacific Co-Op House Endowed Scholarship. Established by former students who resided in Pacific's Co-Op House during the 1930s and '40s.

Doris and Frank Peirano Endowed Scholarship. Established by an estate gift.

Irma E. Pennycook Endowed Scholarship. Established by a bequest from this University friend.

Marion Pope Endowed Scholarship. Established by a bequest.

Nina Reid Prather Endowed Scholarship.

Chalmers Price Endowed Scholarship. Established with gifts from his estate.

Sandy Price Endowed Memorial Scholarship. Established by the Caldor Lumber Company and the Mildred Kellogg estate.

Al Styne E. and Frances A. Pruner Endowed Scholarship. Established with an estate gift.

Rhizomia Endowed Scholarship. Established by a group of Rhizomia members.

Tony and Dorothy Rodina Endowed Scholarship.

Lincoln and Stella Ruggles Endowed Memorial Scholarship. Established by Lottie Ruggles in memory of her parents and later supplemented through her will.

Joseph Robert Rupley Endowed Memorial Scholarship. Established by his parents. He was accidentally shot to death in 1965 by Venezuelan police while serving in the Peace Corps.

Rupert and Philamena Russell Endowed Scholarship. Established by the bequests of Mr. and Mrs. Russell.

Walter B. Sampson Endowed Scholarship. Established by a bequest.

George and Georgia Sanderson Endowed Scholarship. Established with gifts from their son Robert E. Sanderson.

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 Endowed Scholarship. Established by a bequest.

Dorothy J. and Daniel H. Singleton Endowed Scholarship. Established by a bequest.

J. W. and Florence E. Smith Endowed Memorial Scholarship.

Mary Leach Smith Endowed Memorial Scholarship. Established by Onnie Smith in memory of her mother.

Southeast Asian Endowed Scholarship. Established by memorial gifts and proceeds from benefit performances. In memory of the five children killed at Cleveland Elementary School in 1989.

Mary Lou Spiess Scholarship. Funded by her son.

R. & R. Stuart Endowed Scholarship.

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

Elliott J. Taylor and Burta M. Taylor Endowed Scholarship. Established with gifts from their estate.

Charles A. and Harriette E. Thomas Endowed Scholarship. Established by bequest and given in loving memory of their parents.

Thomas S. and Margaret A. Thompson Endowed Scholarship. Established by Mr. and Mrs. Thompson. Mr. Thompson served as Vice President for Development from 1963-1969.

Guy P. and Grace Tucker Endowed Scholarship. Established by a bequest from these University friends.

Twenty-fifth Class Reunion Endowed Scholarship. Established by the Class of 1965 and supplemented annually by the 25th reunion class.

Alex and Jeri Vereschagin Endowed Scholarship. Established by Mr. and Mrs. Vereschagin, both loyal Pacific alumni and parents.

Zana Taylor Weaver Endowed Scholarship. Established by her will.

Wendy Webb Endowed Memorial Scholarship. Established by her parents, Mr. and Mrs. J. S. Webb of Calabasas, and many friends in memory of a former student.

Dr. Gustav A. and Ellen M. Werner Endowed Memorial Scholarship. Established by family and friends in memory of a popular history professor and his wife.

Ed and Joan Westgate Endowed Scholarship.

Gene and Arlene Weston Endowed Scholarship.

Robert and Margaret Wicker Endowed Scholarship.

Wickert Memorial Endowed Scholarship. Established by the Carol Wickert Raab Trust.

Wightman Memorial Endowed Scholarship. Established in her brother's memory by Mrs. Bessie Jasmann.

Norma H. Williams Endowed Scholarship.

Theresa Woo Scholarship. This scholarship was established by her estate.

Carlos and Madeline Wood Endowed Scholarship.

Zeta Phi Scholarship. Established by Zeta Phi alumnae.

Annually Funded Academic Scholarships

In addition to the endowed scholarships, the University receives restricted scholarships annually from a variety of sources. These may provide funding for the following scholarship programs:

Corporate Patrons of Pacific; Annually funded by gifts from companies and corporations.

Patrons of Pacific; Annually funded by gifts from alumni, parents and friends of Pacific.

School and Departmental Scholarships

The scholarships listed below are granted to students who meet major requirements and/or other criteria as well as a minimum GPA of 3.0. It is NOT necessary to submit a separate application form unless specifically noted. Many of these scholarships provide funding for the Regents', President's, and Bishop's Scholarship programs.

College of the Pacific

A. S. H. Graduate Research Award. Established by Dr. Alice S. Hunter, a respected faculty emeritus.

Art Award Endowed Scholarship. Established by sale of University art holdings and friends of the Art Department.

Julian Smith Bacon, Jr. and Jedediah Smith Scholarship. Established with gifts from the Jedediah Smith Society.

Barker-Knoles Endowed Scholarship.

Jesse A. Berger Endowed Memorial Scholarship. Established by Dr. Evelyn Berger Brown in honor and memory of her husband.

Gertrude Sibley Billard Endowed Memorial Scholarship. Established in memory of a former professor of English at Pacific.

Frank Black Endowed Memorial Scholarship. Established in memory of a former student.

Maynard A. Bostwick Endowed Scholarship. Established by an alumnus.

Erma Boyce Endowed scholarship.

DeMarcus Brown Endowed Drama Scholarship. Established by Elinor Sizelove Canedy, class of 1944, in honor of the emeritus drama chairman.

Leslie M. Burwell Endowed Memorial Scholarship. Established by Mrs. Leslie M. Burwell.

William P. Christiansen Endowed Award.

Howard and Emma Churchill Endowed Scholarship. Established by a bequest.

Emerson and Edith Cobb Endowed Scholarship. Established by faculty, alumni and friends in honor of long-time chairman (1948-78) of the Chemistry Department and his wife.

Iva B. Colliver Endowed Scholarship. Established by her bequest.

Roselyn J. Cook Endowed Scholarship.

Ray and Ruby Dami Endowed Scholarship.

Ellen Deering Endowed Senior Award.

Ellen Deering Endowed Senior Art Award.

Helen B. Dooley Endowed Scholarship.

Max and Victoria Dreyfus Foundation Endowed Award.

Helene and Jack Drown Endowed Scholarship.

Fred J. Early, Jr. and Marguerite C. Early Science Research Endowed Award.

Marie Easterbrook Endowed Scholarship.

Fred L. Farley Endowed Scholarship. Established by Erwin and Tom Farley.

David Friedrich Memorial Endowed Scholarship.

Fresno Methodist Foundation Endowed Scholarship. Established in 1970 from a transfer of the Foundation's assets to the University.

Martin T. Gipson Endowed Memorial Scholarship. Established by friends wishing to memorialize a former Psychology Department Professor.

Jan Good Endowed Award. Established by Janice E. Good for outstanding students majoring or minoring in French or Spanish.

Ralph Guild Endowed Communication Scholarship. 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.

Clifford J. Hand Endowed Scholarship.

Clarence Hinkle Endowed Scholarship. Established through the estate of Mable Bains Hinkle.

Kathryn Gehlken Howe Endowed Memorial Scholarship. Established by Edna Gehlken, former chair of the Home Economics Department, in memory of her sister.

Wesley O. Janzen Endowed Scholarship. Established with an estate gift from Alicia "Alice" M. Powell.

James Earl Jewell Endowed Scholarship in Technical Theatre.

Harold Klose, Jr. Endowed Scholarship. Established with various memorial gifts.

Sharon Brookhart Krakora Endowed Scholarship. Established by a gift from her husband as a loving tribute to her lifetime achievements.

Geraldine Scott Krause Endowed Scholarship. Established by this alumna of the class of 1936.

Allen and Helen Laursen Scholarship. Established by a stock gift.

F. Melvin and Verna Kopka Lawson Endowed Scholarship.

Los Angeles Pacific Club Pantheon of the Arts Endowed Scholarship. Established by a gift from the Los Angeles Pacific Club.

Bryon R. Meyer Endowed Theatre Scholarship honoring DeMarcus Brown '23. He was a very active and respected professor in the Theatre Arts Dept. at UOP from 1924-1968.

Charles B. Norman Endowed Economics Scholarship. Established in memory of Dr. Charles B. Norman, who taught economics at Pacific for 32 years.

Doris E. Osborn Endowed Scholarship.

Vincent D. Panico Endowed Scholarship. Established with gifts from family and friends.

Irving Pasternak Endowed Memorial Scholarship.

Ida R. Patton Endowed Memorial Scholarship. Established through the Ida Patton Trust Fund.

Margaret S. Payne Endowed Scholarship. Established by memorial gifts from her husband Dr. Herbert Reinelt & friends.

Walter Arville Payne Endowed Memorial Scholarship. Established by family, colleagues, friends and former students in memory of a long-time member of the history department faculty.

Barbara Bodley Reinelt Endowed Scholarship. Established with a gift from Dr. Herbert Reinelt.

San Joaquin County Medical Society Pre-Medical Endowed Scholarship. Established with a gift from the society.

Karma Cundell Schad Endowed Scholarship. Established in memory of a former art student by her husband.

Arnold C. Scott Endowed Scholarship. Established through his estate.

John E. Seaman Endowed Scholarship. Established with a gift from Leeyee J. Su.

Dr. Benjamin Smith Endowed 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.

Doenda Hammond Smith Endowed Scholarship.

John D. Smith Endowed Scholarship. Established with a gift from Leeyee J. Su.

Bud Stefan Endowed Memorial Scholarship. Established by his friends, relatives and wife in his memory.

Derek Forbes Stewart Endowed Memorial Scholarship. Established by his family and friends in commemoration of his life.

Dr. John Hadman Sticht Endowed Memorial Award.

Doris Reyburn Lathy, Margaret Reyburn Collis and Adda Reyburn Thompson Endowed Scholarship.

Esther Myers Umhalt Class of 1918 Endowed Scholarship. Established by a bequest.

Stanley Volbrecht Endowed Scholarship.

G. Warren and Ruby Zahn White Endowed Memorial Scholarship. Established in memory of Professor White, who taught mathematics and business courses at Pacific for 44 years. He retired in 1966.

Margorie Webster Williams Endowed Art Scholarship.

Paul Winters Endowed Forensics Scholarship. Established to honor Paul Winters on the occasion of his retirement in the Spring of 1989.

Conservatory of Music

Marietta Atherton Endowed Scholarship. Established by a bequest from a University friend and Stockton patroness of the arts.

Allan Bacon Endowed Memorial Scholarship. Established by Mrs. Allan Bacon and friends and former students of Professor Bacon. He was a professor of organ from 1922 until he retired in 1956.

Dr. J. Russell Bodley Endowed Scholarship. Established by former students and friends and augmented by memorial gifts. Dr. Bodley was associated with Pacific for over 60 years as a 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.

Maynard A. Bostwick Endowed Scholarship. Established by an alumnus.

Alix E. and Horace I. Brown Endowed Scholarship. Established in memory of these music professors.

Buck Family Young Musicians Endowed Scholarship. Established by a gift from Mrs. Eva Buck.

Roberta Burland Endowed Scholarship.

Ruth J. Camp Scholarship. Funded annually from an outside endowment.

Chrissie W. Collins Endowed Vocal Scholarship. Established by various family gifts.

Elford-Roy Endowed Scholarship. Established by Mr. and Mrs. Robert Elford in honor of their parents.

Calla Guild Music Endowed Scholarship. Established by Ralph Guild to honor his wife, Calla.

Wilhelmina Harbert Music Therapy Endowed Scholarship.

Evelyn Ashmore Heath Endowed Scholarship.

P. Maddux Hogin Endowed Memorial Scholarship. Established by a bequest from Gwen Hogin in memory of her husband, a 1937 alumnus.

Gladys Thelma Ryan King Endowed Scholarship. Established by her bequest.

Leonor M. Magee Endowed Scholarship.

Virginia Short McLaughlin Endowed Scholarship.

Dr. Lawrence H. McQuerrey Endowed Memorial Scholarship. Established in memory of this former music education professor and chair of the department, with gifts from his family, friends, colleagues and students.

Edna B. Meyerholz Endowed Scholarship. Established by the bequest of Mrs. Meyerholz, class of 1911.

Jules F. Moullet Endowed Memorial Scholarship. Established by an estate gift from Louis F. Moullet.

The Naylor Family Endowed Scholarship. Established by Victor and Polly Naylor.

Pooled Endowed Scholarship. Established and augmented by alumni, parents and friends of the Conservatory.

William H. and Pauline Crawford Ramsey Endowed Scholarship.

Elizabeth E. Rice Endowed Scholarship. Established by Mrs. Marion V. Neufeld in memory of her mother.

Rosalie C. Rohr Scholarship. Established and funded annually by a distribution from her estate.

Bernice L. Rose Endowed Scholarship. Established by a 1925 Conservatory alumna.

Margaret Michael Saladana Endowed Scholarship.

Mildred Murphy Scott Endowed Scholarship. Established by Oliver D. Scott in honor of his wife.

Lawrence and Marilyn Short Endowed Scholarship.

John W. Sloss Endowed Conservatory Scholarship. Established by William and Joseph Sloss in memory of their father.

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, Pacific alumnus and business leader.

Dr. Lucas and Kathe Underwood Endowed Scholarship.

Richard Van Alstyne Endowed Scholarship.

Eva Varnum Endowed Scholarship.

Jack and Eleanor Vogel Endowed Scholarship.

C. A. Webster Foundation Endowed Stringed Instrument Scholarship.

Judith and Walter Willmette Endowed Scholarship. Established by Judith and Walter Willmette.

Eberhardt School of Business

Bank of America Foundation Endowed Scholarship.

Charles and Carolyn Bloom Endowed Scholarship.

Chambers Family Endowed Scholarship. Established by the Chambers Family Charitable Trust.

Credit Bureau of San Joaquin County Endowed Scholarship.

Robert E. Ferguson Endowed Scholarship. Established in memory of alumnus and Regent Bob Ferguson.

Joseph Kaeslin Endowed Memorial Scholarship.

George B. Lagorio Endowed Scholarship.

Marian and George Malloy Endowed MBA Scholarship.

John and Rhonda Minges Endowed Scholarship.

Gregory A. and Amy Lonegran Mitchell Endowed Scholarship.

Jack and Eleanor Vogel Endowed Scholarships.

Robert R. Winterberg Outstanding Senior Award.

Thomas W. Witter Endowed Scholarship. Awarded to needy and deserving School of Business students.

Gladys L. Benerd School of Education

William P. Bacon Endowed Scholarship.

Barker-Knoles Endowed Scholarship.

Benerd School of Education Pooled Endowed Scholarships. Established and augmented by alumni, parents and friends of the School of Education.

Esther Berchtold Endowed Scholarship. Established by this alumna, class of 1926.

Melvin and Jayne Bernasconi Endowed Scholarship. Established by Mr. and Mrs. Bernasconi.

R. John, Jr. and Margaret Wenhold Charles Endowed Scholarship. Established through their estate.

Clare Ann Christian Memorial Endowed Scholarship. Established in the memory of this 1967 alumna by her husband, family and friends.

J. Marc and Ruth P. Jantzen Endowed Scholarship. Established in honor of the retired dean of the School of Education.

Susie Leatherby Endowed Scholarship. Established by Russell and Susie Leatherby.

Hilga G. Lister Endowed Scholarship. Established by Dr. and Mrs. Cy Coleman in memory of her mother.

Pedro and Edna Osuna Endowed Scholarship. Established by Professor and Mrs. Osuna.

Alexandra Green Ottesen and Peter Ottesen Endowed Scholarship.

Glen Ainslee Payne Endowed Memorial Scholarship. Established by the Walter A. Payne family.

Marion Pease Endowed Scholarship. Established by several local groups in honor of Pacific emerita professor of education.

Phi Delta Kappa Endowed Scholarship.

Willis N. and Viola Potter Endowed Scholarship.

Janet Rose Baker Robinson Endowed Scholarship. Established by bequest from a 1936 School of Education graduate.

Victor Russell Robinson Endowed Scholarship.

Barbara Ratto Rosemond Endowed Memorial Scholarship. Established from memorial gifts.

J. A. and Mary Thomason Endowed Scholarship. Established by Mr. and Mrs. Thomason.

Bonnie Jean Thompson Endowed Scholarship. Established by Mary Middleton Cunningham, class of 1957.

Virginia Sadler Toomay Memorial Endowed Scholarship. Established with a gift from General John C. Toomay.

Rebecca L. Troutner Memorial Endowed Scholarship. Established by family, friends and faculty in memory of a 1985 School of Education graduate, an elementary school teacher who died in an automobile accident.

Milton M. Tyler Endowed Scholarship. Established in memory of the former special education professor by his family and friends.

Chuck Verduzco Endowed Memorial Scholarship.

Phyllis L. Vince Endowed Memorial Scholarship. Established by her husband, Mr. Robert Vince.

School of Engineering and Computer Science

James F. Baun Family Endowed Scholarship. Established with a trust.

Charles and Carolyn Bloom Endowed Scholarship.

Chambers Family Endowed Scholarship. Established by the Chambers Family Charitable Trust.

Gladys and John de Arrieta Endowed Scholarship. Established by an engineering graduate and his wife, both alumni, class of 1940.

Robert H. and Margaret E. Edwards Endowed Scholarship. Established through their estate.

General Mills Endowed Scholarship Fund.

Jack C. Goble Endowed Scholarship. Established from memorial gifts.

Roy S. Hamma Family Endowed Scholarship. Established by an estate gift in honor of his four children.

Robert L. Heyborne Endowed Scholarship. Established in memory of a former dean of the School of Engineering from 1969-1990 with memorial gifts from family, friends, alumni and faculty.

Robert C. Johanson Endowed Scholarship. Established with memorial gifts from family and friends.

Robert and Emily Lovell Endowed Scholarship.

Joseph and Genevieve Madeiros Endowed Engineering Scholarship. Established with an estate gift.

Henderson E. McGee Endowed Fund.

Herman G. and Myrtle E. Nelson Endowed Scholarship. Established through their estate.

Laurie Ann Pecoraro-Nemetz Endowed Scholarship. Established with memorial gifts.

Andres Rodriguez Endowed Scholarship. Established with memorial gifts.

Teichart Foundation Endowed Scholarship.

Elsa and David Wheeler Endowed Scholarship.

School of International Studies

Kirk and Laura Bowman Endowed Scholarship.

Arthur J. Cullen Endowed Scholarship.

Rom Landau Endowed Scholarship. Established by Professor Landau through life-time gifts and by his will.

George and Isabelle Wilson Endowed Scholarship. Established by a gift from Mrs. Isabelle Wilson.

Thomas J. Long School of Pharmacy and Health Sciences

Gregory Bard, M.D., Endowed Scholarship. Established in his honor by his wife.

Donald Y. Barker Endowed Scholarship. Established in honor of a 32-year member of the School of Pharmacy's faculty on his retirement by faculty, friends, family and former students.

Ocea McMurray Brooksbank Endowed Scholarship.

Charles T. Countryman Endowed Memorial Scholarship. Established by his family and friends in memory of this distinguished pharmacy graduate.

Ray and Ruby Dami Endowed Scholarship. Established through the bequest of Mrs. Ruby Dami.

Mabel and Charles P. Dezzani Endowed Scholarship.

Ted and Georgia Econome Endowed Scholarship. Established with memorial gifts from family and friends.

Joseph S. Gee Endowed Scholarship.

Jay Patrick Gould Endowed Memorial Scholarship. Established by friends and family.

James C. King Endowed Scholarship.

Steven Edward Lancaster Endowed Scholarship. Established with gifts from Miyuki Lancaster.

J. M. Long Foundation Endowed Scholarship.

Thomas J. and Muriel T. Long Endowed Scholarships. Established by gifts from the co-founder of Long's Drug Stores and emeritus Regent of the University.

Charles Magnasco Endowed Memorial Scholarship. Established by Andrew Magnasco in memory of his brother.

Marvin Malone Scholarship. Established with memorial gifts in memory of Marvin Malone.

Erin Michael McGreevy Endowed Memorial Pharmacy Scholarship. Established with a gift from the estate of his wife Lucille McGreevy.

Virginia Puich Endowed Scholarship for Academic and Clinical Excellence.

Rexall Pharmacy Endowed Scholarship.

Carl C. Riedesel Endowed Scholarship.

Emmons E. Roscoe Endowed Memorial Scholarship. Established with memorial gifts from family and friends.

Ivan W. and Helen T. Rowland Endowed Scholarship. Established in their honor.

George H. Sanderson Endowed Scholarship for Physical Therapy. Established with an estate gift from his son Robert E. Sanderson.

Ralph L. Saroyan Endowed Scholarship. Established in his honor by various donors.

Warren J. Schneider Endowed Memorial Scholarship.

John H. Shinkai Endowed Graduate Pharmacy Student Scholarship.

John H. Shinkai Endowed Pharmacy Scholarship.

Masao and Ayako Shinkai Endowed Memorial Scholarship. Established by Dr. John H. Shinkai in memory of his parents.

Florence Scott Van Gilder "The Tolley Award" Endowed Award.

Richard C. Vessey Endowed Memorial Scholarship. Established by his family and augmented by gifts from his friends in memory of this 1975 School of Pharmacy graduate.

Walgreen Company Endowed Pharmacy Scholarship. Awarded to needy and deserving pharmacy students to assist in finishing their professional studies or participating in vital research within the school.

Bryant Kerry Wong Endowed Memorial Scholarship. Established in memory of Mr. and Mrs. Wong's 4-year-old son who was killed in an auto accident in 1965. Both parents are pharmacists.

University Library

Gladys L. Benerd Student Employee Endowed Scholarship.

Intercollegiate Athletics

Athletic Grants. Awarded to qualified student athletes according to the regulations of the National Collegiate Athletic Association (NCAA).

Chester Caddas Family Endowed Scholarship. Established by gifts from various donors.

Ellen L. Deering Endowed Athletic Scholarship. Established by bequest.

Jessie Murphy Grogan Endowed Memorial Softball Scholarship. Established in her memory by her family and friends.

Larry E. Heller Endowed Scholarship.

Claudine and Jerald Kirsten Endowed Athletic Scholarship. Established with estate and various memorial gifts.

Chris Kjeldsen Endowed Memorial Scholarship. Established in honor of an alumnus and long-time member of the University faculty.

Ted and Stefanie Leland Endowed Scholarship.

Justin and Shirley Marshall Endowed Scholarship.

Tunney McClendon Endowed Memorial Tennis Scholarship. Established by her husband, Dwayne McClendon and her many friends in loving memory of her life and love for the game of tennis.

Warren T. McNeil Endowed Memorial Scholarship.

Myers' Moose Men Endowed Scholarship. Established through tribute gifts for Jack 'Moose' Meyers UOP football coach 1950-1961.

Jean Rule Sanders Endowed Women's Tennis Scholarship. Established by her daughters. Awarded to a female member of the team who has excelled in scholastic endeavors and has high moral character.

Doug Scovil Memorial Endowed Scholarship. Established with memorial gifts.

Tom Stubbs Endowed Baseball Scholarship. Established by gifts honoring him as baseball coach, assistant football coach, and professor at UOP for 33 years.

Bert I. Van Gilder Memorial Endowed Scholarship. Established through a gift from Marian Schroven '29 in memory of her husband.

Student Loans

Information concerning loans may be obtained in the Office of Financial Aid. Loan funds may be used to pay tuition, fees, room, board and other related educational expenses.

Herbert E. and Lilian E. Burbank Memorial Student Loan Fund

Established with an estate gift from Jeanne C. Burbank.

Robert and Merle Carter Loan Fund.

Established by two long-time 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.

Juanita and Earnie Cronkite Loan Fund.

Established with an estate gift.

Lloyd Ivan Gerry Memorial Loan Fund.

Established from the estate of Isa Spencer Gerry in memory of her husband. Available for needy and deserving students who are enrolled full-time.

Claude H. Hogan Revolving Loan Fund.

Established to provide emergency loans, supplemental loans and summer study loans for non-traditional students.

Clara and Frank Mayo Student Loan Fund.

Established from a trust to assist students with interest-free loans.

Blanche Pope Neal Student Loan Fund.

Established with securities to assist students.

Ralph M. Parsons Revolving Loan Fund.

Established by a gift from the Ralph M. Parsons Foundation to assist sophomores, juniors, and seniors who meet GPA and other eligibility requirements. Preference is given to engineering and science majors.

Federal Perkins Loan.

This federally sponsored program provides five percent loans for students who demonstrate high financial need.

Robert C. Powell Revolving Loan Program.

Established to assist students from middle income families.

Edna Ormsby Proctor Endowed Memorial Loan Fund.

Established by a gift from her estate to assist the University in training students for full-time Christian service in the area of religious education, preparing for directorships, conference executive work, and other related professions.

SIS Tenth Anniversary Loan Fund.

Established to assist students.

Francis A. Wagstaff Loan Fund.

To assist students with expenses. Established with an estate gift.

Health Professions Student Loan.

The HPSL program, administered by the U.S. Department of Health and Human Services, provides loans at five percent interest for eligible students enrolled full-time in the University's professional pharmacy program.

Federal Direct Stafford/Ford Loans and Federal Direct PLUS Loans.

Under this program the U.S. Department of Education makes loans, through the University, directly to students and parents. Students may be eligible for Stafford/Ford Loan funds and parents of dependent students may apply for the PLUS Loan. The University of the Pacific Financial Aid Office determines eligibility and provides application forms.

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 of the Pacific Financial Aid Office.

Emergency Loans.

The Emergency Loan Program was made possible through the generosity of United California Bank, The Jones Foundation of Los Angeles, and other interested benefactors and friends of the University. This program is designed to assist students in coping with unanticipated financial emergencies. Payment of tuition and fees, rent, utility bills, and other normal expenses are not considered unanticipated and are therefore not emergencies as defined by this program. Loans from this source are limited to $150. Each loan application is reviewed on a case by case basis. Repayment in full is expected within 90 days or by the end of the semester, whichever comes first.

Emergency Loan Funds for students from the Long School of Pharmacy and Health Sciences

have been provided by the California Pharmacy Foundation Trust Fund, Inc., the John W. Dargavel Foundation, the Synergex Loan Fund, the Pacific Pharmacy Associates Perpetuating Loan Fund and the Long School of Pharmacy and Health Sciences Memorial Loan Fund. Frank Bollig, Claude L. Busick, Charles Fox, Edna E. Gleason, Fred C. Mahler, and Harold McAnaw are individuals who have contributed to this Memorial Loan Fund.

Academic Regulations

(Stockton Campus)

All undergraduates are urged to read these general regulations carefully. Failure to be familiar with this section does not excuse a student from the obligation to comply with all the described regulations.

Although every effort has been made to ensure the accuracy of this catalog, students are advised that the information contained in it is subject to change. They should therefore consult the Schedule of Classes for any term to relate these regulations to calendar dates. The University reserves the right to revise its regulations and programs in accord with sound academic standards and requirements.

University of the Pacific's Four-Year Guarantee

Pacific guarantees that students will graduate in four years, or five for Engineering and Pharmacy majors, if the following requirements are met:

- Students select a major by the beginning of their sophomore year;
- Students regularly consult with faculty advisers to assess graduation requirements in their major;
- Students pass general education and major courses with a C grade or better;
- Students satisfactorily complete 32 units per year;
- Students meet special requirements in specific Pharmacy and Bachelor of Fine Arts majors.

If a student is unable to enroll in a required class or is otherwise unable to graduate after four years due to reasons beyond his or her control, no additional tuition will be charged for courses to complete the degree.

Academic Residence Requirement

The minimum residence requirement for a bachelor's degree program is 32 out of the last 40 units applied to the degree requirements shall be earned in residence at University of the Pacific. Any additional units a student may take specifically required for the degree are not subject to this residence requirement. Normally these 32 units must be taken on the Stockton campus, but study in Pacific-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.

Academic Standing

At the end of each semester, a student's academic standing will be determined to be one of the following: good standing, good standing with warning, probation, or subject to disqualification. The criteria for these academic standings are based upon a combination of cumulative Pacific GPA and the term GPA and vary according to a student's classification. Unless admitted on probation, a student is in good standing during the first semester of attendance. Students who are subject to disqualification are reviewed by an appropriate committee and are either disqualified from further enrollment at the University or are allowed to continue for the next semester on probation. Criteria for the different academic standings are outlined below:

Good Standing: A term GPA of 2.00 or higher and a cumulative Pacific GPA of 2.00 or higher.

Good Standing with Warning: A term GPA below 2.00 and a cumulative Pacific GPA of 2.00 or higher.

Probation: After a semester in Good Standing. Freshmen through Juniors: a term GPA below 2.00 and a cumulative Pacific GPA below 2.00. After a semester in Good Standing with Warning or Probation. Freshmen: a term GPA below 2.00 and a cumulative Pacific GPA between 1.50 and 1.99. Sophomores: a term GPA below 2.00 and a cumulative Pacific GPA between 1.80 and 1.99. Juniors: a term GPA below 2.00 and a cumulative Pacific GPA between 1.95 and 1.99. All undergraduates: a term GPA of 2.00 or higher and a cumulative Pacific GPA below 2.00. A student on academic probation may not register for independent study.

Subject to Disqualification: After a semester in Good Standing. Seniors: a term GPA below 2.00 and a cumulative Pacific GPA below 2.00. After a semester in Good Standing with Warning or Probation. Freshmen: a term GPA below 2.00 and a cumulative Pacific GPA below 1.50. Sophomores: a term GPA below 2.00 and a cumulative Pacific GPA below 1.80. Juniors: a term GPA below 2.00 and a cumulative Pacific GPA below 1.95. Seniors: a term GPA below 2.00 and a cumulative Pacific GPA below 2.00.

Disqualified: Each school determines whether a student subject to disqualification is disqualified. If not disqualified, a student subject to disqualification will be on probation for the following term. If disqualified a student will not be allowed to register for further study at the University during a regular term while disqualified, 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 probation and would need to make up the earlier deficiency in order to attain good academic standing.

Acquisition of Graduate Credit as an Undergraduate

Undergraduate students seeking to open a graduate transcript (i.e., earn graduate credit) may do so if they apply and are accepted to the Graduate School and meet all conditions of the Petition to Receive Graduate Credit as an Undergraduate. The application and petition must be approved before the last day to add classes of the last semester as an undergraduate. Units cannot be retroactively transferred from an undergraduate to a graduate program. Petitions may be picked up in the Research and Graduate Studies Office.

Auditing a Class

Auditing of a course is an option that allows exposure to a course with no course credit or grade given. To audit a course, approval must be granted by both the instructor and the chair of the department in which the course is offered. Auditing is not available in participation courses such as applied music, physical education, art courses of an applied nature, etc. Students auditing a course must pay both an auditing fee and any material or laboratory fees that are required. Courses taken through auditing may not subsequently be converted to a course credit or grade. The student must indicate at the time of registration if they wish to audit a course, and pay the appropriate fee.

Cancellation

If you are an admitted and confirmed student and do not wish to attend Pacific for a semester and instruction has not yet begun, you must formally request a cancellation of your registration from the university. To cancel your registration (prior to the start of the term) contact the Admission Office. If you are a continuing student contact Student Outreach and Academic Support Services located in the Raymond Lodge. You cannot cancel via the student portal, insidePacific.

Catalog Expiration and Requirements Policy

The University of the Pacific catalog lists requirements for active degrees offered by the university. Each catalog goes into effect at the beginning of the fall term the academic year of issue. It expires at the end of summer session the seventh academic year after publication for students maintaining attendance. Advisers and other university employees are available to help, but students have final responsibility for satisfying degree requirements for graduation.

To receive an undergraduate degree, a student must have satisfied, at the time of graduation, all requirements for the degree listed in one of the following:

The unexpired catalog in effect when the student was first admitted and enrolled at the University of the Pacific if students maintained continuous attendance.

OR

Any subsequent catalog that has not yet expired.

To fulfill general education, major or minor program requirements, a student must complete the requirements in effect:

When the student first declared their program

OR

When the student changed to a different program

Requests for exceptions to unit major or minor requirements may be made by the school/college offering the major or minor.

Change of Address

All students must notify the Office of the Registrar immediately of any change in their addresses or those of their parents or guardians. The University assumes no responsibility for materials sent through the mail not received.

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 Office of the Registrar.

Change 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 processed in the Office of the Registrar or by way of insidePacific. Deadlines for dropping or adding courses are announced in the class schedule each term.

After the deadline dates have passed (but prior to the end of the term) requests to add or drop courses must be made by special petition to the student's respective school/college. Requests to add or drop courses after the term must be made to the Academic Regulations Committee (ARC). In either case, petitions are normally 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 earned nor in the calculation of the grade point average.

Any petitions approved after the deadline dates will be subject to a clerical service fee. Tuition and fee refunds are based on the date you complete paperwork with Student Outreach and Academic Support Services, located in the Raymond Lodge.

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

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 - 27 1/2 units designates a freshman.

28 - 55 1/2 units designates a sophomore.

56 - 91 1/2 units designates a junior.

92 - up units designates a senior.

Commencement

Commencement exercises to honor students who have earned baccalaureate and graduate degrees are held each year in May. Students who have earned their degrees in the previous fall term or in Summer Sessions are welcome to participate. The ceremonies are held by individual schools or colleges. The ceremonies consist of speakers and the presentation of degrees and awards.

Course Loads

Twelve units constitute a minimum full-time program of studies during a semester 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 during a semester for undergraduates without special permission is 18 units and 19 units for first professional level students. Students who wish to enroll for units in excess of the maximum study load must petition their school or college for approval in advance. Approval is based to a great extent upon the student's past academic record and will result in additional tuition charges. If a student is approved to take courses concurrently at another institution, the units at Pacific and the other institution may not exceed 18 units during Fall and Spring or 8 units during Summer Session.

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

Course Numbering System

Undergraduate Courses:

Lower Division courses. Courses, numbered 1 – 99, are primarily designed for freshmen and sophomores.

Upper Division courses. Courses, numbered 100 – 199, are typically open to students who have met the necessary prerequisites as indicated in the catalog course description. These courses are designed primarily for juniors and seniors but exceptions may be appropriate for qualified sophomores.

Graduate Courses:

Courses numbered 200 – 299 are primarily designated for graduate students. 300 and above are primarily for students admitted to a doctoral program. Courses numbered in the 9000 series are used for specific professional development courses that are graduate level, non-degree courses in the **Center for Professional/ Continuing Education.**

Prerequisites

Prerequisites for courses should be noted carefully; the responsibility for meeting these requirements rests on the student. The instructor may request that a student who has not completed the prerequisites be dropped from the course. EXTN courses (offered by the Center for

Professional/Continuing Education) generally do not have prerequisites.

Variable Unit Courses

Some course numbers are used to describe specific types of courses, as follows:

- 87/187/287 – Internship study. Work experience conducted off campus, under the supervision of a non-full time Pacific faculty member.
- 89/189 – Practicum. Work experience conducted on campus, under the direction of a faculty member.
- 92/192 – Cooperative education. Work experience on full-time or part-time basis. The Cooperative Education Program in each school or college differs in unit allowance. See appropriate school for unit specifics in the general catalog.
- 93/193/293 – Special Topics. Departments may offer, on occasion, special topic courses. Courses may reflect the current research of the instructor or the needs and interests of a group of students.
- 191/291 – Independent Study
- 195/295/395 – Seminar. Undergraduate/Graduate/doctoral
- 197/297/397 – Independent Research. Undergraduate/Graduate/doctoral
- 299 – Master's Thesis
- 399 – Doctoral Dissertation

Note: These numbering standards are general standards and reflect current practice among most units. Some units may have exceptions to these general standards. Students should check for the standards within their majors for individual unit standards that may differ from these general numbering standards.

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 Office of the Registrar;
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 $50.00 service fee (non-refundable).

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. Students who pass the exam will be charged an additional $200.00 for the course credit. Such credit shall not be considered to generate an overload.

Credit Limitations

A total of no more than eight units in dance, physical education and theatre activity courses, club sports and intercollegiate athletic courses may be applied toward a degree.

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 coursework in business administration may be applied toward a degree, except in the case of students majoring in business administration who may apply up to 64 units of business courses toward the degree.

Cross Listed Courses

A cross-listed course is one that carries credit in more than one department or program.

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.

Degree Types

Concurrent Bachelor's Degrees:

Concurrent Bachelor's degrees are awarded under the following conditions:

1. The same degree cannot be earned within the same school or college (i.e. two BA degrees in the College of the Pacific).
2. The student completes the departmental requirements for each major.
3. The student completes the general education requirements for each degree.
4. The student completes a minimum of 32 credits at the University of the Pacific beyond those required for the degree that has the highest credit requirement.
5. Both degrees must be completed at the same time under the same catalog requirements.

Dual Major:

Students may obtain a baccalaureate degree with two majors by completing the requirements for both majors under the same catalog requirements. A dual major may consist of two departmental majors, two interdepartmental majors or two majors in different schools. Students must consult each school for specific requirements. Multiple majors will be recorded on the student's permanent record, but only one degree is awarded. The degree is issued by the student's declared school.

Second Bachelor's Degree:

If a student holds a baccalaureate degree from University of the Pacific and wishes to pursue a second bachelor's degree in a different specialty, a minimum of thirty two (32) semester units of work must be completed between receipt of the first and second degree. For some degrees more than 32 additional units may be needed. The residence requirement (32 units of the last 40 semester

units of registration must be completed at Pacific) applies for the second bachelor's degree.

Diplomas

Diplomas are not awarded at Commencement but are available approximately four months afterward. Diplomas are mailed to the permanent address on file. Diplomas will not be issued if you have outstanding financial obligations to the University. Diplomas left unclaimed are destroyed after five years. Students must re-order and pay for destroyed diplomas.

The student's diploma will list the degree, the school or college of the University awarding the degree, and, if applicable, major and academic honors. The official academic transcript will also list the major or majors, minors and academic honors. Graduation dates posted on the diploma coincide with the last month of three of the terms of instruction – Fall = December, Spring = May and Summer = August. The official graduation date will reflect the completion of all academic requirements for the degree and not the last term of enrollment.

Enrollment in Graduate Level Courses by Undergraduates

Qualified undergraduate students may take graduate classes (course numbers 200 or above) only under exceptional circumstances. Furthermore, undergraduates must have upper-division standing, receive approval of an adviser, and have approval from the Dean of the Graduate School. No assurance of student success is implied by permission of the faculty member/dean.

Enrollment Verification

Students who need enrollment verification from the Office of the Registrar must be registered. Students should allow a minimum of two weeks for verification of registration (especially at the start of the term). Currently enrolled students may also print enrollment certificates from the National Student Clearinghouse (NSC) by using the student portal insidePacific after the last day to add classes.

Final Examinations

Students are required to take all scheduled exams. Matters of grading and testing procedures are the responsibility of individual instructors. If the instructor chooses to give a final examination, it must be scheduled during the time specified by the University Registrar for the final examination for that course. Final exam dates are published by the Office of the Registrar in the Schedule of Classes. No student is allowed to take a final examination before the scheduled time.

Grade Point Average

The grade point average is determined by adding the quality points and by dividing the resultant sum by the total number of quality hours. As a general rule, the ratio is based on the number of letter graded units completed; e.g., if a student repeats a course both courses will be considered in the grade point average.

A student's institutional cumulative grade point average is based on courses which the student takes at Pacific. Courses which a student takes at other colleges or universities will be counted in the overall cumulative grade point average.

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=	4.0	Outstanding work, highly meritorious
A–	3.7	
B+	3.3	
B=	3.0	Very good but not outstanding
B–	2.7	
C+	2.3	
C=	2.0	Satisfactory
C–	1.7	
D+	1.3	
D=	1.0	Barely passing but counts toward graduation
F=	0.0	Failure. Will count in the grade-point average. Must be repeated with a satisfactory grade to receive credit toward graduation. Also, an F is a default grade given when an instructor does not report a grade.

AU= Audit

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.

N= Deferred grading

NC= No credit recognition. Represents unsatisfactory work under pass/no credit option. Not assignable in the Conservatory of Music.

NG= No Grade Received

P= Passing work on the pass/no credit system. Approved only for certain courses and program of a college or school.

W= Authorized withdrawal from courses after the prescribed period. (Since 2/1980)

Graduation Requirements for Bachelor's Degrees

Candidates for undergraduate degrees must adhere to all of the University's regulations. In particular they must have:

1. Completed the major requirements specified by the school/college/department with a minimum grade point average of 2.0. At least 16 units of the major requirements must be completed at Pacific with a minimum grade point average of 2.0;
2. Completed a minimum of 30 units in general education including Mentor Seminars I, II and III and a path of six or nine courses as specified by the school or college (transfer students should refer to the General Education section for GE requirements);
3. Met 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 Pacific just prior to receiving the degree; and
6. Accumulated the appropriate number of units specified by the particular school or college.

The university requires that any candidate for a bachelor's degree who has not completed work within seven years of continuous attendance must reapply and be subject to any new requirements in effect at that time.

Filing for Graduation

Application for Graduation: An Undergraduate Application for Graduation must be filed with the Office of the Registrar as an indication of intent to graduate at a specific time. It should be filed upon completion of 92 units (senior standing) with the Office of the Registrar in the spring semester by any student expecting to fulfill degree requirements during the next academic 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.

Degree Check: After you have filed your Undergraduate Application for Graduation your college or school will check for the fulfillment of major, department, and college requirements as well as General Education breadth requirements. The Office of the Registrar will check your records to ensure that you have completed University requirements and are in good academic standing (2.00 or better).

Honors at Graduation

Effective Spring '05, university wide honors at graduation for undergraduates is awarded on the following criteria. The student must have completed a minimum of 54 letter-graded units at Pacific and will be based on the student's final institutional (Pacific) grade point average. The requirements are: Cum Laude (honors) 3.5, Magna Cum Laude (high honors) 3.7, and Summa Cum Laude (Highest Honors) 3.9.

Leave of Absence

Registered students who wish to leave the University temporarily should file for a leave of absence. The appropriate form may be obtained from Student Outreach and Academic Support Services located in the Philosophy Lodge. The maximum leave of absence which can be granted at any one time is one academic year (Fall and Spring, Summer Session is not considered part of the academic year). Students who do not return for the semester specified are considered to be withdrawn from the University and must reapply.

Students who wish to enroll for course work at other institutions during their leave of absence from Pacific must complete the "Concurrent Enrollment" form available at the Office of Admission. Courses taken without prior approval will not be counted at Pacific. Registered students who take a leave of absence from the University will be withdrawn from present classes as well as courses enrolled in during early registration, if applicable.

Major

A major represents the concentrated area of study a student has chosen to pursue for a bachelor's degree. Students who have not chosen a major are designated as 'exploratory'. A student who decides to change a major or to declare one must obtain the appropriate form from the Office of the Registrar.

Minor

A minor represents a prescribed concentration of courses in a subject area other than the major. A minor is not required for a degree, but may be elected to strengthen preparation in areas related to the major. A minimum cumulative GPA of 2.00 is required in courses completed for the minor. Course requirements for each of the minors offered are in the department's section of the University Catalog.

Official Grades

Official grades are available to students via insidePacific approximately four weeks after the end of the term. Unofficial grades are available on insidePacific after the end of the faculty grade deadline. The grades posted at that time are merely an indication of grades submitted, and grades still missing. They do not show a GPA, or academic standing.

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 Office of the Registrar and must be submitted prior to the deadline for adding classes.

Returning to Pacific

Note: If you are returning to Pacific and have not been enrolled in at least one semester in each academic year you will be held to the new degree requirements in effect at the time of readmission.

After Cancellation

New Students: If you cancelled your registration and wish to attend Pacific in a future term, you must submit a new application for admission. Your previous admission status will have no bearing on the decision for admission in the future.

Continuing Students: If you cancelled your registration and wish to attend Pacific in a future term, you must submit an Application for Return to Active Status. See "Withdrawal" section for specific deadlines.

After Withdrawal: If you withdrew from the University and wish to return in a future semester, you must submit an Application for Return to Active Status, available at the Office of Admission, 1st floor Knoles Hall. The deadline filing dates are July 1st for Fall and December 1st for Spring.

Registration

Registration is the means by which an individual officially becomes a student at Pacific. Registrants are further identified by school/college of the University, degree status, classification and major.

Registration for continuing students takes place during the preceding semester for any given Fall or Spring term. The days of early registration are listed in the Schedule of Classes. Registration for new students generally takes place preceding a given Fall or Spring semester during orientation. A student is not considered enrolled until tuition and fees have been paid and they are registered for classes via insidePacific or with the Office of the Registrar.

Registration - Independent Study:

Independent study courses are designed for special educational needs which are not met by the available curriculum. A contract is drawn up by the student and faculty member containing a description of the course content, basic requirements, unit value, and method of evaluation. The contract is signed by the student, faculty member, chair and the faculty member's dean. All copies are filed with the Office of the Registrar at the time of registration.

Adding Courses:

Courses may be added until the end of late registration with adviser's signatures. A student who wishes to add a course must have already filed a registration form for a given term. Only when the completed Registration Worksheet or Add/Drop form has been processed by the Office of the Registrar or via insidePacific does the addition become official.

Dropping Courses:

A student who wishes to drop a course should carefully observe all the listed deadlines in the Schedule of Classes. The Add/Drop form can be secured from the Office of the Registrar or on-line at www.pacific.edu/registrar.

Repetition of a Course

In order to repeat a course students must have received a C- or lower the first time the class was taken. Once a course is completed (with a grade of C- or higher) the student may not repeat any prerequisites for that course. The grading option, when repeating a course, must be the same as the one used originally. Any given course can be repeated one time only. Basic Skills courses exempt from the one time repeat rule. Grades will be averaged unless a student chooses to exercise their grade replacement rights up to a maximum of three times while enrolled in undergraduate degree programs at Pacific. The last grade received is the grade that will be calculated into the GPA for replaced courses.

The current grade averaging policy remains unchanged for courses in which a student has received a C- or lower. However, grade averaging now is also available to students who have "used" their three grade replacements and wish to retake another course. Remember a course may only be repeated once. In any course or program where enrollment demand exceeds the resources to offer sufficient openings or sections to meet that demand, the academic unit may give registration priority to students taking the course for the first time.

Grade Replacement Policy

The policy applies only to courses originally taken at Pacific and repeated at Pacific. The last grade received is the grade that will be calculated into the GPA although the transcript will include all courses and earned grades. The student receives credit for the units of the course only once. Students may exercise their grade replacement rights up to a maximum of three times while at Pacific. Repeats of basic skills courses are not included in this maximum. Students must complete a "Grade Replacement" form to assure the course will be calculated correctly. The form is available in the Office of the Registrar.

Grade Averaging Policy

The repeat rule applies in cases where either the original course or the repeated course is taken at another institution. When such repeats occur, both the original grade and repeat grade are averaged in the GPA although the student receives credit for the units of the course only once. Grade averaging would also be available to students who have "used" their three grade replacements and wish to retake another course or courses for which they would have received a C- or below.

Transcripts

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 $4.00 per transcript is charged for processing the record. Students can request a transcript in person or mail by contacting the Office of the Registrar.

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.

Transfer College Credit Limitations

The maximum number of units accepted from a community college is 70. However, no community college credit will be accepted after a student has completed 70 units from all institutions attended.

Unclassified Students

Unclassified students may complete up to 27 units (to include completed courses and courses in progress) prior to being required to formally apply for admission to the university. Upon acceptance to the university, resident and transfer coursework will be evaluated and a determination made as to applicability to meeting degree requirements. Appeals to this policy should be directed to the Academic Regulations Committee.

U.S. Military Mobilization:

All students who are called to active duty must start the process by providing a copy of the military summons to the Office of the Registrar's Veterans Affairs (VA) Coordinator, Knoles Hall, first floor, 209-946-2135. Cancellations processed during the first twelve weeks will receive 100% refund and all course sections will be dropped before leaving for active duty, it is essential that a copy of the military summons is delivered to the Office of the Registrar before departure from campus. This ensures that classes will be dropped and that grades of 'F' will not be issued.

Students called to active duty toward the end of the semester, who are short submitting final papers or cannot take final examinations, are entitled to receive Incompletes (I) for the semester. Arrangements to receive Incompletes must be made with each instructor and copies of the military summons must be left with the Office of the Registrar. Students receiving Incompletes under these conditions will be given four (4) semesters to complete the work and remove the marks of I. If the work is not completed during this special four semester period, the marks of I will automatically convert to marks of W. If the military service period extends beyond the special four semester period, students can file an Academic Regulations Committee (ARC) petition for extension of this special Incomplete time period.

Students who leave the university for U.S. military service and follow the procedures outlined above will be placed on leave of absence and eligible to re-enroll as returning students. Returning students must file a 'Return to Active Status' application with the Office of Admission. Returning students who have questions about Veterans Affairs benefits should contact the VA Coordinator in the Office of the Registrar at 209-946-2135.

Withdrawal from the University

An official withdrawal is normally granted to students who complete the withdrawal petition properly and turn it in to the Office of Student Life (Student Outreach and Academic Support Services) prior to the last day for dropping classes for the term. Students who withdraw without filing such a petition may incur 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 earned or in the calculation of the grade point average. You must visit the Student Outreach and Academic Support Services office located in the Philosophy Lodge, if you wish to withdraw completely. Tuition and fee refunds are based on the date you complete paperwork with Student Outreach and Academic Support Services. Once you have withdrawn from the term you must file a Return to Active Status application with the Office of Admission. The deadline is July 1st for Fall admission or December 1st for Spring admission.

An official withdrawal from the University is the termination of rights and privileges offered to currently enrolled students, including but not limited to early registration.

Division of Student Life

The vision of Student Life at Pacific is to be nationally recognized as an exemplary Student Life program committed to the development of a campus culture that values Diversity, Integrity, Collaboration, Leadership, Respect, and the connection of individuals to the Community. The mission of Student Life is to provide exceptional service and support to Pacific students. Through innovative thinking and dynamic programs, each Student Life staff member focuses on all aspects of a student's personal growth and educational experience. These values transcend individual roles and departmental functions and unify the division. The mission is fulfilled through:

- Sharing individual skills, passions, differences and lives through the services and programs that we provide to each student;
- Creating a living, learning, and working environment that encourages students to reach their potential;
- Encouraging the expression, understanding of, and respect for differences within and beyond our university community;
- Intentionally facilitating the inclusion of all community members through active community building;
- Working towards social justice related to policy and historic and emerging forms of exclusion;
- Modeling ethical decision making and leadership;
- Collaborating with faculty, students, staff, and community partners to provide learning experiences that extend beyond the classroom;
- Celebrating our community accomplishments and;
- Being flexible, passionate, and fun.

Freshman Orientation

Even after four successful years of high school, for most students, college is the first day of school all over again. Freshmen orientation is specifically designed to address the transition into college life for the first-time college student. During orientation, freshmen will meet current Pacific students, faculty and staff; learn about academic majors and other opportunities for involvement in campus life; participate in course advising; and complete registration for fall classes.

Transfer Orientation

Transfer orientation is designed to recognize and build on the previous college experiences of transfer students, while at the same time introducing them to the unique aspects of college life at Pacific. Transfer students participate in an orientation program that includes academic advising, course registration and information about how to quickly become engaged in Pacific's academic and campus culture. During transfer orientation, students will have the opportunity to interact with many faculty, students and staff that will play a key role in their college career.

Family Orientation

Students tend to have a more meaningful college experience and make better decisions when they discuss their academic and campus life choices with their family. Family Orientation is structured with this thought in mind. Family members attending orientation will leave with an understanding of Pacific culture, knowledge about academic requirements and expectations, and information about the services and opportunities available to their student. Family members participating in orientation can also expect to enjoy Pacific hospitality and the company of other families during their time on campus.

Welcome Weekend

Welcome Weekend serves as a kick off to the academic year at Pacific. For new students, the weekend provides an orientation to the Stockton community and the opportunity to meet returning students and Pacific alumni through shared participation in a variety of service and social activities. For returning students, the weekend provides time to reconnect with friends, faculty and staff and prepare for the rigors of the coming year.

New Student Convocation

New Student Convocation serves as a formal welcome of new students into the academic life of the University. During the ceremony, Pacific's values of scholarship, leadership, and citizenship are introduced and highlighted. New Student Convocation is also intended to be a celebration of university life and a formal acknowledgement of the university's commitment to support students in the achievement of their educational goals – both inside and outside the classroom.

Parent Programs

Parents and family members with questions about Pacific resources or programs may seek assistance through the staff of the Student Life Office at (209) 946-2365. Information on Parent Weekend and other programs specifically for family members can also be accessed via the internet – just click "Parent" on the University's website www.pacific.edu. University calendar information, campus news, and special event information can also be accessed through the "Parent" page.

Student Outreach and Academic Support Services

Student Advising Program

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. For more information call Student Outreach and Academic Support Services at (209) 946-2177.

Retention Services

Student Outreach and Academic Support Services-Retention Services is a "one-stop" referral center for support services to aid students in their academic success. Any enrolled student may use Retention Services to receive tutoring, study skills sessions, peer counseling, financial aid counseling, academic counseling, or personal counseling. Faculty, staff and students may refer a student who needs academic support. Once a student is referred, peer Retention Student Advisers contact the student to help him or her receive the needed services. Retention Services also produces the Program of Access to Support Services (PASS), an individualized plan of access to University resources. Based on an assessment of the student's academic needs, each PASS student helps design his or her own action plan for the semester. PASS is required for some students, but is available to any enrolled student who can benefit from a system of contact and academic resources. For more information, call Retention Services at (209) 946-2080.

Leave of Absence and Withdrawal

Students who want to take a leave of absence or withdraw from the University begin that process in the Student Outreach and Academic Support Service office. An exit interview is held and the appropriate paperwork is completed.

Community Services

The Center for Community Involvement (CCI) provides in-depth learning in Leadership, Advocacy, and Activism through service to the community. CCI provides students with opportunities and resources to contribute through community service and volunteer work with a diverse number of non-profit organizations. During orientation "Welcome Weekend", new students can choose to become involved in an "Opportunity for Involvement". The students are able to visit and experience working with our community partners. During

the academic year Pacific students tutor youth, conduct on-campus enrichment programs. conduct blood drives, and volunteer at many non-profits including Children's Home of Stockton, Delta Human Society, Big Brothers Big Sisters, St. Mary's Interfaith and Community Services, Stockton Arts Commission, Stockton Shelter for the Homeless, the Women's Center and many more. Campus community involvement events have included: students from the School of Education teaching youth to construct balloons and pin wheels during the annual Balloon Fest, Physical Education students teaching swimming to the disabled; Spanish-speaking students teaching adult Mexican-Americans to speak and read English. In addition, Pharmacy students are actively involved in the community through the Academy of Students of Pharmacy. Programs sponsored by the students include the Aids Awareness, Diabetes Education, the Drug Awareness Children's Carnival and Immunization Certificate programs. The prominence of the Pharmacy students in these areas has manifested itself over the years by the accumulation of awards and grants.

Community Involvement Program and Multicultural Affairs Office

The Community Involvement Program (CIP), established in 1969, is designed to serve the educational needs of local students who demonstrate a historically low family income and a disadvantaged background. The Community Involvement Program is only for new incoming University of the Pacific students. Once in the program students are offered leadership training and various opportunities for students to return to the community as leaders and agents of social change.

Students in the Community Involvement Program are selected based on their participation in the Stockton community, maturity, and potential to contribute his/her time and energy to the Community Involvement Program. To keep their scholarship for their time at the University of the Pacific they must contribute a significant amount of time in the Stockton community through volunteering at various community organizations.

Multicultural Affairs works with the University of the Pacific campus and the community to promote cultural diversity and awareness by promoting interaction among students, faculty and staff. The office promotes programs, services, and activities to encourage cooperative relations among diverse groups. Multicultural Affairs oversees the PRIDE Resource Center and the Pacific ALANA Center. The Pacific ALANA Center located in the McCaffrey Center provides space for all students across campus. ALANA stands for African, Latino, Asian, and Native American. Pacific ALANA Center is home to CIP, United Cultural Council (UCC) which is a governing body for all cultural student organizations on campus and the Multicultural Greek Council (MGC). Multicultural Affairs office provides leadership opportunity for all students through the Multicultural Leadership Retreat, Diversity Retreat, Celebrate Diversity Calendar, International Spring Festival, and a multitude of other components.

The PRIDE Center supports a campus environment that is free from prejudice, harassment, and violence towards LGBTI individuals and organizations. Opening its doors to students, faculty and community members in Spring 2003, the Pacific PRIDE Center provides an abundance of resources for the lesbian, gay, bisexual, transgender, and intersex (LGBTI) community as well as allies and those who are questioning their sexual and/or gender identity. The PRIDE Center welcomes a diversity of ethnic, religious, political and cultural values while promoting understanding and acceptance for those marginalized as a result of sexual/gender orientation. The PRIDE Center is located in the basement of John Ballantyne residence hall.

Housing

Residential Communities are central to student life at Pacific. The University considers the residential living experience to be an important part of its educational opportunities, and that living on campus contributes significantly to a student's development and to the learning process. The University requires all students who are of freshmen or sophomore class standing (earning less than 56 units) to live on campus. The only exceptions are for students who reside with their parent(s) or legal guardian(s) at their permanent address within the 50 miles of the University, or who are over the age of 23 (twenty-three). Additional information of this policy is available in the Tiger Lore and from the Housing and Greek Life Office.

The residence system provides living accommodations in residence halls, fraternities, sororities and apartment facilities for approximately 2,200 students. All University-operated Greek houses, residence halls and apartments are staffed by professional and graduate student staff.

Each of the University's residence halls and apartments is coeducational, where men and women reside within the same facility, but not in the same room or apartment. All students living in the residence halls and some fraternities and sororities are required to purchase a meal plan.

Some residence halls are reserved for new freshmen interested in Learning Communities, such as Academic Honors Program (by invitation only) and other Residential Learning Community programs. University apartments are reserved for students who have either a junior or senior standing. The Tower View Apartments are for married students or students with a domestic partner, and/or a child under the age of three (3). Residence within the fraternity and sorority system, with some exceptions, is limited to students who were members of the organization the previous semester.

Housing assignments to the residence halls and the apartments are made by the Housing and Greek Life Office. Students already enrolled apply directly to the Housing and Greek Life Office. Upon acceptance to the University, an applicant will be sent a packet of information with the a brochure describing Pacific's living options, the student housing contract for housing and dining services, and rates. The student housing and dining contacts are for the complete academic year including both the fall and spring semesters for general university students and the fall, winter and spring terms for Pharmacy students. The residence halls and dining halls are not open during the winter break recess period.

Dining Services

The Dining Service Program is provided by Bon Appetit, the premier name in university dining. Menus are created by the on-site Executive Chef with an emphasis on taste and quality using only the freshest ingredients. The program requires students residing in the residence halls to participate, within the Quad Dining complex (all you can eat venue), in one of three meal plan options (19 Meal Plan, 14 Meal Plan or 10 Meal Plan). The three options also provide a specific cash amount for use at the Summit (food court) and the Redwood Room (lunch restaurant-buffet style). In addition to the above meal plans, students residing in on-campus apartments and off-campus can participate in a 5 Meal Plan. Students also have the option to participate in the Pacific Cash (a pre-paid debit program). Pacific Cash may be used in any of the three dining locations and at the Tiger Grocery Store. Additional information on the Dining Services Program is available from the Housing Office or online at www.pacific.edu/housing.

Cowell Wellness Center

Cowell Student Wellness Center houses health, counseling services and student victim advocate services. The facility is located north of the footbridge, at 1041 Brookside Road, in Stockton.

Services are available to students who have paid the student health fee and are enrolled at any of Pacific's campuses. Students are required to submit documentation of an entrance physical, health insurance coverage, and meet the immunization and TB clearance requirements. Health and Counseling services are provided on an appointment basis, Monday through Friday from 8:00 a.m. to 6:00 p.m. during the regular school year. During the summer, the Wellness Center follows hours that are set forth by the University. The Center is closed on weekends and holidays. When services are unavailable, students may access a Nurse Advice Line to receive instructions or recommendations for treatment options. Students using the advice line must be currently enrolled and provide their student identification numbers. Center staff will provide follow-up as needed on the next operational day.

Health Services

Health care providers consist of full time Nurse Practitioners/Physician Assistants and a Physician consultant. Other staff members include an Executive Director, Finance Officer, Medical Assistants, Insurance Coordinator and administrative support. Health care delivery and medical record management are protected by privacy and confidentiality regulations.

Health services include the management of common health problems such as acute minor illnesses and injuries, and preventative care. Routine gynecological care (Pap smears), contraceptive maintenance, STD testing, immunizations, routine physicals, and health education are well-utilized preventative care services. Prescription medications are made available as indicated. Several categories of medication are provided directly through the Center, otherwise prescriptions are filled at local pharmacies. Laboratory services include limited in-house testing and full service processing through local labs.

Chronic health care is not routinely provided. However, students may be referred to local specialists as the need arises. Hospitalization and emergency treatment for life-threatening conditions are not managed in the Center. In those circumstances care is referred to one of three local hospitals. Staff may arrange for ambulance transport as indicated.

The Wellness Center fee pays for unlimited visits to the Center. Further costs are generated with the purchase of medication, diagnostic testing, or referrals to off campus health care providers. Students can elect to pay costs at time of service, charge them to their student accounts, or bill their health insurance plans.

Health Insurance

The University has a mandatory health insurance policy with a hard waiver. This requires all students to submit a copy of their health insurance card to the Cowell Wellness Center prior to registering for classes. Students have the option to enroll in the University of the Pacific student health insurance plan, select an outside plan, or be covered under their families policy.

Counseling Services

Counseling Services assists currently enrolled Pacific students who may be experiencing situational, psychological or interpersonal difficulties. The goal of Counseling Services is to enable students to benefit from, and maximize their educational experience at Pacific. Located in the Cowell Wellness Center, Counseling Services offers individual and group counseling concerning a variety of issues. These include: dating, family relationships, depression, anxiety, grieving, sexuality, self-esteem and self-image, eating disorders and body image, sexual abuse or harassment, drug and alcohol concerns, roommate disputes, stress management, assertiveness training, time management, decision making, goal setting, and values clarification. Personality testing is available as well as psychiatric consultation and limited medical management of psychotropic medications. Assessments for learning disabilities and Attention-Deficit/Hyperactivity Disorder (ADHD) are offered at a reduced cost.

Counseling Services consults with other campus offices regarding mental health related concerns. In addition, Counseling Services offers educational outreach programs to the university community.

The Counseling Services staff includes licensed psychologists and a marriage and family therapist. Experienced pre-doctoral interns may work under licensed supervision. Counseling sessions are confidential and free of charge.

After-hours emergency crisis consultation is available by contacting the Department of Public Safety at (209) 946-3911, and requesting university assistance.

The Student Victim Advocate Program

The Student Victim Advocate Program is housed within Public Safety. The Student Victim Advocate provides free and confidential information, advocacy and support to students who may be victims or survivors of crime, violence or abuse. This includes but is not limited to battery, theft, assault, stalking, sexual battery, rape (acquaintance/date/stranger), attempted sexual assault, and sexual harassment. The Student Victim Advocate can be reached on a 24 hour basis. The Student Victim Advocate is also available to speak to classes, student groups and residential communities on topics such as: sexual assault awareness, healthy relationships, personal safety and self defense.

Career Services

The Career Resource Center (CRC), located in Hand Hall, provides a wide range of career services for students and alumni that facilitate goal setting, academic and non-academic internship search, graduate and professional school assistance and post graduate employment efforts, to name a few. The CRC provides services and events that assist students and alumni in developing the skills required to obtain part-time, full-time, work study, summer jobs or graduate school admission. Students, even as freshman, are encouraged to participate in CRC programs, services and events. Staff is available to support students and alumni who are in all parts of the process of identifying activities and steps necessary to achieve employment and academic goals. Emphasis is placed on individuals participating in active career exploration and skill building through internship opportunities and other experiential learning opportunities.

The CRC also sponsors and coordinates on-campus recruitment events as well as career fairs, etiquette dinners and graduate and professional school information sessions. These events bring over 100 diverse companies and organizations to campus to interact with job seekers and career explorers. Additionally, the CRC provides access to a variety of hard copy and electronic resources related to career exploration and job search. Employment and internship opportunities are easily accessed through postings on eRecruiting, allowing students to search twenty four hours a day, seven days a week from the convenience of any computer with internet access.

The Career Resource Center is a comprehensive career center offering services to students and alumni seeking to establish and accomplish employment and graduate education goals. Through personalized career counseling, interest assessments and job search assistance, as well as many other offerings, the CRC is here to meet the career related needs of students and alumni.

McCaffrey Center

The Stanley E. McCaffrey Center, named after Pacific's 21st President, is considered the "student union" at the University. As the "student union", McCaffrey is the focal point for student activities. It's a place to enjoy a meal,

attend a lecture or meet with other students, faculty and staff. Facilities at McCaffrey include a smart lecture hall/movie theatre, a lounge, University Bookstore, two separate dining facilities, Tiger Grocery Store, and the offices of the ASUOP (Associated Students of University of the Pacific).

Activities at the Center are sponsored by ASUOP Productions, ASUOP Arts & Entertainment, Residence Hall Association and many other groups. The activities within the center include: casino nights, movie series, coffeehouses, lecture series and open mic nights. These activities and events add to the overall experience of Pacific students.

Art Gallery

The Richard H. Reynolds Art Gallery is 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 artists' lectures and demonstrations. The Gallery is located in the Art Center.

SUCCESS

A Student Support Services (SSS) grant from the U.S. Department of Education provides funding for 200 eligible students to participate in a program designed to assist in retention and graduation and in the overall academic success of its students. SUCCESS is a federal TRIO program designed to assist students in overcoming academic, social, cultural and other barriers to academic success. The following services are available to SUCCESS students:

- One-on-one tutoring
- Personal, financial and career counseling
- Assistance with financial aid matters
- Workplace and graduate/professional school visits
- Assistance in applying to graduate/ professional schools.

Studies by the U.S. Department of Education document that students who receive all of the services of SUCCESS are more than twice as likely to remain in college than students from similar backgrounds who do not receive services. For more information contact the SUCCESS Office at: Bannister Hall, first floor. Telephone: (209) 946-2439; FAX: (209) 946-2984; e-mail: abautist@pacific.edu.

Religious Life

The University offers students a variety of opportunities to deepen knowledge and understanding of their faith and to express commitment through community worship and service. Whether the student is a person of faith or is a person of no particular faith; whether they consider themselves religious, spiritual or simply open to learning about what and how others believe, the University Chaplain's Office is committed to support and encourage the students on their journey. Pacific has many active faith based groups and organizations including: Hillel (Jewish Students), Chi Alpha, Newman House, Intervarsity Christian Fellowship, Muslim Students Association, Buddhist Students, Pacific Pagan Council, Canterbury Club, Hindu Students, Sikh Students, Fellowship of Christian Athletes and more.

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 serviced 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 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. University of Public Safety programs include: date rape prevention, self protection, crime prevention, emergency phones, Ride Along Program, and special event planning. The office also oversees the S.T.R.I.P.E program which is a safety escort service managed by students. For any further information or questions that you may have, phone Public Safety at (209) 946-2537 or visit our web site link under Student Life at www.pacific.edu.

Activities and Organizations

While giving primary emphasis to the goal of academic excellence, the University recognizes and encourages co-curricular activities through academic, political, recognition, professional, and fraternal activities. There are a wide variety of religious, social, cultural, recreational, special interest and governance organizations.

Student Government

The Associated Students is the student government of the University of the Pacific (ASUOP). ASUOP is completely operated and funded by the University of the Pacific students. The organization houses five different entities which are the ASUOP Government, Arts and Entertainment, Retail, Communications, and Digital Productions. ASUOP has a dual mission: 1) to serve as an official channel for the free exchange of ideas and opinions among the administration, faculty, staff, and students; 2) to provide services and student activities across campus that enrich the social, cultural, and educational aspects of university life.

A fee of $75.00 per semester is automatically assessed to every undergraduate or professional student registered with more than 8.5 units determining them as an ASUOP member. This fee income, combined with various revenue sources, amounts to a total budget to fund the programs services, activities, and goals of the Associated Students. ASUOP has designated a large part of the budget to fund the unique social and professional needs of Pacific students. The student leadership within each constituent school provides additional attention and personal service for those students.

The success of ASUOP depends upon active student involvement. The University and the Associated Students encourage student involvement in campus governance and believe that a sound administration calls for shared responsibility among all members of the campus community. To get involved or for further information, visit the ASUOP office located on the second level of the McCaffrey Center, or call (209) 946-2233.

Intercollegiate Athletics

The University is an NCAA Division I-AAA institution and a member of the Big West Conference. A broad range of intercollegiate athletic opportunities are offered in both team and individual sports. Men's sports include baseball, basketball, golf, swimming, tennis, volleyball and water polo. Women's sports include basketball, cross country, field hockey, soccer, softball, swimming, tennis, volleyball and water polo. Notable among the facilities are the 30,000-seat A. A. Stagg Memorial Stadium, Pacific Aquatics Center with an Olympic-size swimming pool, Bill Simoni Field (softball), Hal Nelson Tennis Courts and the 6,000-seat Alex G. Spanos Center. The Klein Family Field is the new home in 2006 for Pacific baseball.

Campus Recreation

The Department of Campus Recreation offers facilities and programs to improve the quality of life for students, faculty, staff, and alumni. Students, faculty, staff, and alumni are encouraged to take the time to explore the recreational opportunities and participate in the programs.

The Department of Campus Recreation is comprised of the Main Gym, Baun Fitness Center, Hal Nelson Tennis Courts, Brookside and Zuckerman Fields, and Raney Recreation Area.

With more than 75 percent of Pacific's student body annually participating in Campus

Recreation activities, the Department of Campus Recreation has a strong following. Students will find diverse program offerings from Yoga, informal basketball, competitive Intramural Sports, and Sport Clubs. Students can connect with nature and the wilderness with Outdoor Connection or utilize a full service Fitness Center open more hours than any other building on campus.

Baun Fitness Center

The Baun Fitness Center was completed in August of 2003. A signature feature of the 18,000 sq. ft. building is a 32-foot high rock climbing wall that can be viewed through the glass tower entrance.

The center includes areas for free and machine weights, a variety of cardiovascular equipment, two racquetball courts, group exercise rooms, outdoor rental equipment and locker rooms and showers. All fee paying undergraduate Pacific students are eligible to use the facility free of charge. Memberships to the Center are also available at a fee to other students, faculty, staff, and alumni.

Outdoor Connection

The Pacific Outdoor Connection is a brand new Campus Recreation program. The program hosts four components; an indoor climbing wall, outdoor adventure trips, outdoor equipment rentals, and a resource center with guide books, magazines, and maps all conveniently located in one area. The overall goal of the Pacific Outdoor Connection is to provide outdoor opportunities for the whole diverse campus community. We look forward to seeing you on one of our trips, on the wall, or planning your own adventure at the resource center with equipment rentals.

Theatre Arts

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 theatre arts majors but are open to all others by tryout. Credits applicable to degree requirements may be earned by approved participation.

KPAC (Pacific Student Radio)

Students have the opportunity to participate in the activities of KPAC, a student operated radio station. The station allows students to gain practical experiences and test classroom theory. KPAC utilizes a low-powered FM signal that broadcasts to the Pacific and surrounding communities.

ASUOP Productions

ASUOP Productions is dedicated to the digital preservation of student life at the University of the Pacific. A comprehensive program, it includes digital still photography, digital video, editing, and media presentation production. ASUOP Productions is an educational environment in which students gain hands-on experience with state of the art equipment.

ASUOP Arts & Entertainment (A&E)

ASUOP Arts & Entertainment entertains, enriches, and educates the University of the Pacific and the City of Stockton with a variety of events. A&E comprises a talented event planning staff whose mission is to further enhance the social, cultural, and educational aspects of student life while expanding students' knowledge and building leadership skills. With an off-campus trips series that takes students all over California, to an independent and foreign film series, A&E gives new perspective and new experiences to students at Pacific. A&E also produces the annual Homecoming Festival and the International Spring Festival. Past major events include: CAKE: In Concert, Third Eye Blind, Spike Lee, Reel Big Fish, Politically Incorrect with Bill Maher, Save Ferris, Wayne Brady & Friends, Margaret Cho, David Sedaris, and Terri McMillan.

Forensics

Debate and other forms of competitive speaking are traditions at Pacific and are fields in which the University has attained national recognition. Forensics students at Pacific typically travel to tournaments throughout the academic year. They compete in Parliamentary Debate, Persuasive Speaking, Expository Speaking, After Dinner Speaking, Impromptu Speaking, Extemporaneous Speaking, Dramatic Interpretation, Duo Interpretation, Poetry Interpretation, and Prose Interpretation. Students who attain exceptional records often qualify for the National Parliamentary Debate Association Tournament and the American Forensics Association National Individual Events Tournament.

Orchestra

The University Symphony Orchestra presents a full series of symphony concerts each year. The Symphony also performs for opera, choral and commencement performances featuring student artists.

Bands

The Symphonic Wind Ensemble presents an on-campus concert series and is the Conservatory of Music touring wind ensemble. The University Concert Band presents on-campus and community concert series performing a variety of concert band literature. The Pep Band performs at various University athletic events. The Jazz Ensemble presents concerts, dances and programs emphasizing music of the jazz idiom. Students throughout the University are encouraged to audition for participation in all band ensembles.

Choruses

The Pacific Singers presents an on-campus choral concert series and is the Conservatory of Music touring choral ensemble. The University Chorus presents an on-campus concert series performing a variety of choral literature. The Oriana Choir (Women's Chorus) presents an on-campus concert series performing choral music for women's voices. Students throughout the University are encouraged to audition for participation in all choral ensembles.

Publications

The Pacifican is an independent weekly newspaper, published by the Pacifican Publication Board. It is financed by the ASUOP fee and advertising. Student managed, this publication serves as a laboratory for those interested in journalism.

The major publication of the University is the *Pacific Review* and it is published three times a year by the Office of Marketing and University Relations. Its purpose is to inform alumni, parents, students and friends about the University, its people and its events.

The Naranjado, Pacific's yearbook, returned to the campus in 2002 after a 10-year absence. The book is published by the Naranjado Yearbook Club, an independent student organization. Students gain experience in journalism, photography, graphic design and business as they work to create a lasting record of the year.

Center for Community Involvement

The Center for Community Involvement (CCI) is a student-centered learning environment that provides quality, innovative programming which, through student leaders, forms a link between the campus and our Stockton community, where evolving programs provide the spark for education, action and service. The purpose of the CCI is to inspire, support and prepare students to successfully address their concerns through service to their community and the society in which they live.

The Center for Community Involvement is the former Anderson Y Center which has been an important part of the University of the Pacific for over a hundred years. Thousands of students, staff and board members have influenced countless lives within the Stockton community through various clubs and organizations the AYC has sponsored.

The Center for Community Involvement provides private one-on-one tutoring to students K-12 and adult learners at the center. CCI also assist in staffing educational support programs throughout the community. Additionally, the CCI is becoming Pacific's Volunteer Center.

The Center for Community Involvement is part of the Career Resource Center and the Division of Student Life. CCI receives support from ASUOP, United Way and numerous other supporters and donors.

National Honor Societies

Alpha Lambda Delta. For freshmen with an academic average of 3.50 or more.

Beta Beta Beta. Biology honor society for students with a Biological Sciences GPA of at least 3.0.

Beta Gamma Sigma. Honor society, recognizes outstanding scholarly accomplishment of those receiving their professional training in business and management.

Eta Kappa Nu. For honor students in electrical engineering.

Mortar Board. For seniors winning recognition for scholarship and campus leadership.

Order of Omega. For leaders who are members of fraternities and sororities, maintaining a GPA of 3.0.

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.

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

Sigma Tau Delta. Phi Chi Chapter recognizes and encourages outstanding achievement in English language and literature.

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

National Professional Organizations

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

Delta Sigma Pi. Lambda Mu Chapter for business majors.

Kappa Psi. Gamma Nu Chapter for male pharmacy students.

Lambda Kappa Sigma. Alpha Xi Chapter for female pharmacy students.

Mu Phi Epsilon. Mu Eta Chapter for music major students.

Phi Alpha Delta. Largest legal fraternity composed of pre-law members.

Phi Delta Chi. Alpha Psi Chapter for male pharmacy students.

Rho Pi Phi. Pharmaceutical fraternity. Lambda Sigma Delta Chapter.

Sigma Alpha Iota. International female music fraternity.

Academic Organizations

American Institute of Graphic Arts

American Society of Mechanical Engineers

Associated Students of Civil Engineers

Associated Students of Engineering Management

Association for Supervision and Curriculum Development

Association of Computing Machinery

Beta Alpha Psi

Conservatory Composers Club

Eberhardt School of Business Association

French Cultural Society

Institute of Electrical and Electronic Engineering

National Society of Black Engineers

Omega Delta Phi Fraternity, Inc.

Pacific Adult Learners

Pacific American Marketing Association

Pacific Humanities Center

Pacific Model United Nations

Pacific Music Management

Pacific Music Therapy Association

Pacific Speech and Debate Society

Pacific Sport Management Group

Pacific Student Athlete Council

Pacific Student Radio KPAC

Pacific Pre-Med Club

Professional Fraternity Council (PFC)

Public Relations Student Society of America

School of Education Student Association

Society of Automotive Engineers

Society of Hispanic Engineers

Society of Women Engineers

Theta Alpha Phi (Theater)

General Fraternities

Interfraternal Council

Delta Upsilon

Phi Beta Sigma

Phi Delta Theta

Phi Alpha Phi Club

Pi Kappa Alpha

Sigma Chi

Theta Chi

Xi Chi Sigma

General Sororities

National Panhellenic Council

Alpha Phi

Delta Delta Delta (Tau Kappa Kappa)

Delta Gamma (Epsilon Lambda Sigma)

Delta Sigma Theta

Gamma Alpha Omega

Kappa Alpha Theta (Alpha Theta Tau)

Student Governance/Political

Academy of Pharmacy Students (ASP)

Associated Students of the University of the Pacific (ASUOP)

Association of Engineering Students (ASE)

College of the Pacific Student Association (COPA)

Conservatory Student Senate

Greek Council

Multi Cultural Greek Council

Multi Cultural Student Association

Pacific College Republicans

Pacific Democrats

Residence Hall Association (RHA)

Clubs and Organizations

Cultural

African-American Student Union

Cambodian Student Association

ELLAS (Estudiantes Liberes Latinos a la Supercion)

Hawaiian Club

Hmong Student Association

Japanese Culture Fans Association

Karate Club

Kilusan Pilipino

Latin American Dance Club

Martial Arts Club
MCSA (Multicultural Student Association)
M.E.Ch.A.
Middle Eastern Student Association
Milan
Muslim Student Association
Naranjado Yearbook Club
Pacific Korean Students Association
Pride Alliance
Rangzen-Pacific Tibet Alliance
UNIDOS
United Cultural Council
Vietnamese Student Association
Xi Chi Sigma

Recreational

Badminton
Men's Soccer Club
Orange Army
Pacific Climbing Club
Pacific Cycling
Pacific Men's Lacrosse
Pacific Men's and Women's Crew
Pacific Rugby Club
Sports Club Council
Women's Soccer

Religious

Bishops Scholars
Chi Alpha Christian Fellowship
Christian Pharmacists Fellowship International
Fellowship of Christian Athletes
Hillel Foundation
Hindu Students Association
Interfaith Council
Latter Day Saints Student Association
Lutheran Students Association
Muslim Student Association
Newman House
Pacific Christian Fellowship/Intervarsity
Pagan Council
Soka Gakkai Buddhist Students

Special Interest

Alpha Phi Omega
ASUOP Presents
Celebrate Diversity
Circle K International
IMPACT
Moonlight Puppeteers
Pacific Admissions Welcoming Service
Pacific Gay/Straight Alliance
Pacific Model United Nations
PALS (Pacific Adult Learners)
Professional Fraternity Council
Student Health Advisory Committee
Students for Environmental Action
The Orange Army
The Pacifican
Think Tank

Traditional Events at the University

Celebrate Diversity

A year-round educational campaign to promote understanding and sensitivity toward diversity in ability, age, ethnicity, gender, religion, sexual orientation, size and socioeconomic class. Through cooperative leadership, students and community organizations from diverse backgrounds build lasting alliances that service and empower each individual, the campus, and the community. The year-long campaign culminates with an extended week of programming in the spring.

Student Employment Expo

The Student Employment Expo, a Career Resource Center event, is designed to make search for Work Study, on-campus, and volunteer opportunities within the Stockton Community easier for students. While intended primarily for students who are work study eligible, the Student Employment Expo offers opportunities for all students in all majors.

"Meet Your Future"

"Meet Your Future" is a two week program that consists of Resume Reviews, Mock Interviews and Employer Panels Presentations. The purpose of this event is to provide students with relevant, first-hand information about their resumes, interviewing skills, employer information, and industry trends. This is also an opportunity for employers to identify potential talent for their current and future hiring needs. The annual "Meet Your Future" event will be held in the spring semester as a preparation for the Career Faire.

Spring Career Faire

The annual Spring Career Faire is an event that brings approximately 70 organizations, representing a wide range of industries to Pacific's campus. The Career Faire is an excellent opportunity for students from all majors to network and explore full-time, part-time, internships, and co-op opportunities. This is an excellent venue for students to learn more about career opportunities that exist within each organization and how to apply to those they wish to pursue.

Fall Career Fair and Graduate and Professional Schools Day

The Fall Career Fair is for freshmen through seniors as well as alumni. It offers an opportunity for the student to explore internship opportunities. Each year, well over 100 corporations, government agencies, and non-profit organizations participate in this exciting campus event.

Homecoming/Parents Weekend

An October weekend of excitement for students and their parents. A variety of activities take place to celebrate Pacific and the culmination of Greek Week and RHA Spirit Week. The weekend includes concerts, athletic and fine arts events, and the Annual Homecoming Festival.

Founders Day

An annual spring event that celebrates the founding of the University by Methodist missionaries and the heritage that came from them. Events include a chapel service for all members of the University community and a luncheon with speakers from the Heritage Society.

Holiday Festival of Lights

An annual celebration, held in December, incorporating various religious and cultural traditions, including, Hanukkah, Christmas, Ramadan, Winter Soltice and Kwanza.

Student Activities Fair

The Student Activities Fair is held annually on the third Thursday of the Fall Semester in the McCaffrey Center. The fair showcases student organizations, together with local vendors and artisans. Student organizations use the fair as an opportunity to inform new students about involvement opportunities. The fair also features music, games and giveaways.

University Standards

Academic Standards

Judicial Affairs

The Office of Judicial Affairs manages the student judicial process for students on the Stockton campus. Pacific has developed policies and procedures to clarify the expectations and standards for students. Each student is responsible for knowing and adhering to all University policies and procedures. The policies are outlined specifically in the TIGER LORE Handbook and on the web site at www.pacific.edu/studentlife/judicialaffairs/policies.

Honor Code

All members of the University community are entrusted with the responsibility of observing high ethical conduct. Essential to the fundamental purpose of the University is the commitment to the principles of truth and honesty.

Members of the University community, including students, faculty, staff, administrators and trustees, must not commit any intentional misrepresentation or deception in academic, professional or community matters. Further, community members are expected to treat others with civility, respect, and dignity.

Violating the Student Code of Conduct, University Policies and/or Local, State or Federal Laws

The violation of established policies or procedures and/or local, state or federal laws may constitute a violation of the honor code. Such violations may include conduct that occurs off-campus when students are participating, attending or in some manner connected to a University related activity.

Campus Standards

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 abide by the Student Honor code and Student Code of Conduct. 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.

University policies and regulations are published in the Tiger Lore and distributed annually to all students. Statements pertaining to or clarification of student rights are also published.

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

Alcoholic Beverages. The University reminds students that the California state law stipulates that only persons 21 years of age or older may possess and consume alcoholic beverages. Compliance with it is the student's obligation. Possession and consumption of alcoholic beverages is permitted on campus ONLY BY THOSE OF LEGAL DRINKING AGE 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 that include alcoholic beverages must be registered with the Office of Student Leadership and Involvement, unless the event occurs in a private living space and is limited to the contractees of that particular living space.

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 at any student event. Drunk and disorderly behavior is prohibited. The distribution of alcohol through communal containers is prohibited.

This policy and the procedures that implement it apply to students, student groups, and student events sponsored by a registered student organization.

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, but not limited to, air-powered weapons, firecrackers and any other exploding devices, and any instruments that can be construed as dangerous weapons are 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 and guide dogs. Animals for use in projects pertaining to academic programs must be kept and maintained in the appropriate designated areas.

Automobiles and Parking. The University policy for parking is regulated by the Department of Public Safety on the University campus. The Department of Public Safety has sworn peace officers regulating all traffic and parking laws. All citations, except parking, are adjudicated through the Stockton Municipal Court. Parking on the University premises is by permit only, and all vehicles are registered at the University Finance Center. Parking violations are enforced throughout the year.

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 or the editorial staff of The Pacifican, a student must be registered for a full-time course of study (12 units undergraduate, 8 units graduate) each semester during which he/she holds office. He/she 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.

A student must maintain a minimum of a 2.0 cumulative GPA in all letter-graded coursework attempted at the University of the Pacific. 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 require a 2.5 GPA. Finally, a student may not be on disciplinary probation during the period of time that he/she holds office. Except for any professional school policy, exceptions to these standards may be considered by the Office of Student Life.

University Programs and Services

Aerospace Studies (Air Force ROTC)

Air Force Reserve Officer Training Corps is available to University of the Pacific students through a program offered at California State University, Sacramento. The CSUS Department of Aerospace Studies offers two-, three-, and four-year programs leading to a commission in the United States Air Force. All coursework (12 to 16 semester units) is completed on the CSUS campus. Military drill, physical fitness training, and lecture are normally offered during the early morning hours Monday through Friday. Field training is conducted during part of the summer at an active duty Air Force base, normally between the student's sophomore and junior years.

Upon completion of the program and all requirements for a Bachelor's degree, cadets are commissioned as second lieutenants in the Air Force and serve a minimum of four years on active duty. Graduates who are qualified and are selected may enter pilot or navigator training after graduation, or serve in a specialty consistent with their academic major, individual goals, and existing Air Force needs. Graduates may request a delay of entry to active duty to continue their education or may apply for Air Force-sponsored graduate study to begin immediately upon entry on active duty.

Air Force ROTC offers 3-year and 2-year scholarships to qualified students. Applications are accepted in any academic discipline; however, particular emphasis is usually given to applicants in the fields of engineering, computer science, mathematics, and physics.

Due to firm scheduling requirements for the Air Force ROTC program, students are encouraged to work closely with their academic advisers in planning this academic program. Application to the Air Force ROTC program should normally be no later than during the first semester of a student's sophomore year. Juniors, seniors and graduate students may also apply under certain conditions. Contact the Unit Admissions Officer in the Aerospace Studies Department at CSUS, telephone (916) 278-7315, for information on the program or the entry process.

Clinical Services

The Testing Office in the Benerd School of Education is an officially designated national testing center for the Graduate Record Examination and the Miller's Analogies Test.

In the School of Pharmacy and Health Sciences, the Speech, Hearing and Language Center, in cooperation with the Stockton Scottish Rite Childhood Language Disorders 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, and speech and language disorders. The Center also provides communication development, auditory training, and speech reading therapy for hearing impaired individuals. Comprehensive audiological assessment is also available for children and adults.

Experiential Learning at Pacific

For decades universities have used experiential learning programs as a way to assist students in integrating their academic training with the practical side of the working world. These programs have allowed the students to gain hands-on experience in a relatively risk-free environment while being supervised and mentored by their faculty and the work site professional. As Pacific students prepare themselves for their own career journey, the value of work experience in each student's field of interest has never been greater. Today's employers are more likely to hire students who combine appropriate classroom training with meaningful experience in the working world.

Cooperative education, internship, and professional training programs have long been a hallmark of academic distinctiveness at the University of the Pacific. In 1999, Pacific's Academic Council approved a revision to the experiential learning programs that will meet the needs of the students far into the 21st century. In addition to traditional internship, cooperative education, and clinical programs, Pacific has expanded offerings to include fieldwork, service learning, research, practicum and study abroad. Now there is virtually something for every major and every academic program. There has never been a more appropriate or easier time to get involved in an experiential learning program.

Pacific's Career Resource Center urges all current and future students to consider adding an Experiential Learning Opportunity (ELO) to their academic pursuits. For additional information about ELO offerings, please contact the Career Resource Center (CRC) office at (209) 946-2361.

Educational Resource Center

The Educational Resource Center (ERC), located in Bannister Hall, conducts classes and individual and group programs for students who desire to refine essential learning skills. The reading, 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. Students are placed into ERC courses on the basis of test scores. The ERC has classes in reading, writing, mathematics, and ESL. In addition, the ERC administers the University's Tutorial Program and its Office of Services for Students with Disabilities. The ERC's programs are college-level and available to all students regularly enrolled in the University. Course descriptions can be found under the Gladys L. Benerd School of Education section of this catalog. For more information, call (209) 946-2458 or e-mail: erc@pacific.edu. An expanded description of the services as well as contact information can be found at www.pacific.edu/ education/erc.

Office of Services for Students with Disabilities in the Educational Resource Center

The University does not discriminate against students and applicants on the basis of disability, in the administration of its educational and other programs. The University will reasonably accommodate qualified students (including applicants) with disabilities as defined by applicable law, if the individual is otherwise qualified to meet the fundamental requirements and aspects of the program of the University, without undue hardship to the University. Harassment on the basis of disability issues is prohibited by the University's policies.

For purposes of reasonable accommodation, a disabled student or applicant is a person who: (a) has a physical or mental impairment which limits one or more major life activities (such as walking, seeing, speaking, learning, or working); or (b) has a record with the University by which the University has officially recognized such impairment. To be eligible to continue at the University, the student or applicant must meet the qualifications and requirements expected generally of its students, and must also be able to perform the requirements of the individual major or program in which s/he is enrolled.

A qualified student or applicant is an individual with a disability as defined by this policy and applicable law who meets the academic and technical standards requisite to admission and participation in the educational program or activity. Accommodations are such modifications to the course, program or educational requirements as are necessary and effective for the individual, if reasonable to provide at the University and do not alter the fundamental nature of programs. Accommodations do not include exemption from academic evaluation standards or from the code of student conduct.

Pacific expects that, if you are a student with a disability, you will give sufficient notice of your need for assistance (preferably prior to the start

of the semester) although the University will consider the merits of each request at the time it is received. Upon receiving a request for assistance as well as appropriate documentation, the Coordinator of the Office of Services for Disabilities considers the student's need for assistance as it relates to the documented disability. If appropriate, the University may choose to consult with such individuals, internal or external to the University, to provide further assistance needed to evaluate the request for accommodation. The following list is an example of the types of reasonable accommodations and services that university may provide, on a case-by-case basis, to assure equal access:

- Academic adjustments and curricular modifications
- Assistive technology
- Consultation with faculty and staff
- Registration assistance and classroom rescheduling
- Readers, scribes, note-taking, and library assistance
- Test proctoring services
- Mobility assistance

Please note the university does not provide or subsidize personal care devices or services such as ambulatory devices or assistance with bathing, dressing, laundry, etc. Referrals to external agencies, however, are available upon request.

For additional information, please contact:
Daniel Nuss, Coordinator
Office of Services for Students with Disabilities,
Bannister Hall, Room 101
Phone: (209) 946-2879
E-mail: ssd@pacific.edu

More detailed information as well as our Policy Manual for Students with Disabilities is available on the web at: http://www.pacific.edu /education/ssd

Tutorial Program

Administered by the Educational Resource Center, the University of the Pacific's Tutorial Program offers free one-on-one tutoring to all enrolled students. This is a peer-tutoring program; tutors are those students who have achieved success in their subject areas. Students interested in our tutoring services should come to the Tutoring Center, located in Bannister Hall, first floor, Room 106, for an appointment. The Tutoring Center's hours are Monday through Thursday, 8:30 a.m. to 9:00 p.m. and Friday, 8:30 a.m. to 5:00 p.m. Tutors in most subjects are available; however, students are urged to contact the office early in the semester, so that tutors can be sought. The Tutorial Program will make every attempt to locate tutors; however, sometimes tutors may not be readily available in some subjects. Any student interested in becoming a tutor is also welcome to contact the office. For information or questions, call (209) 946-2437 or email at erctutorial@pacific.edu.

University Honors Program

Pacific's Honors Program supports excellence in academic and co-curricular endeavors and encourages Pacific's strongest students to take leadership and service roles during their undergraduate years and beyond. Participation is by invitation. Freshmen students are invited based on high school performance. Factors considered include Advanced Placement courses, general curriculum, SAT or ACT scores and GPA. Sophomore students are invited on the basis of freshman year grades.

The honors curriculum consists of honors general education courses, honors seminars, and a senior project. Requirements and timing vary with a student's choice of school and program. Additionally, freshman honors students are required to attend eight events from our web-based calendar of "colloquia." Students who complete the program will receive appropriate annotation on their official transcripts.

Freshman honors students may elect to live in John Ballantyne House or Carter House. These adjacent residence halls constitute an academic living community reserved for freshman honors students and a number of sophomore "peers" chosen to help freshmen make the adjustment to college life. The Honors Program Director, whose office is located in John Ballantyne 113, works with the residential life staff to coordinate extra-curricular programming. Honors Program residents traditionally have taken leadership roles in campus politics, social activities and scholarship.

For further information, e-mail the Honors Director, Gregg Camfield, at gcamfiel@pacific.edu, or call (209) 946-2283. http://honors.uop.edu.

Fellowship Adviser

The University's Fellowship Adviser is available to assist students across the university in pursuing national awards that support undergraduate research and graduate study. Fellowships may fund tuition in the U.S. or abroad, sponsor research projects or internships, and provide mentoring in the recipient's chosen field of graduate study. Students considering graduate school are encouraged to contact the Fellowship Adviser early in their academic careers. The freshman year is not too early. For further information, email the Fellowship Adviser, Joy Viveros, at jviveros@pacific.edu, or call (209) 946-2406. http://honors.uop.edu.

International Programs and Services (IPS)

Located in the Bechtel International Center (BIC) between Casa Jackson and Jessie Ballantyne Halls, IPS offers comprehensive services for Pacific international students and scholars coming to the United States as well as for Pacific students wanting to study abroad. IPS serves as a liaison between various University departments and offices, collaborating with them to enhance international education across the campus.

Bechtel International Center

The Bechtel International Center functions not only as home to International Programs and Services, but also as a gathering place for all Pacific students, especially international and multicultural students. BIC is open from 5-11 p.m., Monday through Thursday nights, when classes are in session, and is used as a study center and for student group meetings. The Center may be used by international and multicultural groups for a variety of functions.

International Students and Scholars Services

IPS offers a comprehensive package of services for all international students and scholars attending Pacific. This includes, but is not limited to, counseling about: immigration, academic, financial, and personal issues. The International Adviser and International Counselor also work with Pacific's J-1 Exchange Visitor Program. This program serves both students and scholars (visiting professors and researchers) in the J-1 visa category. For more information call (209) 946-2092.

Study Abroad

The University of the Pacific offers its students the opportunity to study abroad for a semester, an academic year or summer in a variety of Pacific-sponsored programs around the world. Students are encouraged to consider this option as it will enrich their lives, add an essential dimension to study at Pacific, and further career preparation in an increasingly global world.

In addition to its own direct exchange and direct enrollment options, Study Abroad sponsors programs through other universities and consortia. Credit earned on Pacific Abroad is awarded through University of the Pacific. For all Pacific-sponsored Study Abroad programs, students pay Pacific tuition, which covers all program tuition. Most scholarships and federal loans apply.

Requirements for Study Abroad programs vary, but viable options exist for nearly 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. Additionally, most programs incorporate home stays with local families and some the opportunity for independent study and/or travel.

Many Study Abroad sites offer a broad curriculum, although some have a specific academic focus such as business, ecology, language immersion, studio arts or music performance. Field studies and internships in government, business, law, public relations, etc., are also available at numerous sites. All Pacific-sponsored programs offer students the challenges and benefits of studying and immersing themselves in a culture different from their own.

A collaborative orientation course is offered by IPS and the School of International Studies (SIS) to prepare students for their experience abroad. The course, INTL 151-Cross-Cultural Training I, is required for all students studying abroad for a semester or longer. A companion course, INTL 161-Cross-Cultural Training II, also is available for students returning from a study abroad experience. This course helps students critically evaluate their experience abroad. Both courses are two-unit offerings.

For more information on Study Abroad, please call (209) 946-2592, or visit www.pacific.edu/ips

Library Services

The University Library delivers its services from two facilities. The main library, the William Knox Holt Memorial Library, provides resources in the humanities, fine arts, social sciences, music, business, education, natural and physical sciences, and engineering. The focus of the Health Sciences Branch is pharmacy and physical therapy resources. These facilities offer a variety of study settings, including carrels, large tables, lounge areas, and group study rooms. Independent of facilities, a rapidly increasing number of network-based library resources are available throughout the campus, around the clock.

The Library is in the midst of a multi-phase expansion and restructuring project aimed at providing more networked group study rooms, better space for collaborative learning projects, new communication technologies, and increased access to networked information resources and tools. The restructuring project also will improve the arrangement and housing of the Library's book and journal collections as well as numerous archival collections.

Library faculty and staff members are regularly singled out and recognized by students and faculty for their commitment to service and expertise in providing research assistance. Librarians present dozens of classes and workshops each year designed to help students and faculty use library resources and research tools effectively. Most of this instruction includes hands-on learning at computer workstations in our electronic classrooms.

Fletcher Jones Information Commons

An integration of computer lab and library reference services, the main library's Fletcher Jones Information Commons currently provides more than 60 ergonomic workstations, plus stations for laptops, that combine access to library databases and web-based resources with other software tools for creating and presenting academic work (word processing, spreadsheets, e-mail, presentation software, etc.). The Commons is staffed with reference librarians, who assist with research and information questions, and student assistants, who provide technical help with workstations and software tools. The Rite-Aid Information Commons, in the Health Sciences Branch, provides 20 computer workstations.

Library Website: http://library.pacific.edu

This website provides a portal to many crucial research tools: reference sources, PacifiCat (the Library's on-line catalog), periodical and other specialized databases, ebooks, on-line journals and course materials, e-mail reference and interlibrary loan requests.

Interlibrary Loan staff obtain books, journal articles, and documents not held by Pacific from all types of libraries and commercial information providers. Music/AV staff provide access to listening and viewing equipment for sound and video recordings.

Holt-Atherton Special Collections

The primary purpose of the University Library's Holt-Atherton Special Collections is to collect, maintain and provide access to the University's collection of rare books, photographs, and manuscripts. Special Collections' materials do not circulate.

The centerpiece of the book collection is the 45,000-volume Stuart Library of Western Americana. This library focuses on the Trans-Mississippi West with special emphasis on California and the San Joaquin Valley.

There are over 300 manuscript collections. Foremost among these is the John Muir Papers which contain Muir's journals, sketchbooks, correspondence and writings. An important addition is The Dave Brubeck Collection, containing musical manuscripts, recordings, business records, photographs, and newspaper clippings. Special Collections holds 70,000 historic photographs pertaining chiefly to San Joaquin County and the University of the Pacific. There are also collections of 19th and early 20th century maps and newspapers.

Holt-Atherton maintains the University Archives containing records of the administration, faculty and students from 1851 to the present.

Pacific Alumni Association

The Pacific Alumni Association (PAA) includes all alumni of the University of the Pacific. There is no membership fee and services are available to all members. An elected Board of Directors (30) develops programs and benefits with the Office of Alumni Relations. Opportunities provided to alumni through the PAA include Pacific Clubs, alumni reunions, special events, communications and a menu of alumni benefits including debt consolidation. The Pacific Alumni Association encourages alumni to maintain their relationship with the University of the Pacific and with one another. For more information, visit the Pacific Alumni Web site www.pacificalumni.org or call (209) 946-2391.

University Book Store

Students will find the University Book Store, owned and operated by Barnes and Noble, an excellent source for living and learning needs. It provides students with a wide range of products and services for classroom and extracurricular activities. In addition to required and recommended textbooks, a selection of over 2,000 titles is maintained in both academic and general subject areas.

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

University Policy on Disclosure of Student Records

Family Educational Rights and Privacy Act (Buckley Amendment)

The University of the Pacific adheres to a policy of compliance with the Family Educational Rights and Privacy Act (Buckley Amendment). As such, it is the policy of the university (1) to permit students to inspect their education records, (2) to limit disclosure to others of personally identifiable information from education records without students' prior written consent, and (3) to provide students the opportunity to seek correction of their education records where appropriate.

I. Definitions

A. "Student" means an individual who is or who has been in attendance at University of the Pacific. It does not include any applicant for admission to the university who does not matriculate, even if he or she previously attended the university. (Please note, however, that such an applicant would be considered a "student" with respect to his or her records relating to that previous attendance.)

B. "Education records" include those records that contain information directly related to a student and that are maintained as official working files by the University. The following are not education records:

1. records about students made by instructors, professors and administrators for their own use and not shown to others;
2. campus police records maintained solely for law enforcement purposes and kept separate from the education records described above;
3. employment records, except where a currently enrolled student is employed as a result of his or her status as a student;
4. records of a physician, psychologist, or other recognized professional or paraprofessional made or used only for treatment purposes and available only to persons providing treatment.
5. records that contain only information relating to a person's activities after that person is no longer a student at the university.

II. It is the policy of the University of the Pacific to permit students to inspect their education records.

A. Right of Access

Each student has a right of access to his or her education records, except confidential letters of recommendation received prior to January 1, 1975, and financial records of the student's parents.

B. Waiver

A student may, by a signed writing, waive his or her right of access to confidential recommendations in three areas: admission to any educational institution, job placement, and receipt of honors and awards. The university will not require such waivers as a condition for admission or receipt of any service or benefit. If the student chooses to waive his or her right of access, he or she will be notified, upon written request, of the names of all persons making confidential recommendations. Such recommendations will be used only for the purpose for which they were specifically intended. A waiver may be revoked in writing at any time, and the revocation will apply to all subsequent recommendations, but not to recommendations received while the waiver was in effect.

C. Types of Education Records, Titles of Records Custodians

Please note that all requests for access to records should be routed through the Office of the Registrar.

1. Academic Records

   All ongoing academic and biographical records/Registrar.

2. Departments

   Miscellaneous records kept vary with the department/ Department Chairs.

3. Schools/Colleges

   Miscellaneous records/Deans.

4. Residential Life

   Students' housing records/Assistant Dean of Students for Rental Life and Housing.

5. Advisors

   Letters of evaluation, personal information sheet, transcript, test scores.

6. Counseling Center

   Biographical data, summaries of conversations with students, test results. (Where records are made and used only for treatment purposes, they are not education records and are not subject to this policy)/Director.

7. Financial Aid

   Financial aid applications, needs analysis statements, awards made (no student access to parents' confidential statements)/Director of Financial Aid.

8. Career and Internship Center

   Recommendations, copies of academic records (unofficial)/ Director.

9. SUCCESS

   Records of academic progress, transcripts/Director.

10. Business Services

    All student accounts receivable, records of students' financial charges, and credits with the University/Bursar.

11. Services for Students with Disabilities

    Educational, psychological and medical evaluations/reports as well as diagnostic testing informations, including Individualized Education and Transition Plans/Coordinator.

D. Procedure to be Followed

Requests for access should be made in writing to the Office of the Registrar. The University will comply with a request for access within a reasonable time, at least within 45 days. In the usual case, arrangements will be made for the student to read his or her records in the presence of a staff member. If facilities permit, a student may ordinarily obtain copies of his or her records by paying reproduction costs. The fee for copies is $.25 per page. The University will not provide copies of any transcripts in the student's records other than the student's current university transcript. Official university transcripts (with university seal) will be provided at a higher charge.

III. It is the policy of University of the Pacific to limit disclosure of personally identifiable information from education records unless it has the student's prior written consent, subject to the following limitations and exclusions.

A. Directory Information

1. The following categories of information

have been designated directory information:

- Name
- Address
- Telephone listing
- Electronic mail address
- Date and place of birth
- Photograph
- Major field of study
- Participation in officially recognized activities and sports
- Weight and height of members of athletic teams
- Enrollment status (full-, part-time, undergraduate, graduate)
- Dates of attendance
- Degrees and awards received
- Most recent previous educational institution attended
- Grade level

2. This information will be disclosed even in the absence of consent unless the student files written notice requesting the University not to disclose any of the categories within three weeks of the first day of the semester in which the student begins each school year. This notice must be filed annually within the above allotted time to avoid automatic disclosure of directory information. The notice should be filed with the Office of the Registrar. See II.C.
3. The University will give annual public notice to students of the categories of information designated as directory information.
4. Directory information may appear in public documents and otherwise be disclosed without student consent unless the student objects as provided above.
5. All requests for non-disclosure of directory information will be implemented as soon as publication schedules will reasonably allow.
6. The University will use its best efforts to maintain the confidentiality of those categories of directory information that a student properly requests not be publicly disclosed. The University, however, makes no representations, warranties, or guarantees that directory information designated for non-disclosure will not appear in public documents.

B. Prior Consent Not Required

Prior consent will not be required for disclosure of education records to the following parties:

1. School officials of University of the Pacific who have been determined to have legitimate educational interests.
   a. "School officials" include instructional or administrative personnel who are or may be in a position to use the information in furtherance of a legitimate objective;
   b. "Legitimate educational interests" include those interests directly related to the academic environment;
2. Authorized representatives of the Comptroller General of the U.S., the Secretary of Education, the Secretary of the Department of Health and Human Services, the Director of the National Institute of Education, the Administrator of the Veterans' Administration, but only in connection with the audit or evaluation of federally supported education programs, or in connection with the enforcement of or compliance with Federal legal requirements relating to these programs. Subject to controlling Federal law or prior consent, these officials will protect information received so as not to permit personal identification of students to outsiders and destroy such information when it is no longer needed for these purposes;
3. Authorized persons and organizations that are given work in connection with a student's application for, or receipt of, financial aid, but only to the extent necessary for such purposes as determining eligibility, amount, conditions, and enforcement of terms and conditions;
4. State and local officials to which such information is specifically required to be reported.
5. Organizations conducting educational studies for the purpose of developing, validating, or administering predictive tests, administering student aid programs, and improving instruction. The studies shall be conducted so as not to permit personal identification of students to outsiders, and the information will be destroyed when no longer needed for these purposes;
6. Accrediting organizations for purposes necessary to carry out their functions;
7. Parents of a student who is a dependent for income tax purposes. (Note: The University may require documentation of dependent status such as copies of income tax forms.)
8. Appropriate parties in connection with an emergency, where knowledge of the information is necessary to protect the health or safety of the student or other individuals;
9. In response to a court order or subpoena, the University will make reasonable efforts to notify the student before complying with the court order.
10. To an alleged victim of any crime of violence of the results of any institutional disciplinary proceeding against the alleged perpetrator of that crime with respect to that crime.

C. Prior Consent Required

In all other cases, the University will not release personally identifiable information in education records or allow access to those records without prior consent of the student. Unless disclosure is to the student himself or herself, the consent must be written, signed, and dated, and must specify the records to be disclosed, the identity of the recipient, and the purpose of disclosure. A copy of the record disclosed will be provided to the student upon request and at his or her expense.

The University will maintain with the student's education records a record for each request and each disclosure, except for the following:

1. disclosures to the student himself or herself;
2. disclosures pursuant to the written consent of the student (the written consent itself will suffice as a record);
3. disclosures to instructional or administrative officials of the University.
4. disclosures of directory information. This record of disclosures may be inspected by the student, the official custodian of the records, and other university and governmental officials.

D. It is the policy of University of the Pacific to provide students the opportunity to seek correction of their education records.

1. Request to Correct Records

A student who believes that information contained in his or her education records is inaccurate, misleading, or violative of privacy or other rights may submit a written request to the Office of the Registrar specifying the document(s) being challenged and the basis for the complaint. The request will be sent to the person responsible for any amendments to the record in question. Within a reasonable period of time of receipt of the request, the University will decide whether to amend the records in accordance with the request. If the decision is to refuse to amend, the student will be so notified and will be advised of the right to a hearing. He or she may then exercise that right by written request to the Office of the Registrar.

2. Right to a Hearing

Upon request by a student, the University will provide an opportunity for a hearing to challenge the content of the student's records. A request for a hearing should be in writing and submitted to the Office of the Registrar. Within a reasonable time of receipt of the request, the student will be notified in writing of the date, place, and time reasonably in advance of the hearing.

3. Conduct of the Hearing

The hearing will be conducted by a university official who does not have a direct interest in the outcome. The student will have a full and fair opportunity to present evidence relevant to the issues raised and may be assisted or represented by individuals of his or her choice at his or her own expense, including an attorney.

4. Decision

Within a reasonable period of time after the conclusion of the hearing, the University will notify the student in writing of its decision. The decision will be based solely upon evidence presented at the hearing and will include a summary of the evidence and the reasons for the decision. If the University decides that the information is inaccurate, misleading, or otherwise in violation of the privacy or other rights of the student, the University will amend the records accordingly.

5. Right to Place an Explanation in the Records

If, as a result of the hearing, the University decides that the information is not inaccurate, misleading, or otherwise in violation of the student's rights, the University will inform the student of the right to place in his or her record a statement commenting on the information and/or explaining any reasons for disagreeing with the University's decision. Any such explanation will be kept as part of the student's record as long as the contested portion of the record is kept and will be disclosed whenever the contested portion of the record is disclosed.

6. Right to File Complaint

A student alleging university noncompliance with the Family Educational Rights and Privacy Act may file a written complaint with the Family Educational Rights and Privacy Act Office (FERPA)

Department of Education
600 Independence Ave, S.W.
Washington, D.C. 20202-4605.

general education program

Pacific's general education prepares students for a lifetime of reflection and for the application of knowledge to everyday life. It liberates the individual and energizes the citizen. The program balances the depth of study in a major with a broad introduction to different academic areas and disciplines. It exposes students to various ways critical thought is organized and develops fundamental skills—such as writing, analytical thinking, critical reading, quantitative analysis, and oral presentation skills—that are transferable to any kind of study. The exposure to different areas of study and the development of intellectual and practical skills promote the mission of Pacific's general education: self-understanding, citizenship, and career development.

"Our most important task, we think, is not to train for a meal ticket the week after graduation, but to educate for 50 years of self-fulfillment."

Harlan Cleveland, *The Knowledge Executive* – Leadership in an Information Society

Mission

Self-Understanding

One goal of Pacific's general education program is fundamentally personal: to enrich students' self-understanding and expand their interests in preparation for a fulfilling life. Students are exposed to new intellectual, moral, spiritual, and aesthetic possibilities. Through the interaction with others from different backgrounds and the study of different disciplines, students come to understand who they are and the sources of their beliefs. They thus gain the skills to identify, express and analyze their beliefs and to fashion a philosophy of life that can guide them in their future endeavors. Students may also find life-long pleasure in learning, self-reflection, and conversation.

Citizenship

Another goal is to produce engaged and informed citizens who advance a democratic society by contributing to political and civil life and by committing themselves to the service of others. General education fosters the skills to evaluate complex social and political issues and teaches the moral and political grounds that inform political action and service in a democracy. The health of a society depends on informed and active citizens who do what is right and value the public good over narrow self-interest.

Career Development

Finally, the general education program prepares students to enter professional life by developing practical skills that are valuable to employers and essential to civil society. These skills include the abilities to express oneself clearly and cogently in writing and orally, to be diligent and careful in the preparation of one's work, to interpret and evaluate information, to think creatively in order to solve problems, to work independently as well as collegially in groups with a sensitivity toward cultural differences, to use technology, and to treat others ethically in their professional interactions.

Outcomes

Pacific's general education mission of fostering self-understanding, citizenship and career development is advanced by the completion of three Pacific Seminars and the breadth program courses, all of which develop the following base of knowledge and intellectual and practical skills:

Knowledge	Intellectual and Practical Skills
Biological or physical science	Written communication
Social science	Oral communication
Mathematics	Critical and creative thinking
Humanities	Quantitative literacy
Arts	Research skills
	Cross-cultural Awareness
	Ethical reasoning
	Civic responsibility and engagement
	Aesthetic judgment

Coursework

The course of study described below is required for all students completing a bachelor's degree or a first professional degree from the University. Students must complete three Pacific Seminars and a breadth program that ranges from six to nine courses, depending on the academic unit. Students must also satisfy the fundamental skills requirements in writing, reading, and quantitative analysis.

The Pacific Seminars

The Pacific Seminars are the distinctive feature of Pacific's general education program. They focus on the question, "What is a Good Society"? The seminars are taught by faculty from all academic divisions (humanities, social sciences, and natural sciences) and academic units. Pacific Seminars I and II are taken in the first year, and Pacific is one of only a few universities in the nation that has a full first-year general education experience. Pacific Seminar III is taken in the senior year and serves as a culminating general education experience.

Pacific Seminar I: What is a Good Society? (4 Units)

During the first semester of the freshman year, all students must take **Pacific Seminar I: What is a Good Society?** The course is a broad introduction to the fundamental issues of a good society, such as the purposes of education, the role of the family, the nature of work and the economy, the value of the arts and sciences, the purposes of law and government, the rights and responsibilities of the citizen, and the place of humans in the natural world. Students meet in small sections to discuss the readings and issues and develop their writing, reading, critical thinking, and oral presentation skills. Pacific Seminar I is a shared intellectual experience since there is a common course syllabus and a common reader. The reader has material from the humanities, social sciences, and natural sciences, and so the course also serves as a 'living university catalog' for the different disciplines.

Pacific Seminar II: Topical Seminars (3 Units)

In the second semester of the freshman year, all students must take a **Pacific II Topical Seminar**. Whereas Pacific Seminar I introduces students generally to issues of a good society, the Pacific II Topical Seminars focus in depth on a particular issue or issues. Some sample seminars are "War, Nonviolence, and Pacifism," "Controversial Issues in Modern Science and Medicine," "Perilous Earth: Natural Disasters in Human History," and "Conflict Management: Interpersonal to International Solutions." The seminars are offered from virtually every department and academic unit on campus and will be some of the most innovative courses at Pacific. During registration, students will list their top choices of topical seminars and be placed in one of them. Students meet in small sections to discuss the readings and issues, and all sections will include a minimum amount of formal writing, a scholarly research project, and an oral presentation.

Pacific Seminar III: Family, Work, Citizenship (3 Units)

In their senior year, students take **Pacific Seminar III: The Ethics of Family, Work, and Citizenship.** This course is a culminating general education experience. Students learn about ethical concepts and theories in order to identify their individual ethical values and ethical paradigm and to analyze ethical issues within the contexts of family/friends, work, and political life. Narrative is used—in particular, film and biographies—to illustrate ethical issues for discussion. Students will write an ethical and intellectual autobiography in order to reflect back on their ethical and intellectual development at the university and to look forward to their future roles as family members and friends, as part of the workforce, and as citizens and members of communities ranging from the local to the national and global. Students' autobiographies will be supported by an electronic portfolio of work collected from Pacific Seminars I and II and the courses from the breadth program.

All students who enter the University as freshmen must complete Pacific Seminars I and II. A 'freshman' is defined as a student who has earned fewer than 16 units of transferable, classroom college level work completed after high school graduation. Students are not allowed to drop these courses for any reason, even if they plan to transfer to another college or university. Freshmen entering in the spring semester begin the Pacific Seminar sequence the following fall. Students who would benefit from special attention to reading and writing skills are deferred from the Pacific Seminar sequence until their sophomore year.

Students who fail Pacific Seminar I or II are subject to academic probation and must repeat them in the next academic year. Students can repeat a different Pacific Seminar II course. If students do not pass Pacific Seminars I or II in their first four semesters, they are subject to disqualification and must complete an additional course in the general education breadth program as determined by the student's general education unit coordinator. The Pacific Seminars cannot be repeated if students earn a "D" or higher.

The Breadth Program 6-9 Courses (3 or 4 Units Each)

The general education program beyond the Pacific Seminars provides students with considerable choice but within a framework that ensures they gain essential knowledge and skills in order to meet the personal and professional challenges after graduation. With the help of their advisers, students choose courses in the breadth program that interest them or that relate to other courses in their planned course of study.

Students enrolled in schools or colleges other than the College of the Pacific are required to satisfactorily complete six courses. Two courses should be selected from each of the major categories listed below (I, II or III). However, only one class can come from each subdivision (A, B or C) and of the two courses taken under the third category, one must be from the first subdivision and the other from the second. Courses in the breadth program component of the general education program will normally have a value of three or four units.

There is an important exception in category II-C Practice and Perspective in the Visual and Performing Arts. In this area students may take three 1-unit courses in applied music or dance to meet the requirement.

For those enrolled in the College of the Pacific, nine courses are required, one from each subdivision listed below. The only exception to this rule is in category III where students may take two courses under the first subdivision rather than one course each under the first and third subdivision.

The structure of the breadth program is as follows:

I. The Individual and Society

- A. Individual and Interpersonal Behavior
- B. Society and Culture in the United States
- C. Society and Cultures Outside the United States

II. Human Heritage

- 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

- A. Life and Physical Laboratory Sciences
- B. Formal Systems of Thought
- C. Science, Technology and Society

The titles of the courses themselves are listed by category and subdivision later in this section.

Students may request from their Unit Coordinators of General Education Advanced Placement (AP) or International Baccalaureate (IB) credit based on minimum scores of 4 in AP and 5 in IB for a maximum of two courses or 8 units total in the breadth program. No more than 4 units can be counted within a single main category (I, II or III).

Fundamental Skills

As part of the general education program, all students are required to be competent in three fundamental skills at entrance: reading, writing and quantitative analysis. Students may demonstrate competence in these skills in one of three ways: 1) completion of approved, college-level courses at an accredited college or university; 2) satisfactory performance on an approved, nationally administered examination; or 3) satisfactory performance on examinations given at Pacific during new student orientation or shortly thereafter.

Students can meet these fundamental skills by taking course work to improve their skills as follows:

- To show competency in quantitive analysis (math), students must successfully complete MATH 5 (Intermediate Algebra), Statistics, or an equivalent course from another accredited college or university during the first full year of study including summer sessions.
- To show competency in writing, students must successfully complete WRIT 21 (Writing for College) or an equivalent course from another accredited college or university during the first full year of study including summer sessions.
- To show competency in reading, students must successfully complete READ 31 (Reading for College) during the first full year of study including summer sessions.
- Successful completion of course work in quantitative analysis, writing and reading requires a grade D or better. Course work taken in quantitative analysis or writing at another college or university must be approved in advance.
- Failure to make progress toward remediation of a basic skill deficiency during the first year of study will be grounds for being placed on academic probation. Failure to satisfy the basic skill requirements by the end of four semesters of full-time study at the University will be grounds for academic disqualification.
- Students with documented learning or physical disabilities which directly affect their mastery of these skills or students concurrently enrolled in an approved English-as-a-Second-Language (ESP) Program of instruction in reading and writing may seek a written waiver of the deadline for demonstrating competence.
- The quantitative analysis (math), writing, and reading requirements must be met before a student graduates with a bachelor's degree or a first professional degree.

Requirements for Transfer Students

All students entering the University of the Pacific, including transfer students, must complete an approved general education program before graduation. The University general education program consists of fundamental skills, the breadth program and the Pacific Seminars.

Fundamental Skills Requirements:

Fundamental skills requirements for transfer students include reading, writing and quantitative analysis (math). All transfer students take the fundamental skills reading test upon entry to the University, regardless of coursework taken in reading while at their previous institution. Transfer students are exempted from taking the skills tests in writing and math if they completed transferable courses in these areas with passing grades (D or better). Placement tests taken by transfer students at their previous institution will not replace Pacific's tests.

Breadth Program Requirements:

Transfer students from California who have completed the IGETC General Education requirements at their previous institutions will have their transcripts and IGETC verification documents for the breadth program requirements examined upon entry to the University. At most, these students will have only two additional breadth program courses to complete.

Transfer students who have not completed IGETC General Education requirements will have their transcripts and general education verification documents for breadth program requirements examined upon entry to the University. General education courses taken by these students at their previous institutions which are of the same quality and equivalency as courses offered at Pacific will be applied for breadth program requirements at Pacific.

Pacific Seminar Requirements:

Transfer students who have completed 16 or more transferable, classroom college level units after high school graduation are not required to take Pacific Seminar III unless their program at Pacific requires it.

Individual schools and colleges may impose general education graduation requirements, including skills requirements, beyond the University's general education program.

Transfer students who entered the University prior to the 1993-94 academic year and who desire an evaluation of their records in regard to general education should contact the General Education Unit Coordinator of their school and college.

Breadth Course Lists for General Education

The courses listed below are approved as counting toward the breadth program requirement in each of the nine areas of the program. Students satisfying II-C with one-unit dance or theatre courses must complete three courses in the same discipline. 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

COMM 43	Introduction to Interpersonal Communication
CURR 115	Introduction to Language
ECON 53	Introductory to Microeconomics
ENGL 122	Literature and Psychology
GEND 11	Introduction to Gender Studies
PSYC 29	Child Development
PSYC 31	Introduction to Psychology
PSYC 66	Human Sexuality
PSYC 110	Psychoactive Drugs and Behavior
PSYC 111	Abnormal Psychology
PSYC 131	Adolescence and Young Adulthood
PSYC 133	Adulthood and Aging
SLPA 51	Introduction to Speech-Language Pathology
SOCI 131	Deviant Behavior
SOCI 133	Criminology

I-B. Society and Culture in the United States

BUSI 53	Legal and Ethical Environment of Business
COMM 31	Introduction to Mass Communication
ECON 51	Economic Principles and Problems
ECON 55	Introductory Macroeconomics
ENGL 51	American Literature Before 1865
ENGL 53	American Literature After 1865
ETHN 11	Introduction to Ethnic Studies
HIST 20	US History I

HIST 21 US History II
HIST 133 Women in US History
HIST 134 African-American History
POLS 41 US Government and Politics
RELI 70 Religion and American Culture
SOCI 51 Introduction to Sociology
SOCI 61 Urban Society
SOCI 102 Culture and Society
SOCI 104 Sociology of Sport
SPTS 141 Sport in America

I-C. Society and Cultures Outside the United States

ANTH 53 Cultural Anthropology
CHIN 23 Intermd. Chinese, 3rd Sem
CHIN 25 Intermd. Chinese, 4th Sem
CLAS 51 Classical Mythology
CLAS 100 History of Ancient Greece
CLAS 102 History of Ancient Rome
COMM 143 Intercultural Communication
FREN 23 Intermd. French, 3rd Sem.
FREN 25 Intermd. French, 4th Sem.
FREN 122 La Francophonic
GERM 23 Intermd. German, 3rd Sem.
GERM 25 Intermd. German, 4th Sem.
HIST 30 East Asian Civilization I
HIST 31 East Asian Civilization II
HIST 40 Latin American Civilization I
HIST 41 Latin American Civilization II
HIST 61 A Global History of Food
HIST 102 The Spanish Empire
HIST 103 The Roots of Russian History
HIST 105 History of Ancient Greece
HIST 106 History of Ancient Rome
HIST 111 Europe in Turmoil, 1900-1945
HIST 113 Europe Since 1945
HIST 115 History of Modern Russia
HIST 116 History of Soviet Foreign Policy
HIST 120 Native American History
HIST 132 History of American Immigration
HIST 141 Pre-Modern China to 1840
HIST 142 Modern Chinese History
HIST 150 Women in Latin America
HIST 151 History of Mexico
INTL 123 Literature Across Cultures
JAPN 23 Intermd. Japanese, 3rd Sem
JAPN 25 Intermd. Japanese, 4th Sem
MHIS 6 Music of the World's People
POLS 11 Introduction to Political Science
POLS 51 International Politics
POLS 148 Politics of the Middle East
POLS 152 Politics of Asia
RELI 35 Judaism
RELI 130 The Christian Tradition
RELI 134 World Religions
RELI 135 Asian Religious Traditions
RUSS 23 Intermd. Russian, 3rd Sem
RUSS 25 Intermd. Russian, 4th Sem
RUSS 73 Russian Culture and Civilization
SOCI 108 Food, Culture and Society
SPAN 23 Intermd. Spanish, 3rd Sem
SPAN 25 Intermd. Spanish, 4th Sem

II-A. Literature, Letters and Language

CHIN 11a First-Year Chinese, 1st Sem
CHIN 11b First-Year Chinese, 2nd Sem
COMM 27 Public Speaking
CURR 123 Intro to Syntax and Semantics
ENGL 25 English 25
ENGL 41 British Literature Before 1800
ENGL 43 British Literature After 1800
ENGL 131 Shakespeare
FREN 11a First-Year French, 1st Sem
FREN 11b First-Year French, 2nd Sem
FREN 51 French Literature in English
GERM 11a First-Year German, 1st Sem
GERM 11b First-Year German, 2nd Sem
GERM 128 German Poetry
GREK 11a First-Year Ancient Greek, 1st Sem
GREK 11b First-Year Ancient Greek, 2nd Sem
GREK 23 Intermediate Greek, 3rd Sem
GREK 25 Intermediate Greek, 4th Sem
GREK 127 Advanced Greek
JAPN 11b First-Year Japanese, 2nd Sem
JAPN 11a First-Year Japanese, 1st Sem
LATN 11a First-Year Latin, 1st Sem
LATN 11b First-Year Latin, 2nd Sem
LATN 23 Intermediate Latin, 3rd Sem
LATN 25 Intermediate Latin, 4th Sem
LATN 127 Advanced Latin
LATN 151 Intensive Latin for Language Students
RUSS 11a First-Year Russian, 1st Sem
RUSS 11b First-Year Russian, 2nd Sem
SLPA 53 Beginning Sign Language I
SPAN 11b First-Year Spanish, 2nd Sem
THEA 113 Theatre Heritage I
THEA 115 Theatre Heritage II

II-B. Fundamental Human Concerns

CLAS 110 Greek Literature in Translation
CLAS 112 Latin Literature in Translation
CLAS 120 Sexuality in Greek Society
CLAS 122 Sexuality in Roman Society
ENGL 141 Topics in British Literature pre 1800
HIST 10 Western Civilization I
HIST 11 Western Civilization II
HIST 60 History of Medicine
HIST 62 History of Warfare
HIST 64 Peace and War
HIST 65 Women and War
HIST 100 Renaissance and Reformation
HIST 135 Women in Time and Place
INTL 81 Perspectives on World History
PHIL 11 Introduction to Philosophy
PHIL 21 Moral Problems
PHIL 25 The Meaning of Life
PHIL 27 Fundamentals of Ethics
PHIL 35 Environmental Ethics
PHIL 47 Philosopher in Depth
PHIL 53 Ancient and Medieval Philosophy
PHIL 55 History of Modern Philosophy
PHIL 124 Philosophy of Religion
PHIL 145 Biomedical Ethics
RELI 23 Hebrew Bible
RELI 25 New Testament and Christian Origins
RELI 27 Portraits of Jesus
RELI 34 Introduction to Religion
RELI 43 Social Ethics
RELI 44 Sex, Sin and Salvation
RELI 70 Religion and American Culture
RELI 142 Business Ethics
RELI 145 Biomedical Ethics
RELI 172 Biblical Themes in Literature

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

ARTH 7 Survey of World Art to 1400
ARTH 9 Survey of World Art After 1400
ARTH 108 Renaissance Art and Architecture
ARTH 114 20th Century European Art
ARTH 116 Contemporary World Art & Film
ARTH 118 Art in the US 1865-1945
ARTH 124 Sex, Gender and the Arts
ARTH 130 Greek Art and Architecture
ARTH 132 Roman Art and Architecture
ARTS 3 Visual Arts Exploration
ARTS 5 Drawing
ARTS 7 2-D Design & Color
ARTS 9 3-D Design
ARTS 11 Photography I
ARTS 35 Ceramics
ARTS 37 Sculpture
ARTS 45 Digital Photography
ARTS 47 Digital Media Survey
ARTS 131 Visual Arts in Education
CHIN 120 Asian Cinema
CLAS 130 Greek Art and Architecture
CLAS 132 Roman Art and Architecture
ENGL 31 Aesthetics of Film
ENGL 121 Major Filmmakers
ENGL 123 Film. Literature and the Arts
FREN 120 Le Cinema Francais/French Cinema in English

MCOM 2	Fundamental Structures
MHIS 5	Music Appreciation
MHIS 8	History of Jazz
MPER 66	Jazz Ensemble (Note: 1 unit course)
MPER 70	University Symphony Orchestra (Note: 1 unit)
MPER 72	Symphonic Wind Ensemble (Note: 1 unit)
MPER 73	Concert Band (Note: 1 unit)
MPER 82	Oriana Choir (Note: 1 unit)
MPER 83	University Chorus (Note: 1 unit)
MPER 84	Pacific Singers (Note: 1 unit)
RELI 171	Religion and Cinema
RUSS 120	Contemporary Russian Film
THEA 11	Introduction to Theatre
THEA 51A	Ballet (Note: 1 unit course)
THEA 51B	Jazz (Note: 1 unit course)
THEA 51C	Modern Dance (Note: 1 unit course)
THEA 51D	Tap (Note: 1 unit course)
THEA 71	Beginning Acting
THEA 75	Expressive Movement
THEA 130	Puppetry & Mask Making

III-A. Life and Physical Laboratory Science

BIOL 11	Human Anatomy and Physiology
BIOL 41	Introduction to Biology
BIOL 51	Principles of Biology
BIOL 61	Principles of Biology
BIOL 74	Biology of Insects
BIOL 79	California Flora
CHEM 23	Elements of Chemistry
CHEM 25/27	General Chemistry
GEOS 51	Physical Geology
GEOS 53	Geologic Evolution of the Earth
GEOS 55	Physical Geology
GEOS 57	Earth Systems Science
GEOS 61	Geology of California
PHYS 17	Concepts of Physics
PHYS 23	General Physics I
PHYS 25	General Physics II
PHYS 39	Physics of Music
PHYS 41	Astronomy
PHYS 53	Principles of Physics I
PHYS 55	Principles of Physics II

III-B. Formal Systems of Thought

COMP 25	Computers and Information Processing
COMP 47	Discrete Mathematics for Computer Science
COMP 51	Computer Science I
GEOS 102	Spatial Analysis and GIS
MATH 33	Elements of Calculus
MATH 35	Elementary Statistical Inference
MATH 37	Introduction to Statistics and Probability
MATH 39	Probability with Applications to Statistics
MATH 41	Pre-calculus
MATH 45	Introduction to Finite Mathematics and Calculus
MATH 51	Calculus I
MATH 53	Calculus II
MATH 55	Calculus III
MATH 72	Operations Research Models
PHIL 37	Introduction to Logic
PSYC 103	Statistical Inference in Behavioral Sciences

III-C. Science, Technology and Society

ANTH 112	Physical Anthropology
BIOL 35	Environment: Concepts and Issues
COMP 41	Great Ideas in Computing
ENGR 10	Info-Highway: Past to Present
ENGR 11	Technology and Society
GEOS 41	Environmental Geology
GEOS 43	Environmental Science: Informed Citizens
GEOS 45	Soil, Water and War
PHIL 61	Philosophy of Science
RELI 146	Technology, Ethics and Religion
SPTS 41	Heart, Exercise and Nutrition
SPTS 45	Science of Nutrition

college of the pacific

Dean
Bob Cox, Interim

Senior Associate Dean
Edith Sparks

Assistant Dean
Douglas Tedards

Department Telephone
209.946.2141

Website
www.pacific.edu/cop/

Contents

The home of the arts and sciences at the University of the Pacific, featuring over 60 majors and minors and opportunities for interdisciplinary and experiential study.

The College provides a contemporary liberal arts experience from inside a comprehensive university. Within a context of high academic expectations, the College offers students the opportunity to engage in exploration, inquiry, and discovery: exploration of the world around them and of themselves and inquiry into philosophical, social, and natural phenomena that leads to different types of meaningful discovery.

Students in the College study with internationally recognized faculty who are committed to undergraduate teaching. Learning takes place both in the classroom and outside it as students and faculty interact as scholars, mentors, and ultimately as friends. Our experiential learning guarantee allows students to have hands-on learning opportunities working one on one with faculty on research projects or undertaking internships, overseas study, or voluntary service.

Each academic department in The College is a unique but integral part of the College of the Pacific Community, which in turn is an integral part of the University Community. With the assistance of faculty advisers, students plan their academic programs to include courses required by the majors and minors they have selected, general education courses, and courses that satisfy each student's individual interests.

The College also provides curriculum support for, and joint degrees and interdisciplinary programs with, the eight other schools of the University.

General Education Requirements

College of the Pacific students participate in the University general education program. The curricular emphasis of the College of the Pacific is on the liberal arts, and participation in the program is a vital part of the student's academic program. Freshmen are required to take Pacific Seminars I, II and III.

A. In addition to participation in three Pacific Seminars, College of the Pacific students are required to successfully complete nine courses, three in each of the three main categories of the University general education program, totaling a minimum of 42 units. Students must take three courses listed under Category I-The Individual and Society (one in each subcategory), and three courses listed under Category II-Human Heritage (one in each subcategory). In Category III-The Natural World and Formal Systems of Thought, students have the option of taking one course from each of the three areas, or two courses from area A-Life and Physical Laboratory Sciences, and one course from area B-Formal Systems of Thought.

B. Pacific Seminars cannot be taken pass/no credit.

C. 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.

D. Units earned by correspondence; online, or independent study may not count in general education except with the permission of the General Education Coordinator/Assistant Dean of the College.

E. Students with AP scores of 4 or above and IB scores of 5 or above may request a maximum of two courses/8 units credit over two different general education categories (I, II, III) from the College's General Education Coordinator.

F. 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 from the College Academic Affairs Office. 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. Students completing the IGETC (CSU or UC) general education requirements at California Community Colleges will also have their transcripts and GE Certification Documents examined at the time of matriculation to assure that they meet the total 12 course/42 unit minimum requirement covering all nine areas of the University general education program (I-A through III-C).

Students pursuing a degree in another school of the University may elect to complete a major in the College of the Pacific without fulfilling the general education requirements of the College in addition to those of the school granting the degree.

College of the Pacific Language Requirement

In order to promote an appreciation of diverse cultures and to encourage greater understanding of the English language, the College of the Pacific requires one year of college instruction or equivalent training in a language other than English for all students seeking a Bachelor of Arts (B.A.) degree. Students who transfer to University of the Pacific with sophomore standing or above, or who seek a Bachelor of Science (B.S.) degree or a Bachelor of Fine Arts (B.F.A.) degree, are exempt from this requirement, but are encouraged to cultivate their language skills.

This requirement can be met entirely, or in part, by completing coursework at the College, at approved colleges and universities, or by examination. To fulfill the requirement by completing coursework, a grade of C- or better must be obtained in the second semester course. In addition to modern and ancient written languages, students may elect to complete the requirement in American Sign Language. Computer languages cannot be substituted for the requirement. Individual departments may choose to increase, but not to decrease, the level of proficiency required.

While the University makes every effort to meet student interests and needs, it does not guarantee that every student will be able to fulfill this requirement by studying his or her first choice of a language. The University also does not guarantee that students studying languages other than those offered through the Pacific Department of Modern Language and Literature will have access to the courses needed to complete the requirement. In some cases, a student taking language courses not offered by the Department of Modern Language and Literature may also need to pass an approved competency examination in addition to his or her course work. As with all subjects, students must get prior approval before taking course work outside of the University that they intend to use toward completion of their Pacific degree.

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 and majors in pre-professional studies, such as pre-law. The College of the Pacific also has cross-disciplinary majors combining two areas of study, such as chemistry/biology. There are multi-disciplinary majors which combine the resources of several departments, such as liberal studies.

A unique opportunity for students who have special academic or career objectives 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. All self-designed majors must be approved by the Associate Dean of the College.

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 Gladys L. Benerd School of Education. There are several programs in the College which include coursework from the Eberhardt School of Business. 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 20 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 toward a minor cannot be taken on a "pass/no credit" basis and no more than two courses in the minor may count in the general education program. 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 add a minor, students must complete a Declaration of Minor form, available from the chair of the appropriate department or the College Academic Affairs Office.

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

Special On-Campus Minor Programs

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 Associate Dean of the College 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 five courses, of which not more than two 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 two courses may be completed outside the University. Some advanced courses must be included.

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 200 locations. The duration of study abroad programs varies from one summer, one semester, or one year. The countries include: Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Malta, Netherlands, Norway, Russia, Spain, Sweden, Switzerland and the United Kingdom in Europe; China, Hong Kong, India, Indonesia, Japan, Korea, Nepal, Philippines and Thailand in Asia; Australia and Fiji in the South Pacific; Cameroon, Egypt, Ivory Coast, Kenya, Morocco, Nigeria, Senegal, Tanzania, 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 and Services in the Bechtel International Center.

The Washington Semester Program

This program is conducted by American University in Washington, D.C., and is open to academically qualified juniors and seniors. Students live on campus in Washington, D.C., attend seminars with government officials and take part in internships. Special topics include foreign policy, economic policy, justice and journalism. 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 supervised by a Pacific faculty member.

The Sacramento Experience Internship Program

Undergraduate students throughout the University may apply for internship opportunities which are available in government agencies and with lobbying organizations located in Sacramento. Similar experiences can be arranged with public agencies having a local or regional focus. Placements are made individually in accordance with student interests. Components of the program are classroom study, research projects, an internship position, and workshops allowing for interaction with leaders in the public policy process. Credits are variable according to program requirements of each student. More information is available at the Jacoby Center for Community and Regional Studies, located on the second floor of the Wendell Phillips Center.

The College of the Pacific Student at University of the Pacific

The cooperative relationship between the College of the Pacific and other schools and colleges on the Stockton campus offers the College student opportunities for personal and intellectual enrichment. Students from the College 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.

Most students live on campus in residences which are close to classrooms and laboratories. Students govern their own residence 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 the College 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.

During the senior year, students have an opportunity to compete for student awards such as the Frederick J. and Marguerite C. Early Undergraduate Science Research Award.

Student Government in The College

Students participate in determining the academic and social policies of the College. They are voting members of virtually all College standing committees where important questions of policy are discussed.

The College of the Pacific Association (COPA) provides students with an opportunity to become involved in 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 students and the appointment of representatives to College and University committees.

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

Applied Mathematics (B.S.)
Art (B.A.)
Biochemistry (B.S.)
Biological Sciences (B.A., B.S., M.S.)
Chemistry (B.A., B.S., M.S., Ph.D.)
Chemistry-Biology (B.S.)
Communication (B.A., M.A.)
Economics (B.A., B.S.)
English (B.A.)
Environmental Studies (B.A.)
French (B.A.)
Geology (B.A., B.S.)
Geophysics (B.S.)
Graphic Design (B.F.A.)
History (B.A.)
Japanese (B.A.)
Liberal Studies (B.A.)
Mathematics (B.A., B.S.)
Philosophy (B.A.)
Physics (B.A., B.S.)
Political Science (B.A.)
Psychology (B.A., M.A.)
Religious Studies (B.A.)
Self-Designed (see the Associate Dean of the College)
Social Sciences (B.A.)
Sociology (B.A.)
Spanish (B.A.)
Sport Sciences (B.A., M.A.)
Studio Art (B.F.A.)
Theatre Arts (B.A.)

The College offers more than 30 minors in various programs in the natural sciences, social sciences, humanities, and visual and performing arts. Please see individual department sections of this catalog for more information.

General Academic Regulations

Requirements for Graduation

1. 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 University of the Pacific and all courses taken as part of the major program. The Bachelor of Fine Arts degree requires 136 units.
2. In order to complete the requirements for a baccalaureate degree, at least 32 of the last 40 units must be earned at University of the Pacific. To obtain a second baccalaureate degree, the candidate must complete at least 32 units at University of the Pacific after the awarding of the first degree.
3. Students must complete a major program of study 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. Courses taken in the major must be taken on a letter grade basis with exceptions made for internships, fieldwork, and practicums.
4. In order to receive a B.A. or B.S. degree in The College, students must complete a minimum of 64 units outside the discipline of their first major, regardless of the department offering the course or courses. In order to receive a B.F.A. degree, students must complete a minimum of 53 units outside the dis-

cipline of their first major, regardless of the department offering the course or courses.

5. 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 and the statement on College of the Pacific general education modifications for the requirements of the program. Students are encouraged to consult with their advisers or the College Academic Affairs Office if they have any questions or problems.

Special Requirements for Transfer Students

1. 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 College Academic Affairs Office to determine 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.
2. For College of the Pacific students, a minimum of 124 units are required for graduation. (Certain major programs may require additional units.)
3. 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.
4. Transfer courses are given departmental designations at the time of transfer. In order to receive a B.A. or B.S. degree in The College, students must complete a minimum of 64 units outside the discipline of their first major, regardless of the department offering the course or courses. In order to receive a B.F.A. degree, students must complete a minimum of 53 units outside the discipline of their first major, regardless of the department offering the course or courses.

Academic Honors

Honors at graduation are awarded upon the recommendation of the faculty to students achieving a grade point average, appropriately computed, of: cum laude, 3.50; magna cum laude, 3.70; summa cum laude, 3.90. Each semester students earning a grade point average of 3.50 or higher in 12 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

1. With few exceptions, courses taken in the major must be on a letter grade basis. Students are permitted to take up to three 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. Students electing this option in College of the Pacific courses must understand that a grade of "pass" will be awarded for work evaluated at the level of C- or better and a grade of "no credit" will be awarded for work evaluated at the level of D+ or below. 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.
2. 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 SPTS 11 and SPTS 13 in the Department of Sport Sciences are deemed Physical Education Activity and Intercollegiate Athletics classes respectively, and are graded on a pass/no credit basis only. Fieldwork courses are normally graded on a pass/no credit basis also.
3. 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

1. 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.
2. 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 #6 below.
3. 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. 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 (subscript) or exceed the 20-unit limitation (see "F" below). In some cases, the department may indicate special restrictions.

4. Courses numbered SPTS 11 in the Department of Sport Sciences and THEA 5 and 7 in the Theatre Arts Department are Activity courses. Courses numbered SPTS 12 are Club Sports courses and courses numbered SPTS 13 are Intercollegiate Athletics courses. Students will be able to apply no more than a total of eight units in Activity, Club Sports and Intercollegiate Athletics courses toward graduation. Only four of the eight units can be in Club Sports and 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, Club Sports and Intercollegiate Athletics classes will be evaluated on the pass/no credit basis.
5. A total of no more than eight units of extension credit offered by 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.
6. No more than 20 units of Cooperative Education (92/192), Internship (87/187), Practicum (89/189), Physical Education Activity (SPTS 11), Club Sports (SPTS 12), Theatre Activity (THEA 5), Dance Team (THEA 7) and Intercollegiate Athletics (SPTS 13) courses in any combination may be applied to the units required for a baccalaureate degree. See Communications Department for further restrictions on Communication internships.
7. Courses numbered 201 to 299 carry credits for graduate degrees.
8. Courses numbered above 300 are exclusively for students admitted to a doctoral program.

   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.
9. 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.
10. 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.
11. Normally, odd-numbered courses are offered every year; even-numbered courses are offered every other year.

Biological Sciences

Professors: L. Christianson, Tenaza

Associate Professors: Jongeward (Chair), Maxwell, Moore, Thomas, Vierra (Assistant Chair)

Assistant Professors: C.G. Anderson, Brunell, G. Lin Cereghino, J. Lin Cereghino, Land, Wrischnik

Department Phone: (209) 946-2181

Website: www.pacific.edu/cop/biology

Degrees in Biological Sciences

The Department of Biological Sciences provides curricula leading to a Bachelor of Science or a Bachelor of Arts in Biological Sciences. In addition, the department cooperates with the Department of Chemistry in offering a Bachelor of Science degree in Chemistry/Biology.

Career Opportunities

The program of studies is sufficiently flexible to prepare students to pursue careers in cell and molecular biology, botany, microbiology, physiology or zoology as graduate students. Programs in the department also prepare students for professional fields such as dentistry, medicine, pharmacy, medical technology, nursing or physical therapy. No matter what career objective, the student will be exposed to the major areas of the biological sciences, and thus will be able to make an intelligent choice of specialization in post-baccalaureate study.

Preparation for admission to the undergraduate program should include high school work in algebra, geometry, trigonometry, biology, chemistry and physics.

Typical First-Year Program

Fall:	BIOL 51
	CHEM 25
	Pacific Seminar I
	General Education Course (I or II)
Spring:	BIOL 61
	CHEM 27
	Pacific Seminar II
	General Education Course (I or II) or Math Course

Bachelor of Arts Requirements

The Bachelor of Arts option permits flexibility in the selection of electives.

Biological Sciences

51	Principles of Biology
61	Principles of Biology
101	Genetics
175	Ecology
179	Evolution

Three electives (numbered above BIOL 61, but not including BIOL 89, 93, 191 or 197; a minimum of two of the electives must have a laboratory component).

Chemistry

25	General Chemistry
27	General Chemistry

Physics

23	General Physics I
25	General Physics II

Mathematics

Two courses in Mathematics (MATH 33 or higher; one course in statistics recommended; credit will not be given for both MATH 33 and MATH 51, and only MATH 51 serves as the prerequisite for MATH 53). AP credits may be accepted for MATH 51 (AB test) and MATH 53 (BC test) as part of the major.

Two additional electives

Two additional electives in Biological Sciences (restricted as above, and at least one of the two must have a laboratory component) or Chemistry (numbered CHEM 121 or higher, but not including CHEM 191 or CHEM 197),

or one course each in either Biological Sciences, Chemistry or Geology (not including GEOS 191).

Bachelor of Science – Biology Requirements

The Bachelor of Science option is designed for pre-professional students and others who require Organic Chemistry for post-baccalaureate study.

Biological Sciences

51 Principles of Biology
61 Principles of Biology
101 Genetics
175 Ecology
179 Evolution

Five electives (numbered above BIOL 61, but not including BIOL 89 or BIOL 93; four units of BIOL 197 may be included or four units of BIOL 191, but the latter only with departmental approval; a minimum of three of the electives must have a laboratory component). The above classes must total 38 or more units.

Chemistry

25 General Chemistry
27 General Chemistry
121 Organic Chemistry I
123 Organic Chemistry II

Physics

23 General Physics I or 53 Principles of Physics I
25 General Physics II or 55 Principles of Physics II

Mathematics

Two courses in mathematics (MATH 33 or higher; one course in statistics recommended; credit will not be given for both MATH 33 and MATH 51, and only MATH 51 serves as the prerequisite for MATH 53). AP credits may be accepted for MATH 51 (AB test) and MATH 53 (BC test) as part of the major.

Chemistry-Biology Requirements

The B.S. degree in Chemistry-Biology is a carefully structured interdisciplinary degree for students with a strong background in science and mathematics involving both the Departments of Biology and Chemistry. This major is especially recommended for students with interests in medicine and/or graduate work in cellular or molecular biology.

Biological Sciences

51 Principles of Biology
61 Principles of Biology
101 Genetics
175 Ecology, or
179 Evolution

Plus three electives (numbered above BIOL 61, but not including BIOL 89, BIOL 93, BIOL 191 or BIOL 197).

Chemistry

25 General Chemistry
27 General Chemistry
121 Organic Chemistry I
123 Organic Chemistry II
161 Physical Chemistry I, or
169 Elements of Physical Chemistry

Plus two electives (numbered above CHEM 123, but not including CHEM 191 or CHEM 197).

Physics

23 General Physics I or 53 Principles of Physics I
25 General Physics II or 55 Principle of Physics II

Mathematics

51 Calculus I
53 Calculus II

Teaching Credential Candidates

Students wishing to pursue a State of California Single Subject Teaching Credential in Science, with a Biological Sciences Concentration, must complete a Bachelor of Science in Biological Sciences with the restrictions and additions listed below. Students should consult with the department's adviser for credentialing to carefully select their electives in Biological Sciences. Note that Teaching Credential Candidates must take three courses beyond the standard Bachelor of Science in Biology; two courses in Geology and one in Astronomy.

B.S. in Biology for Teaching Credential Candidates

Biological Sciences

51 Principles of Biology
61 Principles of Biology
101 Genetics
153 Cell Biology
175 Ecology
179 Evolution

One course in Anatomy chosen from:

71 Human Anatomy
162 Comparative Vertebrate Anatomy
165 Embryology and Development

One course in Physiology chosen from:

81 Human Physiology
234 Comparative Physiology

Two courses in Organismal Biology; one course in Plants and one course in Animals chosen from:

79 California Flora
130 Plant Kingdom
and
74 Biology of Insects
77 Marine Birds and Mammals
72 Vertebrate Biology
185 Comparative Animal Behavior

Chemistry

25 General Chemistry
27 General Chemistry
121 Organic Chemistry I
123 Organic Chemistry II

Physics

23 General Physics I
25 General Physics II
41 Astronomy

Mathematics

Two courses in Mathematics (MATH 33 or higher; one course in statistics recommended; credit will not be given for both MATH 33 and MATH 51, and only MATH 51 serves as the prerequisite for MATH 53). AP credits may be accepted for MATH 51 (AB test) and MATH 53 (BC test) as part of the major.

Geosciences

51 Physical Geology
53 Geologic Evolution of the Earth

Experiential Learning Opportunities

Many students participate in undergraduate research (BIOL 197). Over a period of one or more semesters these students closely interact with faculty on research projects and get hands-on experience with modern research instruments. Stipends are available to selected undergraduates for summer research. Awardees are given the title of Hornage Undergraduate Research Fellow. Students also are encouraged to participate in Co-op/Internship experiences at dental offices, medical clinics, Micke Grove Zoo and other work areas.

Minor in Biological Sciences

A minor can be granted after the completion of five courses and 20 units of course work in Biological Sciences including the following: BIOL 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 PACIFIC 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, Chemistry/Biology, Biochemistry, Medicinal Chemistry or in Liberal Studies with a Biology concentration may not minor in Biological Sciences.

Course Offerings

BIOL 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.

BIOL 35. Environment: Concepts and Issues (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 a biology major.

BIOL 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. Human, animal and plant systems will be covered. Recommended for non-majors. Course does not count toward a biology major.

BIOL 51. Principles of Biology (4)
A lecture and laboratory introduction to plant and animal diversity and development, and evolution. Preparation for continued studies in biological science. *Prerequisite: a passing score on the University of the Pacific Basic Reading Test or READ 31.*

BIOL 61. Principles of Biology (4)
A lecture and laboratory introduction to vertebrate anatomy and physiology, cellular and molecular biology, cellular energetics, genetics and ecology. Preparation for continued studies in biological science.

BIOL 71. Human Anatomy (4)
A study of the structure of the organ systems of humans. Credit will not be given if a student has taken BIOL 111. *Prerequisites: BIOL 51, 61.*

BIOL 72. Vertebrate Biology (4)
Taxonomy, life history, ecology and evolutionary history of vertebrates. *Prerequisites: BIOL 51, 61.*

BIOL 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.

BIOL 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 sub-tidal environment. *Prerequisites: BIOL 51, 61.*

BIOL 77. 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.*

BIOL 79. California Flora (4)
The identification and classification of flowering plants, gymnosperms, ferns and fern allies as represented in Northern California.

BIOL 81. Human Physiology (4)
A lecture- and lab-based review of the functions of the major organ systems of vertebrates with emphasis on the human body. Lab exercises demonstrate basic physiological processes in the human body and emphasize techniques of instrumental data acquisition and data presentation. Credit will not be given if a student has already received credit for BIOL 82 or BIOL 111. *Prerequisites: BIOL 51, 61, and CHEM 25; one semester of genetics suggested.*

BIOL 89. Lab 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.

BIOL 93. Special Topics (3 or 4)

BIOL 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: BIOL 51, 61.*

BIOL 111. Anatomy and Physiology (4)
A lecture and laboratory course which covers the structure and function of the major physiological systems of the human body. Intended primarily for students in the Dental Hygiene program. Students taking BIOL 111 will not receive credit for either BIOL 71 or BIOL 81. *Prerequisites: BIOL 51, 61.*

BIOL 122. Principles of Immunology (4)
A study of the fundamental properties of antigens and antibodies, with an emphasis on the theories of antibody production, tolerance, transplantation immunity, autoimmunity and tumor immunology. *Prerequisites: BIOL 101 and CHEM 121.*

BIOL 128. Histology (4)
A study of the tissues which comprise the organs of the body. This course is limited to human tissues. Thin sections of organs will be studied and their structure related to function. *Prerequisites: BIOL 51, 61.*

BIOL 129. Histology Online (4)
A non-lab, online version of BIOL 128. *Prerequisites: BIOL 51, 61.*

BIOL 130. Plant Kingdom (4)
Through lectures, laboratories and field trips, students will be introduced to the morphology, reproduction biology and environmental requirements of all major groups of plants. Included will be material bearing on the evolutionary relationships within and between each major group. Individual projects are required. *Prerequisites: BIOL 51, 61.*

BIOL 145. Microbiology (4)
The biology of microorganisms with emphasis on viruses, bacteria and fungi including techniques of cultivation and identification. *Prerequisites: CHEM 25, 27; BIOL 51, 61.*

BIOL 147. Medical Microbiology (4)
A survey of microorganisms implicated in human disease; emphasis on characteristics and properties of microorganisms, chiefly bacteria and fungi, responsible for pathogenesis. Laboratory includes methods of isolation, characterization, and identification of bacteria and fungi responsible for human disease. *Prerequisites: BIOL 145 and CHEM 121 or permission of the instructor.*

BIOL 151. Parasitology (4)
Principles of parasitism. Biology of animal parasites with special emphasis on the protozoa, platyhelminths, nematodes, acanthocephala and arthropods. Techniques of recovery of parasites from various vertebrate hosts; staining, mounting and identification. *Prerequisites: BIOL 51, 61, 101.*

BIOL 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: BIOL 51, 61, 101 and CHEM 25, 27. Organic chemistry is recommended.*

BIOL 155. Biological Electron Microscopy (4)
The processes and techniques involved in examining biological specimens with the transmission electron microscope will be covered in detail. When competence in specimen processing is achieved, each student will perform an original experiment as a term project. *Prerequisites: BIOL 51, 61, CHEM 25, 27; BIOL 101 recommended.*

BIOL 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 cloning. *Prerequisites: BIOL 51, 61, 101, CHEM 121.*

BIOL 158. Computerized Data Acquisition (4)
A lecture and laboratory course training students in experimental design and protocol. Students will be trained in the programming and use of the computer data acquisition program LabVIEW, then apply the program to an intensive, team-based research project studying amphibian reproductive behavior. The class will end with a symposium-style presentation of each team's experiments and results. *Prerequisites: BIOL 51, 61.*

BIOL 159. Molecular Biological Techniques (4)
An advanced laboratory course in the methods of molecular biology, with emphasis on modern techniques and their application in the laboratory. Topics covered include gene cloning, protein expression systems, nucleic acid isolation and purification, and basic methods of bioinformatics. *Prerequisites: BIOL 101 and CHEM 121.*

BIOL 162. Comparative Vertebrate Anatomy (5)
The evolution of vertebrate organ systems as revealed by comparative morphology. *Prerequisites: BIOL 51, 61; 101 recommended.*

BIOL 165. Embryology and Development (4)
A laboratory course that focuses on the events that occur as a single-celled embryo develops into an adult organism. Developmental processes will be studied at the descriptive and mechanistic levels, leading to an understanding of how and why complex structures are produced. Major emphases will be placed on animal embryology (both vertebrate and invertebrate) leading to the production of tissues, organs and organ systems. Later developmental processes also will be studied, as will sex determination. Additional topics will include cancer and evolution as seen in the context of development. *Prerequisites: BIOL 51, 61, 101.*

BIOL 169. Elements of Biochemistry (4)
A non-lab course that surveys the field of biochemistry and is designed as a preparation for students who will attend a Pharmacy or Dental School. Topics include nucleic acid and protein structure and synthesis, intermediary metabolism, enzyme action, and synthesis and degradation of important biological molecules. The relationship of biochemistry, nutrition, and human disease will be discussed. This course does not count for the Biochemistry major. *Prerequisites: BIOL 51, 61, 101; CHEM 123.*

BIOL 175. Ecology (4)
The structure and dynamics of populations, biotic communities and ecosystems, with emphasis upon relationships of organisms to their environments. *Prerequisites: BIOL 51, 61, 101.*

BIOL 176. Ecology & Conservation Biology (0-4)
This course introduces principles of ecology and considers threats and disruptions to ecological systems from the level of local populations through ecosystems, landscapes, and global processes. Ecological principles will be used to help understand these systems, to make predictions for the future or for other systems, and to evaluate possible solutions, The class will consider the importance of economic and demographic forces in causing conservation problems and in shaping conservation strategies, and students will practice planning conservation areas. *Prerequisite: BIOL 51*

BIOL 179. Evolution (4)
Lectures and readings on the mechanisms of evolutionary change in organisms. *Prerequisites: BIOL 51, 61. BIOL 101 recommended.*

BIOL 182. Medical Endocrinology (4)
This lecture and laboratory course presents the fundamentals and current topics in human endocrinology. The subject is examined from a medical and clinical perspective, including "virtual" patients. *Prerequisites: BIOL 51, 61, 101; CHEM 25, 27. BIOL 71, 81 recommended.*

BIOL 185. Comparative Animal Behavior (4)
The ecology and evolution of animal behavior. Laboratory involves a quantitative study of animal behavior at Micke Grove Zoo. *Prerequisites: BIOL 51, 61, junior standing in Biological Sciences or Psychology.*

BIOL 186. Hormones and Behavior (4)
A lecture/discussion course focusing on the bidirectional interactions between an animal's behaviors and its endocrine system. Topics include: overview of the vertebrate endocrine system, courtship and sex behaviors, parenting behavior, pheromonal communication, aggression and other social behaviors, learning and memory, hunger, stress, and biological rhythms. *Prerequisites: BIOL 51, 61, 101*

BIOL 191. Independent Study (2-4)

BIOL 193. Special Topics (3 or 4)

BIOL 197. Undergraduate Research (2-4)

BIOL 222. Immunology (4)
Immunoglobin structure, function and expression in animals. Mechanisms of humoral immune response, cell-mediated immunity and complement system; autoimmune diseases; tolerance induction; transplantations; cancer immunity; vaccines; infectious disease; and cytokines. *Prerequisite: graduate standing.*

BIOL 224. Cancer Biology and DNA Repair (4)
The course will examine the morphological and molecular events that accompany the change of a normal cell into a cancerous cell. Emphasis on the cell and molecular biology of genes that play a role in this process. Lab will use molecular techniques to analyze genes involved in carcinogenesis and DNA repair. *Prerequisite: graduate standing.*

BIOL 234. Comparative Physiology (4)
A detailed review of organ function in diverse groups of organisms. Emphasis on physiological adaptation to the environment. *Prerequisite: graduate standing.*

BIOL 244. Developmental Biology (4)
The genetic control of development and the physiological mechanisms involved in fertilization and differentiation. *Prerequisite: graduate standing.*

BIOL 247. Medical Microbiology (4)
Same as BIOL 147. Three additional hours per week of seminar and/or special project. *Prerequisite: graduate standing.*

BIOL 251. Parasitology (4)
Same as BIOL 151. Special project required. *Prerequisite: graduate standing.*

BIOL 253. Cell Biology (4)
Same as BIOL 153. Special project required. *Prerequisite: graduate standing.*

BIOL 255. Biological Electron Microscopy (4)
Same as BIOL 155. The processes and techniques involved in examining biological specimens with the transmission electron microscope will be covered in detail. When competence in specimen processing is achieved, each student will perform an original experiment as a term project. *Prerequisite: graduate standing.*

BIOL 279. Evolution (4)
Same as BIOL 179. Special project required. *Prerequisite: graduate standing.*

BIOL 291.	**Independent Study**	**(2 or 4)**
BIOL 293.	**Special Topics**	**(3 or 4)**
BIOL 295.	**Graduate Seminar**	**(4)**
BIOL 297.	**Graduate Research**	**(1-6)**
BIOL 299.	**Thesis**	**(2 or 4)**

Chemistry

Professors: Jones, Kraka (Chair), Rodriguez, Samoshin, Spreer

Research Professors: Cremer

Associate Professors: McCallum

Assistant Professors: Day, Hellmann-Blumberg, Franz, Ren

Department Phone: (209) 946-2271

Website: http://chemistry.cop.uop.edu

Chemistry is the scientific study of the composition, properties and reactions of matter, especially of atomic and molecular systems. One of the major goals of chemistry is to understand these reactions and to control them. – The emphasis in all courses offered by the Department of Chemistry is a modern scientific approach to the solution of chemical problems including biochemistry and the health sciences. Students can choose among a wide variety of degree programs designed to meet a range of career goals. The Chemistry Department has a long history of success in placing students into excellent medical, dental, pharmacy and graduate school programs. They are also well prepared for careers in industry, government service and private business. The Bachelor of Science Degrees in Chemistry is certified by the American Chemical Society (ACS). The B.S. Biochemistry program follows national guidelines.

The Chemistry Department has recently added to its regular teaching program a theoretical chemistry line that offers hands-on training in computational chemistry, computer-assisted drug design, and nanotechnology. These three areas are representative of extremely important developments in the chemical sciences. The department has added internationally recognized experts in these areas so that the department can provide in depth training which will give students the expertise to take advantage of the developing job opportunities (e.g., the US Department of Labor has predicted that developments in nanotechnology will lead in the near future to 2 million new jobs).

Degrees in Chemistry

The Bachelor of Arts degree is designed to give the student a broad understanding of chemistry and to provide a preparation for careers in medicine, dentistry and teaching. The candidate for the B.A. 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, professional schools of medicine and dentistry, and careers in the chemical industry. The Bachelor of Science candidate must complete eleven 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 graduate students are typically conducting independent research projects as part of a Master of Science or a Ph.D. program.

Minor in Chemistry

The Department of Chemistry offers a minor in chemistry. The minor requires a minimum of 23 units and five courses including CHEM 25, 27, 121 and two courses selected from CHEM 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.

Transfer Units

The Chemistry Department will determine the acceptability of courses taken at other institutions to satisfy departmental major and minor requirements. Transfer students are required to take at least four of their major required courses in the COP Chemistry Department. Transfer students choosing a minor in Chemistry must complete at least two of their courses in the COP Chemistry Department.

Typical First-Year Program

Fall: Chemistry 25
Math 51
Physics 23/53 or
Biology 51
Pacific Seminar I

Spring: Chemistry 27
Math 53
Physics 25/55 or
Biology 61
Mentor Seminar II

Note: Degree candidates in the B.S. Chemistry-Biology, B.S. Chemistry (Emphasis in Medicinal Chemistry) or B.S. Biochemistry are advised to take Biology (51, 61) in their freshman year.

Chemistry Core Curriculum

All majors in chemistry will complete a common core (except for the Chemistry-Biology degree) of chemistry courses in addition to requirements specific to the individual majors and degree.

Core Courses		**Units**
25	General Chemistry	5
27	General Chemistry	5
121	Organic Chemistry I	5
123	Organic Chemistry II	5
141	Analytical Chemistry	4
Core Total		**24**

Bachelor of Arts

The B.A. in Chemistry program is designed to give students a broad understanding of chemistry and yet allow sufficient flexibility for students to pursue a large number of courses in other science and non-science areas. This degree plan is chosen by many students as a preparation for careers in dentistry and in medicine.

The Bachelor of Arts degree candidate must complete eight courses in chemistry, two in physics and two in mathematics.

Degree Requirements

Core Courses	**Units**
General Education	9
University Electives	10
Non-major Requirements	19
Chemistry	8
Mathematics & Physics	4
Major Requirements	12
Graduation Total*	**31**

**Presumes courses of at least three units each.*

Major Requirements

		Units
Chemistry		
Core Courses		24 plus
169	Elements of Physical Chemistry (or 161)	4
	Chemistry elective*	4
	Chemistry elective*	4
	Total	**36**
Physics		
23	General Physics I	5
and		
25	General Physics II	5
or		
53	Principles of Physics I	5
and		
55	Principles of Physics II	5
	Total	**10**

Mathematics

51	Calculus I	4
53	Calculus II	4
	Total	**8**
	Major Total	**54**

**The two chemistry electives provide flexibility in scheduling and a tailoring of the subject matter to fit individual student needs and interests.*

Bachelor of Science

Chemistry

The B.S. in Chemistry degree is certified by the American Chemical Society. The B.S. program has increased breadth and depth as well as increased mathematical rigor compared to the B.A. degree. The program prepares students for advanced degree programs, for work in the chemical industry, and for the professional schools of dentistry and medicine. The student graduating with the certified B.S. degree is well prepared for a career in chemistry.

The B.S. candidate must complete eleven courses in chemistry, two in physics and four in mathematics.

Degree Requirements

Courses	
General Education	9
University Electives	3
Non-major Requirements	12
Chemistry	11
Mathematics & Physics	6
Major Requirements	17
Graduation Total*	**29**

Major Requirements

Courses		**Units**
Chemistry		
Core Courses		24 plus
143	Instrumental Analysis Laboratory	4
151	Biochemistry	4
161	Physical Chemistry I	4
163	Applied Computational Chemistry	4
167	Experimental Physical Chemistry	4
171	Advanced Inorganic Chemistry	4
	Total	**48**
Physics		
53	Principles of Physics I	5
55	Principles of Physics II	5
	Total	**10**
Mathematics		
51	Calculus I	4
53	Calculus II	4
55	Calculus III	4
57	App. Differential Equations I	4
	Total	**16**
	Major Total	**74**

**Students in this program are strongly encouraged to engage in undergraduate research as an elective.*

Chemistry-Biology

The Bachelor of Science in Chemistry-Biology is an interdepartmental major jointly offered by the Chemistry and Biology Departments. The degree is recommended for students with career interests in medicine, dentistry or advanced degree work in cellular and molecular biology. The B.S. Chemistry-Biology candidate acquires basic coursework in the natural sciences without, however, meeting the strict requirements of either the B.S. Biology or the B.S. Chemistry programs.

Degree Requirements

Courses	
General Education	9
University Electives	3
Non-major Requirements	12
Chemistry	7
Biology	7
Mathematics & Physics	4
Major Requirements	18
Graduation Total*	**30**

Major Requirements

Courses		**Units**
Chemistry		
Core Courses (less CHEM 141)		20 plus
169	Elements of Physical Chemistry or CHEM 161	4
	Elective	4
	Elective	4
	Total	**32**
Biological Sciences		
51	Principles of Biology	4
61	Principles of Biology	4
101	Genetics	4
175	Ecology	3
Or		
179	Evolution	4 plus
Three additional biology courses		12
	Total	**27 or 28**
Mathematics		
51	Calculus I	4
53	Calculus II	4
	Total	**8**
Physics		
53	Principles of Physics I or 23 General Physics I	5
55	Principles of Physics II or 25 General Physics II	5
	Total	**10**
	Major Total	**77 or 78**

Biochemistry

The B.S. in biochemistry is a versatile degree that provides students with a solid foundation in chemistry, a full year of biochemistry and a strong background in molecular biology. It prepares students for careers involving chemical, biochemical and interdisciplinary research, for professional careers in pharmacy, medicine, or dentistry, or for graduate work in analytical, biochemical, biological or biomedical programs.

Degree Requirements

Courses	
General Education	9
University Electives	3
Non-major Requirements	12
Chemistry	10
Biology	4
Mathematics and Physics	4
Major Requirements	18
Graduation Total*	**30**

Major Requirements

Courses		**Units**
Chemistry		
Core Courses		24 plus
151	Biochemistry I	4
153	Biochemistry II	3
157	Biochemistry Laboratory	4
169	Elements of Physical Chemistry (or 161)	4
	Chemistry Elective (excluding CHEM 197)	4
	Total	**43**

In addition, students are encouraged to complete at least one other course in biology and at least one semester of research.

Biological Sciences

51	Principles of Biology	4
61	Principles of Biology	4
101	Genetics	4
145	Microbiology (or 153 Cell Bio)	4
	Total	**16**

Mathematics

51	Calculus I	4
53	Calculus II	4
	Total	**8**

Physics

23	General Physics I	5
	And	
25	General Physics II	5
	Or	
53	Principles of Physics I	5
	And	
55	Principles of Physics II	5
	Total	**10**
Major Total		**77**

Emphasis in Medicinal Chemistry

The emphasis in Medicinal Chemistry is offered by the College of the Pacific with the support of the Thomas J. Long School of Pharmacy and Health Sciences. The major is only open to students in the 3+3 Pre-Pharmacy Advantage Program or those in 2+3 who extend a year (see pre-pharm requirements). The COP courses are to be completed prior to entry into the Pharm.D. program. The TJLSPHS courses may only be completed as part of the Pharm. D. degree plan. Those completing the emphasis in medicinal chemistry are well prepared for advanced work in any area that deals with compounds of biological activity, including careers in medical research, medical chemistry, toxicology, biochemistry and the pharmaceutical industry.

Requirements

Courses

General Education	9
Chemistry	7 or 9
Pharmacy	5 or 3
Other Science & Math	8
Major Requirements	20
Graduation Total*	**29**

**Presumes courses of at least three units each.*

Major Requirements

Courses		**Units**
Chemistry		
Core Courses		24 plus
169	Elements of Physical Chemistry (or 161)	4
	Chemistry Elective	4
	Total	**32**
Biological Sciences		
51	Principles of Biology	4
61	Principles of Biology	4
71	Human Anatomy	4
145	Microbiology	4
	Total	**16**
Mathematics		
51	Calculus I	4
53	Calculus II	4
	Total	**8**
Physics		
23	General Physics I	5
	And	
25	General Physics II	5
	Or	
53	Principles of Physics I	5
	And	
55	Principles of Physics II	5
	Total	**10**

School of Pharmacy and Health Sciences

Successful completion of the first two years of the Pharm.D. program including:

PHAR 124	Integrated Pharm. Sciences II	5
PHAR 134	Mech of Drug Action I	5
	And	
PMED 187	Drug Biotransformation	3
	Or	
PCSP 211	Advanced Medicinal Chem - Drug Design	3

And six units of Med. Chem. research, normally completed during the third year TJLS clerkship (PRAC 175, elective rotation) as either PMED 193 Undergraduate Independent Study Laboratory or

CHEM 197 Independent Research 6

Or a combination of the two. This research may be done prior to entering the Pharm.D. program.

Major Total **85**

Course Offerings

Prerequisite Policy: Only courses passed with a grade of C- or better meet prerequisite requirements.

Students are assessed laboratory use fees that vary with the level of the laboratory class to cover the cost of expendable materials, chemicals, and other items required to operate the laboratories.

CHEM 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.

CHEM 25. General Chemistry (5)
The important general principles, theories and concepts of chemistry are studied, including fundamentals of chemistry and equilibrium. 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. Upon registration, continuance in CHEM 25 requires an appropriate score on the American Chemical Society Diagnostic Examination or permission of the instructor.*

CHEM 27. General Chemistry (5)
More important general principles, theories, and concepts of chemistry are studied including modern applications of quantum mechanics, bonding, chemical kinetics, liquids, solids, and properties of solutions. Additional special topics include coordination compounds, nuclear chemistry, organic chemistry and biochemistry. Three class periods and two three-hour laboratory periods a week are required. *Prerequisite: At least one year of high school chemistry is recommended. Upon registration, continuance in CHEM 27 requires an appropriate score on the American Chemical Society Diagnostic Examination or satisfactory completion of CHEM 25 or permission of the instructor.*

CHEM 33. Elements of Organic Chemistry (3)
This is an introductory course for students who will not major in the chemistry or biological sciences, but whose main interest—dental hygiene, medical technology, nursing, nutrition, pharmacy technician, and more—requires some knowledge of organic chemistry. The course provides familiarity with nomenclature and functional groups with special emphasis on practical applications of organic chemistry to everyday life and to biological processes. Does not count towards a major in Chemistry or Biological Sciences. Course is required for Dental Hygiene Program. *Prerequisite: CHEM 25, 27.*

CHEM 35. Organic Chemistry Primer (3)
This course is designed to prepare students for a regular one year course in Organic Chemistry. It links and applies the concepts learned in General Chemistry to organic systems, provides familiarity with Organic Chemistry nomenclature and functional groups, emphasizes pattern recognition and introduces basic elements of reaction mechanisms. The course fulfills the Organic Chemistry requirements of the Dental Hygiene program. ONLINE. *Prerequisite*: CHEM 27.

CHEM 93. Special Topics (3,4)

CHEM 121, 123. Organic Chemistry (5, 5)
The fundamental principles of the chemistry of carbon 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: CHEM 27 (or CHEM 121).*

CHEM 125. Introduction to Nanotechnology (4)
Molecular nanotechnology (MNT) is a rather young discipline, which came up in the nineties. Nevertheless, MNT has gained so much importance within the last years that universities at all rankings have introduced or are going to introduce MNT teaching programs. Predictions say that MNT will change our lives and society more than computer technology and electricity have done together. - The course will provide both an overview over MNT. It will show that the nano regime is so different from other regimes because both classical and quantum effects can be active thus leading to unique properties of nano devices. MNT is a highly interdisciplinary science, which will be reflected in the course by making reference to physics, chemistry, biology, pharmacy, and engineering. Applications of MNT, as they are already in use today and as they are planned for the future will be discussed. Also the implications of MNT for our society will be considered. *Prerequisite: CHEM 25 or PHYS 55, or permission of the instructor.*

CHEM 127. Models and Concepts in Chemistry (4)
In chemistry, every year 2 million new chemical facts are added to what is known since decades and centuries. No chemist can memorize just a fraction of this data. Nevertheless, chemists must be able to adjust their knowledge to all new chemical observations. This is effectively done by a series of models and concepts which summarizes myriads of data in a simple way. The course focuses on a general understanding of chemistry in terms of models and concepts that describe structure, stability, reactivity and other properties of molecules in a simple, yet very effective way. The concept of electronegativity, the concept of the chemical bond, molecular orbital theory, orbital symmetry, the Mulliken-Walsh model, the concept of the potential energy surface, the Jahn-Teller effects, conjugation and delocalization models, the Hückel and Möbius (anti)aromaticity concepts, through-space and through-bond interaction models, the concept of the hydrogen bond, the Woodward-Hoffman rules, the Evans-Dewar-Zimmermann rules, and the isolobal concept will be discussed among other topics. Many chemical problems from organic chemistry, inorganic chemistry, transition metal chemistry, and biochemistry will be presented and the applicability of the various models and concepts as well as their limitations will be demonstrated. *Prerequisite: CHEM 25 or equivalent, or permission of instructor.*

CHEM 141. Analytical Chemistry (4)
Introduces analytical methods including classical techniques, separations and selected instrumental procedures. *Prerequisite: CHEM 27.*

CHEM 143. Instrumental Analysis Lab (4)
Advanced analytical methodology involving electronic instrumentation is offered with emphasis on practical application and "hands-on" experience. The theory of instrumental operation is covered. Examples from modern spectroscopy, mass spectrometry, NMR, chromatography and other methods of analysis are included. *Prerequisite: CHEM 141.*

CHEM 151. Biochemistry I (4)
Structure, function, physical and chemical properties, organization and transformation (metabolism) of the major classes of biological molecules. The emphasis will be on protein structure and function and on carbohydrate metabolism. Lipids and nucleic acids will be discussed briefly. *Prerequisites: CHEM 123 and CHEM 169 or CHEM 161, or permission of the instructor.*

CHEM 153. Biochemistry II (3)
The chemical structure and transmission of biological information. Structure, function and metabolism of nucleic acids. Recombinant DNA/molecular techniques. DNA transcription, translation, replication and repair. Other examples of biological information flow. *Prerequisites: CHEM 151 or permission of the instructor.*

CHEM 157. Biochemistry Laboratory (4)
Standard techniques for isolation and analysis of biological molecules. Protein purification, column chromatography, electrophoresis, western blotting, nucleic acid isolation and manipulation, use of relevant databases. *Prerequisites: CHEM 141 and either CHEM 151 or BIOL 169.*

CHEM 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, non-ideal systems, multi-component phase equilibrium and equilibrium electrochemistry. Three class periods a week are required. *Prerequisites: CHEM 27, MATH 51, 53, 55, PHYS 53, 55 or permission of the instructor.*

CHEM 163. Applied Computational Chemistry (4)
Besides the normal lab experiments traditionally expected, modern chemists/biochemists in whether in the chemical/pharmaceutical industry or academia perform "experiments" on the computer by calculating the outcome of chemical and biochemical reactions. This *in silicio* chemistry has become an integral part of the education in chemistry and the present course will provide an introduction into this new field by addressing a general audience of chemists/biochemists and students from neighboring fields. Starting from the description of atomic and molecular electronic structure, then discussing the elementary processes of bond breaking and forming, the course leads to the calculation of typical chemical reactions in a hands-on fashion. Major quantum chemical packages will be used for this purpose. *Prerequisite: CHEM 25 or equivalent or permission of the instructor. The course does not require detailed knowledge in mathematics or quantum chemistry.*

CHEM 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: CHEM 161 or 169.*

CHEM 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: MATH 51, CHEM 27, PHYS 53, 55 or permission of the instructor.*

CHEM 171. Advanced Inorganic Chemistry (4)
Ionic and covalent bonding: theory, energetics and reactivity; applications of acid-base concepts; aqueous and nonaqueous electrode potentials; coordination chemistry; theory, spectra, structure, reaction mechanisms and kinetics; introduction to organometallic chemistry; periodicity. Four hours of laboratory per week. *Prerequisite: CHEM 163 or permission of the instructor*.

CHEM 191. Independent Study (2-4)

CHEM 193. Special Topics (3, 4)

CHEM 197. Independent Research (2-4)
Prerequisite: CHEM 25.

CHEM 231. Advanced Synthesis Laboratory (4)
Selected problems in synthesis. *Prerequisite: CHEM 123.*

CHEM 232. Qualitative Organic Analysis (4)
One lecture period and two laboratory periods a week. *Prerequisite: CHEM 123.*

CHEM 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. *Prerequisites: CHEM 123 and 161 or 169.*

CHEM 234. Selected Topics – 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.

CHEM 243. Advanced Instrumental Analysis (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.

CHEM 245. Advanced Instrumental Methods (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.

CHEM 251. 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: CHEM 151 or permission of the Associate Dean.* (Cross-listed from School of Pharmacy and Health Sciences.)

CHEM 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: CHEM 151 or permission of the instructor.* (Cross-listed from School of Pharmacy and Health Sciences.)

CHEM 264. Selected Topics – 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 the instructor required.*

CHEM 265. Advanced Physical Chemistry (4)
An advanced treatment of molecular structure, spectroscopy and photochemistry. *Prerequisite: CHEM 163 or permission of the instructor.*

CHEM 271. Advanced Inorganic and Bioinorganic 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 the instructor required.*

CHEM 274. Selected Topics – 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.

CHEM 291. Independent Study (2-4)

CHEM 293. Special Topics (3, 4)

CHEM 295. Graduate Seminar (2)

CHEM 297. Graduate Research (1-4)

CHEM 299. Thesis (1-4)

CHEM 381. Apprentice Teaching (1-4)

CHEM 391. Independent Study (2-4)

CHEM 395. Seminar in the Teaching of College Chemistry (2)

CHEM 397. Graduate Research (1-6)

CHEM 399. Dissertation (1-6)

Communication

Professors: Day, Hackley, Koper, Schamber

Associate Professors: Dong (Chair)

Assistant Professors: Bates, Ray

Department Phone: (209) 946-2505

Mission

The mission of the Department of Communication is to prepare students as leaders in their communities and careers by developing their understanding of communication theory and research methodologies as well as their proficiency in oral, written and mediated communication. Coursework is offered which leads to emphases in Communication Studies, Media Studies, or 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.

Career Opportunities

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.

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 and has been given a solid background in communication theory and research. 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. Many Communication majors supplement their academic course work with internships and practica, lending a substantial experiential component to the curriculum.

Experiential Learning Opportunities

Pacific Speech and Debate Society. For over seven decades, Pacific has competed with distinction in intercollegiate speech and debate. The Pacific teams are regulars in national championship competition and have compiled enviable records at both the regional and national levels. The Communication Department offers forensics scholarships to students who have demonstrated a high level of performance proficiency and require financial assistance.

Broadcasting Facilities: *KPAC 89.7 FM* is the student-operated low wattage radio station on campus. **Pacific TV 2** is the closed circuit television station on campus. Both stations offer students experience in advertising sales, announcing, producing, and directing for a student audience.

The Pacifican. *The Pacifican* is a student-managed independent weekly newspaper. This publication serves as a laboratory for those interested in pursuing careers in journalism.

PRSSA. The University of the Pacific boasts a chapter of the Public Relations Student Society of America (PRSSA). Serious public relations students meet monthly to hear professionals invited from San Francisco and other major market areas to discuss contemporary public relations topics. They also join together in teams to compete in national case-study competition. PACIFIC PRSSA teams have distinguished themselves over the years by placing in national competition.

Internships and Practica

The department believes that practica 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 practica are available to students who meet the prerequisites. Internships and practica are taken on a pass/no credit grading basis.

Internship and Practica Requirements

Students taking an internship or a practica through the department must satisfy the following requirements: (1) Students must have an overall cumulative GPA of 2.5 or above in order to register for an internship, COMM 87/187, to

count toward the major; otherwise, (2) students with a minimum overall cumulative GPA of 2.0, may be placed in practicum, COMM 89, to serve in an on-campus setting; (3) students should complete the lower core courses as well as appropriate emphasis area courses as prescribed by the Faculty Supervisor, before the Internship or Practica is undertaken (exceptions must be approved by the Faculty Supervisor); (4) undergraduate students may complete a total of 16 units through COMM 87/187 (Internships) and/or Practica, COMM 89.

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.

Academic Requirements

To major in communication, students must complete the minimum requirements for one of the area emphases in the department. Communication courses in which grades are received which are below C- are not accepted toward completion of the major.

Core Curriculum

Each emphasis area of the department requires the completion of eight courses, which constitute the core of the major. The core consists of four lower-level and four upper-level courses as follows:

Lower Core Course (4 courses, 12 units)

COMM 27	Public Speaking
COMM 31	Introduction to Mass Communication
COMM 43	Introduction to Interpersonal Communication
COMM 50	Introduction to Communication Technologies

Note: Students must earn a 2.5 Grade Point Average in the four lower core courses in order to meet the prerequisites for COMM 160- Communication Research Methods.

Upper Core Courses (4 courses, 12 units)

COMM 114/ 214	Argumentation and Advocacy
COMM 116/216	Rhetorical Theory and Criticism or
COMM 145/245	Human Communication Theory
COMM 150	Ethical Issues in Communication
COMM 160/260	Communication Research Methods

Typical First-Year Program

Fall:

Lower Core COMM Course

COMM 43 Introduction to Interpersonal Communication

General Education

General Education

Pacific Seminar I

Elective (one or more units)

Spring:

Lower Core COMM Course

Lower Core COMM Course

General Education

General Education

Pacific Seminar II

Elective (one or more units)

Communication Studies Emphasis

An emphasis in Communication Studies provides a broad theory-based examination of human communication. Students are prepared for a wide-range of post-graduate endeavors, including law school, graduate school, human resource management, business, counseling, and other careers which benefit from insight into human behavior.

1. Core Courses
2. All of the following:
   - COMM 143 Intercultural Communication
   - COMM 147 Nonverbal Communication
   - COMM 149 Organizational Communication
   - COMM 155 Persuasion
3. 8 additional elective COMM units.

Media Studies Emphasis

Students choosing this emphasis area receive instruction on the nature and use of broadcast and print media, as well as mass communication in general. Coursework in broadcasting focuses on functional, operational, and theoretical aspects. Coursework in print focuses on news writing, reporting, and editing. Students choosing the Media Studies Emphasis must complete at least one of the following sequences:

Broadcast Sequence

1. Core Courses
2. All of the following:
   - COMM 131 Media Production
   - COMM 132 Broadcast Writing
   - COMM 138 Media Law and Ethics
   - COMM 139 Theory of Mass Communication
3. 8 additional elective COMM units.

Print Sequence

1. Core Courses
2. All of the following
   - COMM 121 Basic News Writing
   - COMM 122 Advanced News Writing and Editing
   - COMM 138 Media Law and Ethics
   - COMM 139 Theory of Mass Communication
3. 8 additional elective COMM units.

Public Relations Emphasis

The Public Relations emphasis explores the role of internal and external communication in reputation management. 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.

1. Core Courses
2. All of the following:
   - COMM 135 Principles of Public Relations
   - COMM 137 Public Relations Case Studies
   - COMM 140 Writing for Public Relations
   - COMM 152 Public Relations Administration
3. 8 additional elective COMM units.

Organizational Communication Emphasis

This emphasis area is designed for students who seek careers in organizations. Courses in organizational communication examine organizational structure and communication from a variety of theoretical perspectives. Special attention is given to the function of communication within organizations, conflict management, decision making, the dynamics of group interaction and new media.

1. Core Courses
2. All of the following:
   - COMM 135 Principles of PR
   - COMM 146 Communication and Conflict
   - COMM 148 Decision-Making
   - COMM 149 Organizational Communication
3. 8 additional elective COMM units

Communication Minor

A minor in Communication requires 4 lower-core courses, 2 upper-core courses, and 1 elective course (4 units) as specified below. The minor requires that students maintain a 2.0 GPA. Communication course grades below C- do not count toward the minor.

1. Lower Core Courses (4 courses, 12 units)

COMM 27 Public Speaking

COMM 31 Introduction to Mass Communication

COMM 43 Introduction to Interpersonal Communication

COMM 50 Introduction to Communication Technologies

Note: Students must earn a 2.5 Grade Point Average in the four lower core courses in order to meet the prerequisites for COMM 160- Communication Research Methods.

2. Upper-Core Courses (8 units)

COMM 160 Communication Research Methods

Must take one of the following:

COMM 116 Rhetorical Theory and Criticism, Or
COMM 145 Human Communication Theory

3. Elective Units (4 units)

Take 4 additional elective COMM units.

Total units for Minor: 24

Course Offerings

COMM 27. Public Speaking (3)
A study of the basic principles of public speaking. This course is one of the four lower core courses for the communication major.

COMM 31. Introduction to Mass Communication (3)
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. This course is one of the four lower core courses for the communication major.

COMM 43. Introduction to Interpersonal Communication (3)
Introduction to the study of human interaction that occurs in relatively informal, everyday social contexts. Using models, theories, and skills of communication as takeoff 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. This course is one of the four lower core courses for the communication major.

COMM 50. Introduction to Communication Technologies (3)
This course provides an introduction to the nature, design, and use of communication technologies, including networks, email, web pages, presentation tools, and groupware. Social impacts and diffusion of new technologies is discussed. Students learn production skills that will be useful in upper division communication courses, and that will facilitate the department's portfolio assessment program. This course is one of the four lower core courses for the communication major.

COMM 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. COMM 187 represents advanced internship work involving increased independence and responsibility; a corresponding COMM 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 a COMM 87 course and a total of four in a COMM 187 course). Students will register for one of the courses listed below. Pass/no credit grading only.

COMM 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.*

COMM 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.*

COMM 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.*

COMM 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.*

COMM 89, 189. Practicum (1-4)
Non-classroom experience in activities related to the curriculum under conditions determined by the appropriate faculty member. Students will register for one of the courses listed below. Courses numbered 189 are similar contexts with a more advanced level of performance and learning expectations compared to courses numbered 89. COMM 89 is the prerequisite for COMM 189.

COMM 89a, 189a. Print Practicum (1-4)
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 COMM 121 or permission of the instructor.*

COMM 89b, 189b Broadcast Practicum (1-4)
Supervised experience at the University public radio station, KUOP-FM, or the student-operated, carrier-current station, KPAC. Students will work in news, production, development and other areas. *Prerequisites: coursework appropriate to assignment; permission of the instructor.*

COMM 89c, 189c. Public Relations Practicum (1-4)
Supervised experience in public relations within the University. *Prerequisite: COMM 135 or permission of the instructor.*

COMM 89d, 189d. Forensics Practicum (1-4)
Supervised activities in forensics including participating in individual events, Readers Theatre and debate in tournaments throughout the nation. *Prerequisite: COMM 27 or permission of the instructor.*

COMM 89f, 189f. Organizational Communication Practicum (1-4)
Supervised experience with an on-campus department or service. Students will apply organizational communication theory and skills while working with various departments within campus operations, such as HR, admissions, marketing, etc.

COMM 114/214. Argumentation and Advocacy (4)
This course introduces students to the theory and practice of argumentation, which is a method of decision-making emphasizing reason giving and evidence. The course includes instruction in debating, research, and critical writing, as well as advanced topics in the study of public deliberation. *Prerequisites: three of the following 4 courses, COMM 27, 31, 43 or 50, with a GPA of 2.5 or better, or permission of the instructor.*

COMM 116/216. Rhetorical Theory and Criticism (4)
This course strives to help students derive insight into how symbolic processes affect human awareness, beliefs, values, and actions. The course treats criticism and analysis as methods of inquiry into the nature, character, and effects of human communication. It addresses various methods of rhetorical criticism in terms of their

central units of analysis and typical intellectual concerns. *Prerequisite: COMM 160 or permission of the instructor.*

COMM 121. Basic 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; COMM 31 or permission of the instructor.*

COMM 122. Advanced News Writing and Editing (4)
In addition to developing advanced news writing, feature writing, and reporting skills, this course focuses on copy editing, proofreading, headline writing, and makeup and layout for newspapers, magazines, newsletters, pamphlets, and brochures. *Prerequisite: COMM 121.*

COMM 131. Media Production (4)
This course covers practical and theoretical application of audio and video production techniques. Emphasis on aesthetic qualities of sight and sound productions. Some work in student media facilities involved. *Prerequisite: COMM 31 or permission of the instructor. Lab fee required.*

COMM 132. Broadcast Writing (4)
Examination and production of broadcast writing techniques. Emphasis on writing news, information, and entertainment messages for the broadcasting industries. Some work in student media facilities involved. *Prerequisite: COMM 31. Lab fee required.*

COMM 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: COMM 31.*

COMM 136/236. Broadcast Administration and Promotions (4)
An examination of the theoretical and practical issues involved in the operation of a radio, TV, or broadcast-related facility. Emphasis on the strategies involved in successful programming and promotion to the mass audience. *Prerequisite: COMM 31.*

COMM 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: COMM 135.*

COMM 138/238. Media Law and Ethics (4)
A study of law and ethics as they relate to mass communication. Legal topics include the First Amendment, libel, copyright, invasion of privacy, and regulations of government agencies such as the FCC. Criteria for evaluating ethical behavior are considered as well as the relation of ethics to professional codes. *Prerequisite: COMM 31 or permission of the instructor*.

COMM 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 gratification's research. The state, function, and form of theory in mass communication will be discussed. *Prerequisite: COMM 160 or permission of the instructor.*

COMM 140. Writing for Public Relations (4)
Theory and practice in public relations writing in the context of publicity. Students will learn to write news releases, backgrounds, business letters and feature stories. *Prerequisite: COMM 135.*

COMM 141/241. Group Dynamics (4)
A study of the process of human interaction occurring within the context of the small group. *Prerequisite: COMM 43 or permission of the instructor. Not recommended for freshmen.*

COMM 143. Intercultural Communication (4)
Analysis of the major variables affecting interpersonal communication between persons of differing cultural backgrounds.

COMM 144/244. Advanced Interpersonal Communication (4)
This course focuses on current theoretical issues in interpersonal communication. Topics of interest include: communicator competence, individual differences in communication behavior, social power, emotion, interpersonal influence, and relationship development in both personal and professional contexts. *Prerequisite: COMM 43.*

COMM 145/245. Human Communication Theory (4)
A study of contemporary social-psychological theory of human interaction. *Prerequisite: COMM 160 or permission of instructor.*

COMM 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: COMM 43 or permission of the instructor.*

COMM 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: COMM 43 or permission of the instructor.*

COMM 148/248. 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 concerning management of organizations, career choice, marriage, divorce, and a variety of other significant choices. *Prerequisite: COMM 43, 141 or permission of the instructor.*

COMM 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: COMM 43, 27 or permission of the instructor.*

COMM 150. Ethical Issues in Communication (4)
This course is a senior-level seminar devoted to situating what students have learned in the Communication Major within a broader social and ethical context, and preparing students to move forward with confidence into a world where valuing and learning never stop. Topics include the role of communication in sustaining community, standards for ethical communication, communication's role in moral decision making, and other topics of interest to the students and the instructor. *Prerequisites: Senior standing.*

COMM 152/252. Public Relations Administration (4)
Theoretically grounded, the course focuses on how public relations managers can effect change. Communication strategies for effective leadership and motivation of public relations professionals are emphasized. The course will enhance critical skills of management for the understanding of public relations research, action/planning, communication and evaluation. *Prerequisites: COMM 135, 137 (may be taken concurrently), and senior standing.*

COMM 155/255. Persuasion (4)
A study of the principles and methods of influencing behavior. *Prerequisite: COMM 27 or permission of the instructor.*

COMM 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: COMM 27, 31, 43, a GPA of 3.5 or better, or permission of the instructor. Recommended for sophomores.*

COMM 191/291. Independent Study (2-4)

COMM 193/293. Special Topics (4)

COMM 197. Independent Research (2-4)

COMM 287. Graduate Internship (2 or 4)

COMM 289. Graduate Practicum (2 or 4)

COMM 295. Graduate Seminar (4)

COMM 297. Graduate Research (1-4)

COMM 299. Thesis (2 or 4)

Economics

Professors: Flynn, Herrin

Associate Professors: Dennis, Keefe, Meyer (Chair), Ordovensky Staniec, Warner

Assistant Professor: King

Department Phone: (209) 946-2258

Website: www1.pacific.edu/cop/economics

The study of Economics examines how societies choose to use their limited resources to produce goods and services; it is also concerned with the mechanisms through which societies decide to distribute products to its members. Economics, therefore, by necessity studies interactions among house-holds, firms and governmental institutions. Economic policy decisions ultimately rest upon economic theory, so considerable care is taken to explain the basic theories which render economics a scientific discipline.

Mission

The mission of the Economics Department is twofold. First, students from all majors are taught how to conceptualize their own roles in society, whether acting as individuals, members of private-sector firms or as public servants in the government sector. Second, economics majors and minors learn how to apply higher-level theoretical and technical skills (e.g. statistics and computers) to any number of specialized areas within the broad reach of the discipline.

Degrees in Economics

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.

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.

Degree Requirements:

1. All Economics majors must take the following:

Economics Core Courses:

ECON 53	Introductory Microeconomics
ECON 55	Introductory Macroeconomics
MATH 37 or MATH 39	
ECON 101	Intermediate Microeconomic Analysis
ECON 103	Intermediate Macroeconomic Analysis

2. The Bachelor of Arts in Economics is offered as a general social science degree, with a specialized Political Economy Track, or with a specialized International Track. In addition to the Economics core courses, these three tracks require the following courses:

   a. Bachelor of Arts – General Social Science Track:

ECON 111	History of Economic Thought
ECON 161	Computer Applications in Economics

   Four (4) Economics electives numbered 71 or higher

   b. Bachelor of Arts – Political Economy Track:

ECON 111	History of Economic Thought
ECON 171	Political Economy
POLS 11	Intro. to Political Science
POLS 132	Modern Political Theory

   Two (2) Economics electives numbered 71 or higher

   Two (2) approved Political Science electives

   c. Bachelor of Arts – International Track:

ECON 111	History of Economic Thought
ECON 121	International Trade
ECON 123	International Finance
ECON 125	Economic Development
ECON 161	Computer Applications in Economics

   Two (2) upper-division international elective courses to be chosen from:

BUSI 163	International Financial Management
ECON 118	Globalization History
INTL 174	Global Environmental Policy
POLS 164	International Political Economy

   Or others as approved by Economics Department faculty advisors

   Four (4) semesters of one (1) non-English language (or proven competence at the 4th semester level)

3. The Bachelor of Science in Economics can be earned by following one of three different tracks - the Social Science Track, the Applied Economics Track (designed for students interested in Business), or the Mathematical Economics Track (designed for students interested in Math or in graduate study in Economics).

   In addition to the Economics core, the three B.S. tracks require the following additional courses:

   a. Bachelor of Science – Social Science Track

ECON 111	History of Economic Thought
ECON 190	Econometrics
MATH 33	Elements of Calculus (or the entire MATH 51, 53, 55 Calculus sequence)

   Six Economics electives numbered 71 or higher

b. Bachelor of Science – Applied Economics Track

ECON 190	Econometrics (or ECON 161-Computer Applications)
MATH 33	Elements of Calculus (or MATH 45-Finite Math and Calculus)
BUSI 31	Financial Accounting
BUSI 53	Legal and Ethical Environment of Business

Four (4) Economics electives numbered 71 or higher

One approved Business elective

Students completing a concentration in Finance in the Eberhardt School of Business need only complete three Economics electives in the Applied Economics Track.

c. Bachelor of Science – Mathematical Economics Track:

ECON 160	Mathematical Economics or both ECON 101L Intermediate Microeconomic Analysis Laboratory and ECON 103L Intermediate Macroeconomic Analysis Laboratory
ECON 190	Econometrics

MATH 51, 53 and 55 Calculus I, II and III

MATH 72	Operations Research Methods

(or MATH 74 Discrete and Combinatorial Mathematics)

MATH 141 Linear Algebra (or MATH 145 Applied Linear Algebra)

Two (2) Economics electives numbered 71 or higher

One approved Math elective

d. First-Year Program

In addition to Pacific Seminars I and II and other general education courses, students majoring in Economics should complete ECON 53-Introductory Microeconomics during the fall semester and ECON 55-Introductory Macroeconomics during the spring semester of the freshman year.

4. The Minor in Economics requires six courses, at least 10 units of which must be taken at Pacific. The minor requires:

ECON 53 Intro. to Microeconomics

ECON 55 Intro. to Macroeconomics

Four economics electives numbered 61 or higher (ECON 101 is strongly recommended as it is a prerequisite to several upper division courses.) BUSI 31 and BUSI 33 together can substitute for one of the economics electives.

Course Offerings

ECON 51. Economic Principles and Problems (3)

A general introduction to the nature, significance and scope of economics. The principles of economic analysis are developed and used to examine a wide variety of current and/or controversial economic issues. This course is ideal for students who are unlikely to take another economics course; however, for students choosing to major or minor in economics after taking this course, ECON 51 may substitute for the ECON 55 requirement. Students can receive departmental credit for ECON 51 only if it is taken prior to both ECON 53 and ECON 55.

ECON 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: Algebra skills, as evidenced by a passing score on the General Education quantitative skills examination or MATH 5 or 7 or 33 or 45 or 51 or 55, or a 3 on the AP Math test.*

ECON 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. *Prerequisites: Algebra skills as evidenced by a passing score on the General Education quantitative skills examination or MATH 5 or 7 or 33 or 45 or 51 or 55, or a 3 on the AP Math test. ECON 53 is recommended first for students planning to take both ECON 53 and 55.*

ECON 71. Global Economic Issues (4)

An introduction to all aspects of the global economy. Consideration of how the U.S. economy is linked to the rest of the world and how the world's economic problems affect the well-being of every U.S. citizen. Reviews economic principles in covering the basics of international trade, international finance, globalization, economic development of the poor countries, world population problems, international environmental economics, and transition economies. *Prerequisites: ECON 53 and 55 or 51. (ECON 71 cannot be taken for credit if the student has taken or is concurrently enrolled in ECON 121 or 123. ECON 71 is also listed as an SIS course.)*

ECON 93. Special Topics (4)

ECON 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: ECON 53.*

ECON 101L. Intermediate Microeconomic Analysis Laboratory (1)

This addition to ECON 101 will present microeconomic theory in a more rigorous, formal and mathematical way. It is necessary for students completing the Bachelor of Science – Mathematical Economics Track or planning to attend graduate school in Economics. *Prerequisite: ECON 53 and Calculus (MATH 33, MATH 51 or a 4 or a 5 on AP Calculus AB).*

ECON 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: ECON 53 and 55.*

ECON 103L. Intermediate Macroeconomic Analysis Laboratory (1)

This addition to ECON 103 will present macroeconomic theory in a more rigorous, formal and mathematical way. It is necessary for students completing the Bachelor of Science – Mathematical Economics Track or planning to attend graduate school in Economics. *Prerequisite: ECON 53, ECON 55 and Calculus (MATH 33, MATH 51 or a 4 or a 5 on AP Calculus AB).*

ECON 111. History of Economic Thought (4)

The rise and fall of schools of economic thought around the world, as well as specific ideas, theories, doctrines, applications and policies. The course will connect the history of economic thought with the history of the underlying economies. We will examine the effects of economic evolution, economic revolution and changes in technology resources, as well as contemporary political, social and religious developments. Expect lively discussions, particularly of the political influences affecting individual economists and the implications of their work. We will read works about and by Adam Smith, David Ricardo, Thomas Malthus, John Stuart Mill, Karl Marx, modern microeconomists, Veblen, Keynes, and others. *Prerequisite: ECON 53 and 55 or permission of the instructor.*

ECON 118. Globalization History: Economic,Environmental, and Demographic Interactions (4)
'Globalization' is conveniently considered a recent, even post –World War II, phenomenon. This conventional notion is challenged in this course, where we analyze new research that states that deep worldwide connections have existed for many centuries. The course is divided into three sections. Part I examines geographical and environmental factors that determined living standards in specific regions throughout the world during the past 13,000 years. Part II focuses on the birth of global trade beginning in the 16th century. Dynamics within China played a crucial role, while Europeans were middlemen (rather than prime movers) in this process. In Part III of the course, the Industrial revolution in Europe is compared with industrial condition within China, Japan, and elsewhere simultaneously. A debate is discussed concerning whether industrialization occurred first in northwest Europe because of internal conditions within a European core, versus a view that environmental constraints at a global level played a key role in determining why industrialization first appeared within northwest Europe. *Prerequisites: ECON 53 and 55, or permission of the instructor.*

ECON 121. International Trade (4)
A study of the economic theory surrounding the exchange of goods and services between countries and the application of this theory to current international issues. Topics include the determination of world trade patterns, the effects of changing trade patterns on income distribution within a country; the pros and cons of trade barriers; trade concerns of developing countries; and the effects of international trade on the world's natural environment. *Prerequisites: ECON 53 and 55. (Course also listed among SIS courses).*

ECON 123. International Finance (4)
A study of the financial side of international economics. Topics include balance of payments accounts and the foreign exchange market; exchange rate determination and the macro economy; the international debt crisis and capital flight; and the history of international monetary systems. *Prerequisites: ECON 53 and 55. (Course also listed among SIS courses.)*

ECON 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: ECON 53 and 55 or permission of the instructor*. (Course also listed among SIS courses.)

ECON 131. Public Finance (4)
Study of the role of the government in the economy. Uses the tools of economic analysis to examine how government policies affect not only the efficiency with which the economy operates but also the welfare of its citizens. Covers both the expenditure and the taxation sides of government activity, examines public choice questions of policy selection and implementation and, throughout the course, considers the equity implications of government actions. Primary focus is on government at the national level; however, significant attention is paid to issues relevant or specific to state and local governments. *Prerequisites: ECON 53 and 55 or 51.*

ECON 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: ECON 53 and 55, or permission of the instructor.*

ECON 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 policy issues such as housing, poverty, crime and pollution. *Prerequisite: ECON 53.*

ECON 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: ECON 53; ECON 101 recommended.*

ECON 157. Environmental and Natural Resource Economics (4)
The application of economic theory to natural resource and environmental issues. Microeconomic principles are used to suggest what a proper balance between human activity and environmental preservation might be and to critically analyze current environmental policy. Both domestic and global issues are addressed. Topics include resource scarcity, sustainability and sustainable development, water conservation, mobile- and stationary-source air pollution, global warming, and toxic substances. *Prerequisite: ECON 53.*

ECON 160. Mathematical Economics (4)
A mathematical analysis of neoclassical theories of production and consumption. Differential calculus and linear algebra applied to unconstrained and constrained extrema, including the envelope properties of optimization problems. Primary emphasis is placed on the application of mathematics to economic theory. Topics include competitive and noncompetitive firms and industries, Cobb-Douglas and CES production functions, the Slutsky equation and applications of homogeneous functions to economics. *Prerequisites: ECON 101, 103 and MATH 33, or permission of the instructor.*

ECON 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: ECON 53, 55; MATH 37 or 39 or 130 or 131 or permission of the Associate Dean; some familiarity with computer programming recommended.*

ECON 171. Political Economy (4)
This course begins with an examination of the ideology which underlies Neoclassical Economics. Once the world view of economics is understood, we explore three specific "social/economic/political" issues wherein ideology plays a decisive role in current debates. We look, first, at the topic of "Income Distribution, Poverty and Welfare in the U.S." (including such diverse issues as human capital theory, minimum wage and foreign competition). Next, we turn to the topic of "Women in the Workforce," (including the issues of comparable worth, the feminization of poverty and affirmative action). Last, we explore the subject of "Environmental Economics," focusing here on the equity/efficiency issues surrounding the economists' perspective of the crises and the solutions they offer for this critical world problem. *Prerequisites: ECON 53 or 51.*

ECON 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: ECON 53.* (Course also listed under Gender Studies.)

ECON 190. Econometrics (4)
A study of the methods used to test economic theory with real-world data. The course presents the theory underlying common econometric methods and gives students experience in applying these analytical tools to data from a variety of sources. Students learn to develop testable hypotheses based on economic theories they have learned in earlier courses and to make reliable statistical inferences about these hypotheses. Students will gain a working, applicable knowledge of the skills and software used by many professional economists and sought by many employers. *Prerequisites: ECON 53 and 55 (or 51) and MATH 37 or 39 or 130 or 131.*

ECON 191. Independent Study (2-4)

ECON 93, 193. Special Topics (4)

English

Professors: Borden (Chair), Camfield

Associate Professors: Lehmann, Norton, Zhou, Dobbs, Smith

Assistant Professors: Sonstroem

Department Phone: (209) 946-2121

Website: englishweb.pacific.edu

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, law, medicine or other professions after further schooling.

Degrees in English

Undergraduate majors may focus their elective courses to emphasize writing, literature, language, or film studies. The department offers a minor in English for students committed to a different academic major.

English courses are offered in the following areas: British and American literature; writing; criticism of literature and allied arts (including film); English language. Upper-division courses (those numbered 100 or above) are more specialized or applied than lower-division courses and often presume prior training in the subject. Please refer to the Web site (englishweb.uop.edu) for up-to-date course listings.

Requirements for a Major in English

Candidates for the B.A. degree with a major in English must complete a minimum of 11 courses (at least 40 units), including a four-course lower-division core:

1. ENGL 25 any section of English 25
2. ENGL 41 British Literature before 1800

3-4. Two of the following survey courses:

- ENGL 43 British Literature after 1800
- ENGL 51 American Literature before 1865
- ENGL 53 American Literature after 1865

The upper-division requirement consists of:

5. A course in critical theory, either
   - ENGL 125 Critical Colloquium or
   - ENGL 127 Contemporary Critical Issues
6. All English majors will be required to fulfill an upper-division writing requirement by completing one of three writing courses:
   - ENGL 105 Technical Communications
   - ENGL 107 Writing NonFiction or
   - ENGL 109 Writing in the Workplace

7-11. Five electives: at least four of these electives must be upper-division courses

- ENGL 105 Technical Writing
- ENGL 107 Writing NonFiction
- ENGL 109 Writing in the Workplace
- ENGL 111 Creative Writing: Fiction and Drama
- ENGL 113 Creative Writing: Poetry
- ENGL 121 Major Filmmakers
- ENGL 122 Literature and Psychology
- ENGL 123 Film, Literature, and the Arts
- ENGL 124 Film History
- ENGL 125 Critical Colloquium
- ENGL 127 Contemporary Critical Issues
- ENGL 131 Shakespeare
- ENGL 141 Topics in British Literature Pre-1800
- ENGL 143 Topics in British Literature After 1800
- ENGL 151 Topics in American Literature Before 1865
- ENGL 153 Topics in American Literature After 1865
- ENGL 161 Topics in American Ethnic Literature
- ENGL 163 Topics in Transnational Literatures
- ENGL 181 English Language I
- ENGL 182 English Language II
- ENGL 31 Aesthetics of Film or a third lower-division survey course is acceptable as the fifth elective:
- ENGL 41 British Literature Before 1800
- ENGL 43 British Literature After 1800
- ENGL 51 American Literature Before 1865
- ENGL 53 American Literature After 1865

First-Year Program

Students majoring in English should complete ENGL 25 and at least one additional course from the lower-division core during the freshman year. In the sophomore year they should complete the remaining two courses in the lower-division core.

Requirements for a 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:

ENGL 25 and two of the following five courses:

- ENGL 41 British Literature before 1800
- ENGL 43 British Literature after 1800
- ENGL 51 American Literature before 1865
- ENGL 53 American Literature after 1865
- ENGL 31 Aesthetics of Film

and three or more upper-division electives.

Single Subject Credential in English

Single Subject students will be required to take TWO upper-division writing courses from one of the following: ENGL 105 (Technical Communications), ENGL 107 (Writing NonFiction), and ENGL 109 (Writing in the Workplace).

Students interested in pursuing certification to teach English at the secondary school level should consult with the English Department Credential Adviser, Dr. Cynthia Dobbs.

Course Offerings

ENGL 23. Business Communications (4)
This course is designed to help students produce professionally-oriented writing that is clear, concise, and persuasive. For each assignment students will create documents with specific professional applications, such as resumes, memos, proposals, reports, and/or brochures. Students will be challenged to recognize the role audience and situation plays in designing any professional document. Since verbal communication is just as important as written, students will also present their work in class using PowerPoint. *Prerequisites: PACS I, II.*

ENGL 25. English 25 (4)
English 25 provides an introduction to the discipline of English studies. Students are expected to write about and discuss various topics that arise in the study of literary works. *Prerequisites: a passing score on the General Education writing skills examination or WRIT 21. Multiple and varied sections are listed by thematic focus title each semester.*

ENGL 31. Aesthetics of Film (4)
An introduction to the principles of artistic expressiveness of films; lighting, color, camera, composition, space, movement, image, setting and sound. Attention is also given to narrative techniques and editing styles. Explores such theories as realism, formalism, surrealism, Marxism, psychoanalysis and gender theory. Both American and foreign films are viewed and discussed.

ENGL 41. British Literature before 1800 (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 distinctive features of movements and periods such as the Renaissance and the Augustan period, and for the expanding definition of English literature.

ENGL 43. British Literature after 1800 (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 ENGL 41, but that course is not a prerequisite.

ENGL 51. American Literature before 1865 (4)
A survey of principal American writers through the middle of the 19th century, including poetry, prose and at least one longer work of prose. Writers that may be treated include Hawthorne, Poe, Melville, Douglass, Stowe, Bradstreet, Jefferson and Dickinson. Emphasis will be placed on the thought, aesthetics, and cultural impact of these and other writers.

ENGL 53. American Literature after 1865 (4)
The second half of the American literature survey, beginning with the Realists (writers such as James, Twain, Crane and Chopin) and moving into the 20th century with such authors as H.D., Pound, Stevens, Eliot, Frost, Hemingway, Cummings, Faulkner, Williams and Hughes. Contemporary writers will include O'Hara, Ginsberg, O'Connor, Snyder, Morrison, Li-Young Lee, and Alice Walker.

ENGL 87/187. Internship (2-4/2-4)
Supervised experience in an off-campus work setting drawing on skills particular to English studies, such as writing, editing, analyzing of texts, etc. Internships are limited to the number of placements available. ENGL 187 represents advanced internship work involving increased independence and responsibility.

ENGL 93. Special Topics (4)

ENGL 101. Integrative Tutorial (1)
Integrative Tutorial (1 unit/semester, with the expectation that a student will take it at least three and as many as six consecutive semesters). Designed to help students draw their studies together, the integrative tutorial is a form of independent study in which a faculty member helps a student see the connections between courses she/he has taken to fill in gaps that would otherwise go unaddressed in course work. *Prerequisite: permission of the instructor.*

ENGL 105. Technical Writing (4)
Study of the process of preparing the documents most frequently used in professional settings: memos, letters, instructions, proposals, and reports. While the emphasis is on professional writing in science and engineering fields, the principles apply to other fields as well. *Prerequisite: permission of the instructor.*

ENGL 107. Writing Non-Fiction (4)
An upper-division seminar in the writing of non-fiction prose, emphasizing such familiar forms as the essay, biography, autobiography, professional and academic articles and free-lance writing. These and other sub-genres of non-fiction will be the focus for this collaborative, seminar-style course intended for apprentice writers interested in polishing and publishing their work.

ENGL 109. Writing in the Workplace (4)
Advanced practical writing course on how to produce clear, concise, and persuasive documents for a variety of readers and in a variety of contexts. Proofreading and revision skills are emphasized, and assignments cover the most commonly used forms in professional writing, such as letters, memos, and proposals. Course includes one service learning project, which gives students the opportunity to apply their skills outside of the classroom.

ENGL 111. 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.

ENGL 113. 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.

ENGL 121. Major Filmmakers (4)
Focus is on the work of such major directors as Coppola, Fassbinder, Scorses, 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.

ENGL 122. 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 film, to the literary work and the creative process.

ENGL 123. 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.

ENGL 124. Film History (4)
Comprehensive look at the history of cinema, from its beginnings in Europe and America, through the emergence of national cinematic traditions and the classical period tied to the Hollywood studio system, and concluding with current transnational developments. Screening and analysis of significant American and international films.

ENGL 125. Critical Colloquium (4)
A study of the theory and practice of the major modes of interpreting and criticizing literature, including but not limited to formalist, psychoanalytic, structuralistic, gender and feminist and deconstructionist in representative perspectives offered by designated English Department members and guest lecturers.

ENGL 127. 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, post-colonialism, 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.

ENGL 131. 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.*

ENGL 133. Major British Authors (4)
Advanced, in-depth analysis of an individual author (or pair of authors). Topics likely to be covered include the range of the author's work, cultural context, significant literary influences, impact on other authors, and major scholarship written about the author. Students will conduct directed research. By semester the course varies to focus on authors such as Chaucer, Milton, Austen, G. Eliot, Hardy, Forster, Joyce, Woolf, and Murdoch/Byatt. May be repeated once for credit with a different focus.

ENGL 135. Major American Authors (4)
Advanced, in-depth analysis of an individual author (or pair of authors) including aesthetic qualities of the work throughout the author's career, historical and cultural contexts shaping the work, literary influences on the author's writing and thought, influence on other writers, and major scholarship about the work. Students will conduct directed research. By semester the focus of the course changes to include authors such as Twain, Dickinson & Whitman, Ellison & Wright, Faulkner & Morrison, Frost & Stevens, Kingston & Tan, Melville, Steinbeck & Dos Passos. May be repeated once for credit with a different focus.

ENGL 141. Topics in British Literature Pre-1800 (4)
Study of a single literary period designed to strengthen students' critical reading and writing skills as well as examine questions of literary themes, cultural and intellectual context, national identity, ethnicity, class, and/or gender. Students will conduct directed research. Topics vary with titles such as The Age of Beowulf, The Medieval Mind, English Renaissance, Women Writers before Austen, and The Age of Unreason: 18th Century Literature. May be repeated once for credit with a different focus.

ENGL 143. Topics in British Literature After 1800 (4)
Study of key literary movements, genre and aesthetic developments, historical and social contexts, and thematic concentrations from Romanticism to the Victorian Age to Modernism and the Post World War II era. Students will conduct directed research. Topics change. Representative titles include the Victorian Novel, British Lyric poetry, and Modern and Contemporary British Literature. May be repeated once for credit with a different focus.

ENGL 151. Topics in American Literature before 1865 (4)
Study of significant literary periods or movements in America before 1865. Topics change while the course examines the signature features of a specific period or movement: its aesthetic and thematic concerns, as well as the political, economic, intellectual, and cultural contexts shaping and shaped by the literature in question. Possible titles include The American Renaissance, The Birth of the American Short Story, Early American Humor, The Politics of Home Life, and Slavery and The American Imagination. May be repeated once for credit with a different focus.

ENGL 153. Topics in American Literature After 1865 (4)
In-depth analysis of significant literary periods or movements in America after 1865. Topics change while the course examines the signature features of a specific period or movement: its aesthetic and thematic concerns, as well as the political, economic, intellectual, and cultural contexts shaping and shaped by the literature in question. Possible titles include American Realism, American Modernism, Modern American Novel, American Nature Writing, Literature of the American South, Literature of California, Contemporary American Fiction, and Contemporary American Poetry. May be repeated once for credit with a different focus.

ENGL 161. Topics in American Ethnic Literature (4)
Studies of contributors to American Literature within the context of their shared ethnicity. Topics change. Possible offerings include American Immigrant Literature, African-American Poetry, Black Women Writers, Blues, Jazz and Literature, and Chicano/a Literature. May be repeated once for credit with a different focus.

ENGL 163. Topics in Transnational Literatures (4)
Comparative analysis of literature from two or more national traditions, including works from several historical periods or a single period, with an emphasis on genre, style, cultural milieus, and critical affinities between texts. Topics change. Possible offerings include Masterpieces of World Literature, Romanticisms, International Modernism, Postcolonial Literature, Literature and Film of the Pacific Rim, and Modernist Poetry. May be repeated once for credit with a different focus.

ENGL 181. English Language I (4)
Studies the nature and use of English as a language. Considers word-formation (morphology) and phrase and clause structure (syntax) in relation to meaning (semantics). Also considers English in customary use (pragmatics) and the structure of texts. The course is intended for prospective teachers, writers, lawyers and other professionals who work with language.

ENGL 182. English Language II (4)
Studies the linguistic and stylistic properties of texts. Continues study of pragmatics and text structure begun in ENGL 181 English Language I and proceeds to stylistics, poetics, and linguistic register. Considers English phonology and orthography in connection with the study of texts in historical (Old, Middle, and Early Modern) English and regional English. Intended for English majors and others who will use linguistic knowledge in the analysis and production of texts. *Prerequisite: ENGL 181.*

ENGL 191. 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.

ENGL 93, 193. Special Topics (4)
Additional courses not covered by regular offerings.

ENGL 197. Undergraduate Research (2-4)
Provides opportunity for qualified students to complete a supervised original research project. Students are encouraged to travel to collections and use unique materials and resources in developing an original paper or other public presentation of their findings.

Ethnic Studies Program

The Ethnic Studies Minor is an interdisciplinary program. It offers a number of courses on issues of race and ethnicity, including an introductory course. It also coordinates courses taught in various academic departments. The focus of the program is on the experiences and contributions of historically disenfranchised groups such as African Americans, Asian Americans, Latino Americans, and Native Americans in the formation of the U.S. nation-state and in the development of an inclusive democracy.

The Ethnic Studies Minor broadens a student's major field of study. It lays a foundation for graduate studies for students who want to further pursue their education. The minor enhances students' employment opportunities in law, education, business, medicine, government, communication, and social services.

Goals and Objectives

The Ethnic Studies Program's Goals and Objectives consist of the following: 1) to provide an opportunity for all students to gain a deeper understanding of the relationship between social structure and the experience of racial and ethnic difference; 2) to examine the problems of racial and ethnic inequality as a means of promoting the pursuit of social justice; 3) to investigate the intricate relationships among race, class, gender, and culture historically, and in contemporary society; 4) to facilitate the incorporation of scholarship on underrepresented racial and ethnic groups into the university curriculum; 5) to equip students with historical frameworks and theoretical tools that will enable them to engage more productively in their respective areas of study, and to better prepare them for their leadership roles in a democratic society; and 6) to foster ties among racial and ethnic communication, including students of various racial and ethnic backgrounds on campus and in the larger communities.

Requirements for the Minor

Students wishing to minor in Ethnic Studies must complete a minimum of six courses (at least 20 units), including the core course, ETHN 11: Introduction to Ethnic Studies, four other Ethnic Studies courses in more than one discipline, and one Ethnic Studies capstone course. At least two of these courses, not including the capstone course, must be of upper division.

It is advisable that students planning to minor in Ethnic Studies take ETHN 11 as early as possible at its next offering. No more than three Ethnic Studies courses will count toward the minor before ETHN 11 is completed.

ETHN 11 is a prerequisite for the capstone courses: ETHN 197: Undergraduate Research and ETHN 189: Experiential Learning Practicum. Students who choose to take ETHN 197 must have a grade point average of at least 2.5. No more than two courses from Ethnic Studies can be double-counted toward fulfilling the requirements for both the Ethnic Studies Minor and another minor or major in a different discipline.

Core Course

ETHN 11: Introduction to Ethnic Studies

Required for students who wish to complete a minor in Ethnic Studies.

This is a foundational course which will provide students with critical race theories and historical-sociological perspectives on the formation of racial and ethnic relations in the United States.

Course Offerings (Note: UD indicates an upper division course)

Communication

COMM 143: Intercultural Communication

Economics

ECON 180: Labor Economics (UD prerequisite: ECON 51)

Education

CURR 129/229: Introduction to Bilingual Education (UD)

EADM 130/230: Cultural Basis of Conflict in Education (UD)

English

ENGL 25: American Families

ENGL 25: Black Women Writers

ENGL 25: Gender, Race, and Representation in Film and Fiction

ENGL 25: Space, Body, and Identity: Multi-Ethnic American Literature

ENGL 25: Between Two Worlds: Exile in Contemporary Lit. & Film

ENGL 161A: Blues, Jazz, and Literature (UD)

ENGL 161B/SPAN 124: Hispanic Writers in the U.S. (UD)

ENGL 161C: Contemporary Asian American Literature (UD)

Ethnic Studies

ETHN 11: Introduction to Ethnic Studies

ETHN 51: Introduction to Black Studies

ETHN 97: Prejudice and Racism

ETHN 142: Implementation for Social Change

ETHN 146: Cultural Contributions of African-Americans

ETHN 164: Ghetto Life

ETHN 191: Independent Study

ETHN 189: Experiential Learning Practicum

ETHN 193: Special Topics on Issues of Race and Ethnicity

ETHN 197: Undergraduate Research

History

HIST 120: Native American History

HIST 121: Colonial America (UD)

HIST 124: History of the American West (UD)

HIST 130: History of California (UD)

HIST 132: American Immigration

HIST 134: African American History (UD)

Music

MHIS 8: History of Jazz

Sociology

SOCI 61: Urban Society and Policy

SOCI 104: Sociology of Sport (UD)

SOCI 108: Food, Culture, and Society (UD)

Speech- Language Pathology, School of Pharmacy and Health Sciences

SLPA 143: Multicultural Populations (UD)

Sport Sciences

SPTS 141: Sport in America (UD)

Category III: Independent/Exit Projects

Required: one course under this category. Each course in this category has a prerequisite of ETHN 11 and at least one course from Category I and one course from Category II. In completing an independent research or service-learning project, the student is expected to integrate and apply the skills, knowledge, theories, and perspectives he or she has learned within the program.

Course Offerings:

ETHN 11. Introduction to Ethnic Studies (4)

This course introduces students to the theories and practices of Ethnic Studies, with a focus on the formation of race in the United States, and its impact on the experiences and social statuses of racialized groups, including, but not limited to, Black, Latinos, Native Americans, Asian/Pacific Islanders, and Whites. Our primary course contents include documentary histories, media representations, and critical race theories. Although California will serve as the major geographical location of racial formation in our study, the issues we explore are mostly national, and at times, transnational, in scope. Through a critical examination of histories and contemporary issues regarding the social positions of racialized groups in the U.S., we seek to understand "the irreducibility of race in U.S. political and cultural life," and the think about class, culture, and inequality "in ways that take racial divisions and conflicts into primary account" (Winant 33). At the same time, we will explore possible alternatives for understanding the differences among diverse populations beyond the existing models of racial categories. In this context, the contributions of historically marginalized "minority" Americans to the development of American democracy will be an on-going course concern in order to explore potential solutions for achieving greater equity and understanding.

ETHN 51. Introduction to Black Studies (4)

This course provides an introduction to the interdisciplinary field of African American Studies. The course will provide students with a substantive knowledge base of the historical, cultural, intellectual, social, political, and economic experiences of African Americans.

ETHN 97. Prejudice and Racism (4)
This course will define, examine, explore, and analyze prejudice and racism from a historical and multicultural perspective. Students will be provided with opportunities to acquire a substantive knowledge base from required readings, video showings, class discussions and individual (invited guests) testimonies. Students will be encouraged to examine their own attitudes and values, within the context of "Prejudice and Racism".

ETHN 142. Implementation for Social Change (4)
This course is designed to examine the rationale, general strategies, and procedures for effecting social change. The course will focus on planned change in which attempts to bring about change are conscious, deliberate, and intended. The focus of the change efforts will be with systems that directly and indirectly impact the social functioning of African Americans. People of "color" continue to be subjected to hostile and oppressive individual, organizational and environmental conditions.

ETHN 146. Cultural Contributions of African Americans (4)
This course will address the social, political, economic, psychological, aesthetic and cultural contributions of African Americans to America. America is truly "A Nation of Nations" (Walt Whitman). People of American ancestry represent one of these nations. "They are philosophers, scholars and human rights proponents from the era of slavery to the present", says Talmadge Anderson.

ETHN 164. Ghetto Life (4)
This course will address "Ghetto Life" from a historical and current perspective, the injustices-sociological, psychological, economical, and educational that people in the "Ghetto" are subjected to will be fully examined. Students will be challenged to reassess "The Meaning of Life" for some people who are forced to reside in a geographical area (community of physical space), and a psychological area (community of mind) that are void of life enhancing means for a quality of life that all human beings deserve. What are the underlying factors that create a "Ghetto"? We will answer this question.

ETHN 189. Service Learning Practicum (4)
As one of the exit courses that meet a requirement for students minoring in Ethnic Studies, the Service Learning Practicum offers students an opportunity to integrate and apply the skills, knowledge, and theories they have learned to community-based service learning projects related to their academic interests. Each student will work with a faculty supervisor, who will provide guidance for the student's experiential learning. *Prerequisite: Completion of ETHN 11 and at least one course each from Categories I and II of Ethnic Studies Minor.*

ETHN 191. Independent Study (2-4)
Undergraduate independent study. A student taking this course will be working with a faculty member approved by the Director of Ethnic Studies.

ETHN 193. Special Topics (2-4)

ETHN 197. Undergraduate Research (4)
This course is an undergraduate research-project course. It is one of two exit courses that meet a requirement for students minoring in Ethnic Studies. It offers students an opportunity to integrate and apply the skills, knowledge, and theories they have learned to a particular research project in a field of their academic interest. Each student will work with a faculty supervisor who has expertise in the student's research topic. *Prerequisites: Overall GPA 2.5 or above, completion of ETHN 11 and one course each from Categories I and II of Ethnic Studies Minor.*

Film Studies

Professors: Borden (Chair), Schleier, Golsan

Associate Professors: Lehmann

Assistant Professors: Lu

Adjunct: Cook

Department Phone: (209) 946-2909

The program deals with film in the context of the liberal arts, with focus on the medium as an art form. It examines film as a "text" which can be studied through diverse critical and theoretical perspectives, including such approaches as Formalism, Neo-Historicism, psychoanalysis, gender theory, auteur theory and genre theory. Film is analyzed both from its technical aspects and its function as a cultural referent. It accommodates both high art and popular culture, both an international discourse and an individual auteurism.

Students can take film courses to enhance their liberal education through cultivation of critical and aesthetic knowledge, or they may use their studies to enter a variety of professions. These include: teaching, filmmaking, writing, work in the film/television industry, advertising, computer software, graphic design, entertainment law, production finance. Graduate programs in film, film and literature, and interdisciplinary studies are available. Also, students may go on to technical training in editing, cinematography, directing and screenwriting.

Degrees in Film

The Major: A self-designed major is possible with the assistance of a faculty adviser.

The Minor: A minimum of five courses (or 18 units) including the required core course ENGL 31-Aesthetics of Film.

Regular Offerings

ARTH 114	20th Century European Art & Film
ARTH 116	Contemporary World Art
ARTH 118	Art in the United States: 1865-1945
CHIN 193	Special Topics: China Through Film and Literature
ENGL 31	Aesthetics of Film
ENGL 121	Major Filmmakers
ENGL 122	Literature and Psychology
ENGL 123	Film, Literature and the Arts
ENGL 124	Film History
ENGL 127	Contemporary Critical Issues (when taught by film faculty)
ENGL 131	Shakespeare
ENGL 191	Independent Study
ENGL 193	Special Topics such as: Alfred Hitchcock, Woody Allen, Film Noir, Contemporary World Cinema, Contemporary American Cinema
FREN 120	French Cinema
RELI 171	Religion and Cinema

One course toward the minor may be chosen from among the following pool of adjunct offerings.

ARTS 11	Photography I
ARTS 141	Photography II
ARTS 143	Photography III
COMM 131	Media Production

Course Offerings

ARTH 114. 20th Century European Art (4)
Major styles of the 20th century, including Fauvism, Cubism, Expressionism, Surrealism, etc., and their appearance in the visual arts, theater design, and film will be explored. We will also evaluate how Western European artists borrowed imagery from other cultures and their relationship to colonialist concerns. We will also consider representations of the body and how this imagery relates to gender constructions. The effects of urbanization upon the artistic enterprise and the development of abstract and non-objective art will also be considered. This course satisfies a requirement of Film Studies minor.

ARTH 116. Contemporary World Art (4)
This course will explore major artists, styles, and movements in world art from 1945 until the present. These include Abstract Expressionism, Pop, Land Art, Installation, Video, Performance,

Feminist, Post Colonial, among others. At least five films will be shown that coincide with the aforementioned developments. Topics such as the use of new materials and media, the impact of popular culture and technology, the effects of censorship, and the relationship between art and gender issues will be discussed. We will explore art in the U.S., Europe, Japan, Africa, Australia, the Middle East, among others. This course satisfies the requirements for the Art History major and minor, the Film Studies major (self-designed) and minor, and the Gender Studies major (self-designed) and minor. There are no prerequisites, although ARTH 07, ARTH 09, or ARTH 114 is helpful.

ARTH 118. Art in the United States: 1865-1945 (4)
This course will explore major painters, sculptors, architects, and film makers in the U.S., 1865-1945. Topics such as depictions of race and immigration, the impact of technology upon visual representation, art and politics, and the impact of gender on art will be discussed. Expatriate art, the Ash Can School, the Stieglitz Group, the New Deal art projects and other significant styles will also be examined.

ARTS 11. Photography I (3)
This course is an introduction to photography's aesthetic and technological history. It is a Black and White photography course composed of three units of study (5 assignments) that develop skills and understandings with cameras and photographic materials within the context modern and post-modern photographic theory and aesthetics. Each assignment is issued through introductory lecture/field demonstrations and completed by the students in the field, studio and darkroom.

ARTS 141. Photography II (3)
This is a highly experiential course designed to provide direct, high quality contact with professional resources (human and material) and involve photographers in a selection of assignments exemplary of the larger field of professional photography. This class will undertake four assignments that involve studio visits, extensive fieldwork and in-class activities that provide publication experience through the creation of press-ready and web-ready photographic materials.

ARTS 143. Photography III (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: ARTS 141.*

CHIN 193. Special Topics (4)

COMM 131. Media Production (4)
This course covers practical and theoretical application of audio and video production techniques. Emphasis on aesthetic qualities of sight and sound productions. Some work in student media facilities involved. *Prerequisite: COMM 31 or permission of the instructor. Lab fee required.*

ENGL 31. Aesthetics of Film (4)
An introduction to the principles of artistic expressiveness of films: lighting, color, camera, composition, space, movement, image, setting and sound. Attention is also given to narrative techniques and editing styles. Explores such theories as realism, formalism, surrealism, Marxism, psychoanalysis and gender theory. Both American and foreign films are viewed and discussed.

ENGL 121. Major Filmmakers (4)
Focus is on the work of such major directors as Coppola, Fassbinder, Scorsese, 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.

ENGL 122. 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 film to the literary work and the creative process.

ENGL 123. 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.

ENGL 124. Film History (4)
Comprehensive look at the history of cinema, from its beginnings in Europe and America, through the emergence of national cinematic traditions and the classical period tied to the Hollywood studio system, and concluding with current transitional developments. Screening and analysis of significant American and international films.

ENGL 127. 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, post-colonialism, 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.

ENGL 131. Shakespeare (4)
Eight to ten of Shakespeare's plays on film, 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 works vary from term to term; the list may include such works as *Twelfth Night, The Tempest, King Lear, Macbeth, Richard II, Henry IV* (Parts One and Two) and *Henry VIII* from directors such as Branagh, Welles, and Kurosarva.

ENGL 191. 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.

ENGL 193. Special Topics (4)
Additional courses not covered by regular offerings.

FREN 120. Le Cinéma Français/French Cinema (4)
A study of the development of French cinema through the analysis of themes, styles, and cinematic techniques. In French. Films with English subtitles. Offered occasionally in English with no prerequisite. *Prerequisite for French version only; four semesters of college French or equivalent.*

RELI 171. 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.

Geosciences

Professors: Pearson

Associate Professor: Fox (Chair)

Assistant Professors: Burmeister, Rademacher

Department Phone: (209) 946-2482

Website:
www.pacific.edu/college/geosciences/index.htm

"Civilization exists by geological consent, subject to change without notice."
– Will Durant

Degrees in Geosciences

Five degree programs are offered through the department: the Bachelor of Arts in Geology, the Bachelor of Science in Geology, the Bachelor of Science in Geology-Geoscience Teaching Track, and the Bachelor of Science in Solid Earth Geophysics, Bachelor of Science in Environmental Science.

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. The Bachelor of Science in Geology prepares the student for graduate study or professional employment in geology. The Bachelor of Science in Geology-Geoscience Teaching Track covers subject areas required of students seeking the California Single-Subject Teaching Credential in Science. Students beginning this track before July 1, 2005 need to complete the program by July 1, 2009. Students beginning this track after June 30, 2005 will be under new program requirements, contact the Dept. Chair for details. The Bachelor of Science in Solid Earth Geophysics prepares the student for graduate study in geophysics or a career in exploration geophysics.

The Bachelor of Science in Environmental Science major is designed to impart students with the practical skills and knowledge required to critically evaluate environmental problems and issues, and provide applied solutions. The major is decidedly interdisciplinary in nature, focusing on the underlying natural processes relating to the environment and understanding and employing the scientific method. The need for broadly trained scientists in the area of environmental science is critical and the understanding of the importance of this field provides many employment opportunities. A BS in Environmental Science can lead to numerous employment opportunities with many different agencies and areas. Typical employment could involve working for consulting firms performing environmental restoration, producing environmental impact studies for both governmental agencies and private firms, and additional vital biological services. Other types of employment can be found with regulatory agencies seeking to ensure compliance with environmental regulations and laws, with environmental law firms, or public health agencies

Students seeking a minor in geology must complete a minimum of 20 units of coursework in the geosciences including an introductory laboratory course GEOS 51, GEOS 53, GEOS 55, GEOS 57 or GEOS 61 and at least three courses numbered GEOS 100 or higher.

Typical First-year Program

B.A. in Geology:

Fall:
- GEOS 51-Physical Geology (4)
- Pacific Seminar I (4)
- General Education Courses

Spring:
- CHEM 23-Elements of Chemistry (4) or CHEM 25-General Chemistry (5)
- GEOS 53-Geologic Evolution of the Earth (4)
- Pacific Seminar II (3)
- General Education Courses

B.S. in Geology:

Fall:
- GEOS 51-Physical Geology (4)
- Pacific Seminar I (4)
- MATH 51-Calculus I (4)
- or CHEM 25-General Chemistry (5)
- General Education Course

Spring:
- GEOS 53-Geologic Evolution of the Earth (4)
- Pacific Seminar II (3)
- MATH 53-Calculus II (4) or
- CHEM 27-General Chemistry (5)
- General Education Course

B.S. in Geology - Geoscience Teaching Track:

Fall:
- GEOS 51-Physical Geology (4)
- Pacific Seminar I (4)
- CHEM 25-General Chemistry (5) or BIOL 51-Principles of Biology (4)
- General Education Course

Spring:
- GEOS 53-Geologic Evolution of the Earth (4)
- Pacific Seminar II (3)
- CHEM 27-General Chemistry (5)or
- BIOL 61-Principles of Biology (4)
- General Education Course

B.S. in Geophysics:

Fall:
- GEOS 51-Physical Geology (4)
- Pacific Seminar I (3)
- MATH 51-Calculus I (4)
- CHEM 25-General Chemistry (5)

Spring:
- Pacific Seminar II (3)
- MATH 53-Calculus II (4)
- CHEM 27-General Chemistry (5)
- General Education Course

B.S. in Environmental Science

Fall:
- GEOS 43 – Environmental Science for Informed Citizens (4)
- BIOL 51 – Principles of Biology (4)
- Pacific Seminar I (4)
- General Education Course

Spring:
- GEOS 103 – Global Change (4)
- BIOL 61 – Principles of Biology (4)
- Pacific Seminar II (3)
- General Education Course

Academic Requirements

B.A. in Geology (124 units)

1. Successful completion of the General Education Program of the College of the Pacific - at least 42 units.
2. Successful completion of major courses following the formula in this list:

GEOS 51	Physical Geology
	OR
GEOS 53	Geologic Evolution of the Earth
	OR
GEOS 61	Geology of California
GEOS 100	Mineralogy
GEOS 104	Optical Mineralogy
GEOS 110	Igneous and Metamorphic Petrology
GEOS 112	Sedimentary Petrology
GEOS 114	Structural Geology
GEOS 161	Geologic Field Methods

One course in paleontology or stratigraphy (GEOS 53 or 120 or 193- Stratigraphy of North America)

One course in applied geology (GEOS 142, 144, 145, 148)

CHEM 23	Elements of Chemistry or
CHEM 25	General Chemistry

One computer course (may be met by GEOS 102-Spatial Analysis)

3. Balance of courses to complete 124 units can be electives, general education courses or major courses.

B.S. in Geology (124 units)

1. Successful completion of the General Education Program of the College of the Pacific – at least 42 units.
2. Successful completion of major courses following the formula in this list:

GEOS 51	Physical Geology
	OR
GEOS 53	Geologic Evolution of the Earth
	OR
GEOS 61	Geology of California
GEOS 100	Mineralogy
GEOS 104	Optical Mineralogy
GEOS 110	Igneous and Metamorphic Petrology
GEOS 112	Sedimentary Petrology
GEOS 114	Structural Geology
GEOS 136	Petrography
GEOS 161	Geologic Field Methods

One course in stratigraphy or paleontology (GEOS 120 or 193-Stratigraphy of North America)

Two courses in applied geology (GEOS 142, 144, 145, 148)

One additional elective course in geology.

CHEM 25,27	General Chemistry
PHYS 23,25	General Physics I, II
	OR
PHYS 53,55	Principles of Physics I, II
MATH 51,53	Calculus I & II

One statistics course or computer course. (May be met by GEOS 102-Spatial Analysis)

3. Balance of courses to complete 124 units can be electives or general education courses.

B.S. in Geology - Geoscience Teaching Track (124 units)

1. Successful completion of the General Education Program of the College of the Pacific – at least 42 units.
2. Successful completion of major courses following the formula in this list:

GEOS 51	Physical Geology
GEOS 53	Geologic Evolution of the Earth
GEOS 100	Mineralogy
GEOS 110	Igneous and Metamorphic Petrology
GEOS 112	Sedimentary Petrology
GEOS 114	Structural Geology
GEOS 120	Paleontology
GEOS 144	Geomorphology
GEOS 161	Geologic Field Methods
BIOL 51,61	Principles of Biology
CHEM 25,27	General Chemistry
PHYS 23,25	General Physics I, II
	OR
PHYS 53, 55	Principles of Physics I, II
PHYS 41	Astronomy

Two courses in mathematics (MATH 37 or higher)

One computer course (May be met by GEOS 102-Spatial Analysis)

3. Balance of courses to complete 124 units can be electives or general education courses.

B.S. in Geophysics (124 units)

1. Successful completion of the General Education Program of the College of the Pacific – at least 42 units.
2. Successful completion of major courses following the formula in this list:

Area I: Physics (six courses)

PHYS 53, 55	Principles of Physics I, II
PHYS 57	Modern Physics
PHYS 101	Electricity and Magnetism
PHYS 161	Thermal Physics
PHYS 181	Theoretical Mechanics

Area II: Geosciences (five courses)

GEOS 51	Physical Geology
GEOS 100	Mineralogy
GEOS 110	Igneous and Metamorphic Petrology or
GEOS 112	Sedimentary Petrology
GEOS 114	Structural Geology
GEOS 161	Geologic Field Methods

(Advise taking GEOS 193-Geophysics when available.)

Area III: Additional required coursework

MATH 37	Probability and Statistics
MATH 51	Calculus I
MATH 53	Calculus II
MATH 55	Calculus III
MATH 57	Ordinary Differential Equations
CHEM 25,27	General Chemistry
CIVL 130	Fluid Mechanics I

One computer course (May be met by GEOS 102-Spatial Analysis)

3. Balance of courses to complete 124 units can be electives or general education courses.

BS in Environmental Science (124 units)

1. Successful completion of the General Education Program of the College of the Pacific – at least 42 units
2. Successful completion of the major following the formula below:

Core

GEOS 43	Environmental Science for Informed Citizens (4)
GEOS 103	Global Change (4)

Biology coursework

BIOL 51	Principles of Biology I (4)
BIOL 61	Principles of Biology II (4)

One course in organismal biology, chosen from the following: (4)

BIOL 74 Biology of Insects, BIOL 76 Marine Biology, BIOL 77 Marine Birds & Mammals, BIOL 79 California Flora, BIOL 130 Plant Kingdom, BIOL 72 Vertebrate Biology

BIOL 175	Ecology (4)
	OR
BIOL 176	Ecology and Conservation Biology (4)

Chemistry Coursework

CHEM 25	General Chemistry I (5)
GEOS 142	Geochemistry (4)
CHEM 141	Analytical Chemistry (4)

Geology Coursework

GEOS 106	Earth Materials and the Environment (4)
GEOS 144	Geomorphology (4)
GEOS 148	Hydrogeology (4)

Computer/Math Coursework

GEOS 102	Spatial Analysis (4)
MATH 37	Introduction to Statistics & Probability (4)

Policy/Resource Management Coursework (choose 1 of the following)

GEOS 45	Soil, Water & War (4)
CIVL 171	Water and Environmental Policy (3)
ECON 71	Global Economic Issues (4)
ECON 157	Environmental and Natural Resource Economics (4)
INTL 174	Global Environmental Policy (4)

Humanities Coursework (choose 1 of the following)

PHIL 35	Environmental Ethics (4)
HIST 52	John Muir's World: Origins of the Conservation Movement (4)
HIST 136	American Environmental History (4)

Experiential Learning

GEOS 187	Internship (4) or
GEOS/BIOL/CHEM 197	Undergraduate Research (4)

Capstone

GEOS 163	Environmental Field Methods (3)
GEOS 185	Capstone Seminar in Environmental Science (3)

Students who plan to pursue graduate studies in Environmental Sciences are encouraged to take a year of the following: calculus (MATH 51, 53), organic chemistry (CHEM 121, 123), and physics (PHYS 23, 25 or PHYS 53, 55)

Course Offerings

GEOS 41. Environmental Geology (4)
A study of the interaction between humans and the physical environment. Analysis of the physical constraints placed on human activities by geological processes and the effects that human activities have on the environment. The course includes fieldwork.

GEOS 43. Environmental Science for Informed Citizens (4)
An interdisciplinary course focusing on the analysis of policy-relevant environmental problems in four domains: water, energy, climate, and land use – with an emphasis on human interactions.

GEOS 45. Soil, Water, and War (4)
This course links limited natural resources and historic human conflict. Historical topics that will drive discussion include agriculture and civilization in the Middle East and Africa and resource use in California. Analysis of these historical conflicts will allow us to achieve the learning objectives of understanding: a) water resources; b) soil formation and sustainability; c) the link between the natural environment and natural resources.

GEOS 51. Physical Geology (4)
Nature and origin of the earth materials, the processes and forces which create and change the surface morphology of the earth and the nature and origin of the earth's structures. A study of earth resources and human interactions with the environment. The course includes laboratory and field work.

GEOS 53. Geologic Evolution of the Earth (4)
An introduction to the geologic history of the earth as interpreted through analysis of the stratigraphic and fossil record, structural relationships and isotopic dating techniques. Particular emphasis is placed on the geologic evolution of North America. The course includes laboratory and field work.

GEOS 55. Physical Geography (4)
An overview of the interactions of earth's atmosphere, organisms, rocks and soil. The emphasis is on climate, energy and nutrient cycles, and landform evolution. The course includes laboratory and field work.

GEOS 57. Earth System Science (4)
An introduction to the study of the Earth using a systems approach. The focus will be on the subsystems (geosphere, hydrosphere, atmosphere, biosphere) and the dynamic interactions between them. The approach will be to develop an understanding of the balance that exists in the global environment as a result of the interactions between the systems. The course begins with a study of the Earth relative to the rest of the solar system, continues to a study of the various Earth systems and processes (plate tectonics, earthquakes, weather, oceans, etc.), and end with a study of global climate change. The course involves laboratory and field work.

GEOS 61. Geology of California (4)
A field-oriented study of the mountain belts and basins of California. A study of landform evolution, processes of mountain building, geologic hazards, origins of rocks plus biogeography and climate changes in California. The course includes laboratory and field work.

GEOS 93. Special Topics in Geosciences (3-4)

GEOS 100. Mineralogy (4)
A study of crystal morphology and identification of the most common minerals. The course includes laboratory work. *Prerequisites: CHEM 23 or 25 and GEOS 51.*

GEOS 102. Spatial Analysis and GIS (4)
This general education course familiarizes the student with methods of spatial analysis. The learning objectives include: Identifying and describing georeferenced data (i.e. linked to a specific location); describing the variability of georeferenced data; observing, designing, and performing spatial data research; comparing maps at different scales and in different projections; using spatial data to answer questions and make management decisions; using methods of spatial data collection and analysis, including geographic information systems (GIS), geographic positioning systems (GPS) and surveying equipment.

GEOS 103. Global Change (4)
Interdisciplinary study of Earth's dramatic and abrupt changes in the past and their tremendous environmental repercussions with an emphasis on human interactions and future changes. *Prerequisite: GEOS 43 or 51.*

GEOS 104. Optical Mineralogy (1)
A lab-oriented study of the optical methods of mineral identification using a polarizing microscope. *Prerequisite: GEOS 100 (may be taken concurrently) or permission of the instructor.*

GEOS 105. Field Studies (1-2)
Field study of geological phenomena in western North America. Involves minimum of three continuous days on a department-supervised field trip. Students can repeat this course for up to 4 units of credit. *Prerequisites: an introductory course in geosciences and permission of the instructor.*

GEOS 106. Earth Materials and the Environment (4)
A study of the origin, occurrence, identification, and environmental significance of earth materials (minerals, rocks, soils). Laboratory work will include the study of minerals and rocks in hand sample, as well as in thin section and with X-ray diffraction analysis. Environmental aspects such as the health effects of minerals, engineering properties of soil, acid mine drainage, etc. will also be addressed. *Prerequisite: GEOS 43 or 51 or 53 or 61.*

GEOS 110. Igneous and Metamorphic Petrology (4)
A study of the characteristics, occurrence, origin and classification of igneous and metamorphic rocks. The course includes laboratory and field work. *Prerequisite: GEOS 100, GEOS 104, or permission of the instructor.*

GEOS 112. Sedimentary Petrology (4)
A study of the characteristics, occurrence, origin and classification of sedimentary rocks with an emphasis on the materials and processes of sedimentation. The course includes laboratory and field work. *Prerequisite: GEOS 100.*

GEOS 114. Structural Geology (4)
Geologic structures and their origin. Tectonics, folding, faulting and processes of mountain building and plate motion. The course includes laboratory and field work. *Prerequisite: GEOS 51.*

GEOS 120. Paleontology (4)
A study of the description, identification, uses, principles, interpretation and methods of study of major groups of fossils; invertebrate and vertebrate animals, plants and single-celled organisms. The course includes laboratory work. *Prerequisite: GEOS 53 or permission of instructor.*

GEOS 136. Petrography (4)
Identification, classification, and interpretation of igneous, sedimentary, and metamorphic rocks using the petrographic microscope. The course includes laboratory work. *Prerequisites: GEOS 110 and 104 and 112.*

GEOS 142. Geochemistry (4)
The application of chemical principles to the study of geological processes. This course involves laboratory work. *Prerequisites: GEOS 51 and CHEM 23 or 25.*

GEOS 144. Geomorphology (4)
Comprehensive treatment of the principles of landscape development, analysis of topographic maps and interpretation of aerial photographs. The course includes laboratory and field work. *Prerequisite: GEOS 51.*

GEOS 145. Engineering Geology (4)
An introduction to the study of applied geology in which geologic principles, data and techniques are applied to civil engineering problems. The

course includes laboratory and field work. *Prerequisite: GEOS 51 or 61 or CIVL 140.*

GEOS 148. Hydrogeology (4)
A study of the different processes of water movement, including analysis of the importance of water in earth systems, the interactions of surface and subsurface water systems, and water as a human resource. Laboratory exercises and field work involve methodologies and principles used in research and practical applications. *Prerequisites: MATH 41 and CHEM 25.*

GEOS 161. Geologic Field Methods (4)
Introduction to the methods of field geology. *Prerequisite: GEOS 51, 110, 114.*

GEOS 163. Environmental Field Methods (3)
An introduction to the field methods of environmental science. Prerequisite: Senior standing in the Environmental Science major or permission of the instructor.

GEOS 185. Capstone Seminar in Environmental Science (3)
A seminar focused on local/regional environmental issues. Informed members of the community/region will present the issues and then students will work in teams to address scientific aspects of selected environmental problems. *Prerequisites: GEOS 163 and senior standing in the Enviornmental Science major.*

GEOS 187. Internship in Geosciences

GEOS 191. Independent Study (2-4)

GEOS 193. Special Topics (4)

GEOS 197. Undergraduate Research (2-4)

History

Professor: Swagerty

Associate Professors: Albala (Chair), Cox

Assistant Professors: Gerhard, Rohlf, Sparks

Department Phone: (209) 946-2145

Website: www3.uop.edu/cop/history/index.html

The History Department is comprised of a team of internationally recognized scholars committed to providing students with knowledge and skills necessary for success in many professions. We believe that the study of history is exciting, vibrant and vitally relevant to understanding the world in which we live. Through intense classroom contact, innovative pedagogical methods and extensive student research projects, we instill in our students human values, critical thinking skills and an appreciation for the complexities of issues that have been of perennial importance. As professional historians we have been particularly successful in disseminating these values to a broader audience, by lecturing publicly and publishing works for both academic and popular audiences.

Degrees in History

The Department of History offers a Bachelor of Arts degree with a major in History as well as a minor program. 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.

Recommended Progression of Study

Students should begin with foundation courses, proceed to globally-oriented courses and upper-level courses, and end with the capstone and Special Studies courses.

Academic Requirements

The following requirements pertain to all incoming freshmen, transfers and those students who have declared a history major as of September 2003 and thereafter. Those who have declared the major prior to this date will be expected to meet requirements detailed in earlier catalogs, but may plan their courses following the new guidelines if they so choose. Such individuals are strongly encouraged to enroll in the capstone seminar in their senior year. It is required for all others.

Major requirements: History majors must take two courses at the foundation level in sequence, one globally-oriented course and one course in each of the regional/temporal categories specified below. In the junior or senior year all majors must enroll in the capstone seminar. Special topics courses may be counted within any category as appropriate. Internships may not. Majors are required to take 10 four unit courses in total for the degree of Bachelor of Arts.

Minor in History

History minors take six courses for a minimum of 21 units, 10 of which must be taken at Pacific: two European, two United States, one "Other" or Non-Western, one elective from courses to be approved by the department. Four of the six courses must be at the 100-level.

Teaching Credential Track

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

Foundation Courses

Foundation courses are designed to acquaint students with the basic tools necessary for historical inquiry at the college level: critical reading and interpretive skills, research methods, and an appreciation for the complexities of constructing a well-reasoned historical argument. Majors are required to complete 2 foundation courses, in sequence, in their freshman year or within a year of transfer or declaration of major if comparable courses have not been taken at another institution.

HIST 10. 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.

HIST 11. 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. History 10 not required, but majors must take both in sequence.

HIST 20. United States History I (4)
A broad survey of Us History from European Exploration and settlement through the Civil War and Reconstruction.

HIST 21. United States History II (4)
A broad survey of United States history form the Civil War to the present.

HIST 30. East Asian Civilization I (4)
A broad overview of the rich histories and cultures of East Asia. We will study the timeless writings of Confucius, take a dusty journey down the Silk Road and follow Prince Genji's adventured in medieval Japan. Focuses primarily on China and Japan, but also nomadic peoples such as Tibetans, Mongols and others in Southeast Asia. Students will discover that East Asian civilizations were at the center of world history in terms of technology, wealth, cultural sophistication, political organization and quality of life.

HIST 31. East Asian Civilization II (4)
Survey of East Asian Civilizations from the 19th c. to the present. Covers China and Japan as well as Korea, Singapore and Vietnam. Focuses on East Asian transformation from traditional societies to modern ones as a result of confrontation with the West by examining their political, economic and cultural histories and traditions, providing a model of modernization different from that of the West.

HIST 40. Latin American Civilization I (4)
Latin American history from the conquest period of the sixteenth century to the wars of independence in the nineteenth century. Examines the Indian heritage of Latin America, with special attention to Maya, Inca, and Aztec cultures, and it traces the process by which both Spain and Portugal established colonies in the region that stretched from California to Argentina. Specific topics include colonial, political and economic systems, Indian resistance and rebellion, the Catholic Church, and women's roles.

HIST 41. Latin American Civilization II (4)
Latin American history from the 19th c. to the present. Examines numerous challenges faced by Latin American countries in the aftermath of independence, and traces the major political, economic, and social developments that have shaped the Latin America of today. Examines Argentina, Brazil, Chile, Peru, Colombia and Cuba. Specific topics include: the quest for economic independence, popular rebellion and revolution, the role of race and ethnicity, the changing roles of women, and the relationship of the US to Latin America.

Globally-Oriented Courses

HIST 50. World History I (4)
A broad survey of ancient civilizations (i.e. Mesopotamian, Egyptian, Hebrew, Greek, Indian, Chinese, Roman), social and economic structures and patterns of trade, cultural and religious traditions and intellectual contributions. Second half covers the development of medieval and early modern civilizations to the 1500s. Particular emphasis will be placed on the decline of the Roman Empire, the role and impact of Christianity and Islam, the European Expansion and global markets, and the European Scientific Revolution.

HIST 51. World History II (4)
A survey of World civilization from 1500 to the present. Focuses on patterns of colonization, globalization and the impact of such forces as science and technology, consumerism, and intellectual movements on world history. Other topics include war, the impact of religious movements and the environmental impact of modernity.

HIST 52. John Muir's World: Origins of the Conservation Movement (4)
Focuses on the life and legacy of California's most distinguished environmentalist, beginning in Scotland, moving to Wisconsin, Florida, California and Alaska, ultimately tracing global journeys to Europe, South America and Africa.

HIST 60. A History of Medicine (4)
Description: This course will begin by objectively examining ancient medical systems across the globe: Chinese, Ayurvedic, Native American, and will come to focus on the Greek tradition in the West. We will also discuss the transmission of medical knowledge through Arab, Jewish and medieval Christian authorities, and the impact of the discovery of the New World. The second half of the course will trace the influence of the scientific revolution and the development of modern medicine in the 19th and 20th centuries. Particular emphasis will be placed on the subfields of physiology, nutrition and herbal lore; in the second half of the course on anatomy, pathology and surgery. Biology, Premed, and Pharmacy students are encouraged to enroll, as well as non-science majors. *No prerequisites or specialized knowledge required.*

HIST 61. A Global History of Food (4)
Description: The scope of the course will be global, covering civilizations of Asia, America, Africa, and Europe and how cultures of these domesticated unique staples, which literally enabled these civilizations to expand and flourish. The course will cover history of the interaction of humans with food resources from earliest hunting and gathering societies to the present. The major theme of the course will be the process of globalization, imperialism and the growth of capitalist enterprise and the cost of indigenous cultures and traditional farming practices and how these processes were shaped by trade in food.

HIST 62. History of Warfare (4)
Taking a global approach, this course will examine the history of warfare from ancient times through the present. It will look at how warfare was shaped, and shaped by, social, political and technological changes. After briefly looking at warfare in ancient, traditional and medieval societies, the class will turn to the era of modern war beginning in the seventeenth century. From then on, technological and social changes transformed the conduct of war in many parts of the world. We shall trace the 19th century rise of total war and its 20th and 21st century variants. The course will end with a consideration of two recent transformations, nuclear capability and terrorism. In class assignments, students will have an opportunity to pursue their own interests on a variety of military related themes, events, or issues.

HIST 64. Peace and War – Honors (4)
This course explores the causes, consequences, and nature of both war and peace. It takes a historical and global approach to by examining these themes across time and within various cultures. It also explores alternatives to war and encourages students to consider what might be required to create a peaceful world.

HIST 65. Women and War (4)
This course takes an international approach to studying the history of women and war. Our objective will be to better understand how women's experience during war has changed over time and differed for women in a variety of countries. We will begin by studying the mythology of women and war, connecting ancient Greek war goddess Athena with present-day Hollywood depictions of women warriors. Lectures will then focus on the theories positioning women in war history, and will proceed with a survey of women's participation in several modern wars, comparing women's experience in the U.S. with women in other parts of the world. Finally, the course will end with an in-depth discussion of several key themes in the histories of women and war: domestic ideology, prostitution, nursing, soldiering, war work, and protest/peace politics.

Upper Level Courses

Pre-Modern Europe or Classical

HIST 100. Renaissance and Reformation (4)
An in depth examination of the cultural, intellectual and artistic forces which shaped Europe from 1300-1600. The first half of the course focuses on Renaissance Italy, the second on the various Reformations: German, Swiss, English, Radical and Catholic.

HIST 101. Tudor and Stuart England (4)
A multi-disciplinary approach to the history of England from 1485-1688 which examines the social, economic, political and religious forces which shaped this brilliant and barbaric era. Focuses on the personalities, noble and base, which have shaped English history. Traces the development of institutions (Crown Parliament, Church) and longtime trends in society and economy, intellectual and cultural history.

HIST 102. The Spanish Empire (4)
Covers the late Middle Ages to the 18th century. An attempt to objectively assess the emergence of the first world empire, its triumphs and tragedies, and its motivations for conquest: glory, greed and God. Social and economic forces will be examined as well as disease, warfare, slavery and statecraft in Spanish possession throughout Europe, the Americas, and Asia.

HIST 103. 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 polarized society of noble and serf.

HIST 105. Ancient Greece (Religious and Classical Studies Dept.) (4)

HIST 106. Ancient Rome (Religious and Classical Studies Dept.) (4)

20th Century Europe

HIST 111. Europe in Turmoil 1900-1945 (4)
Explores the political, social and economic history of Europe in the turbulent years between 1900 and 1945. These years were marked by two world wars, revolutions and genocide. The course looks at the causes of World War I, Europe between the wars and the ordeal of World War II.

HIST 112. History of the Holocaust (4)
Looks at the emergence of Nazism, the role of perpetrators, the attitudes of bystanders and the experiences of the victims. We will also look at the legacies of the Holocaust and how the events are remembered today.

HIST 113. Europe Since 1945 (4)
This course will examine the emergence of Europe out of the rubble, the new postwar order, the split of Europe during the Cold War, and the political, economic and social changes in modern Europe. We will look at the division of Germany, the break-up of European empires and the end of colonialism, the establishment of the European union, and at the students' and the women's movement.

HIST 114. 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, the divided Germanies and reunification.

HIST 115. Modern Russia (4)
This course will center upon the status of Russia as a world power in the late 19th century and its emergence as a super power in the 20th century. Among the questions that will b considered are those pertaining to the modernization of a backward country and the circumstances surrounding the attempt; the coming of the Russian Revolution in 1917 and the proposition of the Bolshevik victors that their answer to Russian and world problems was the only correct answer; the issue of whether or not Soviet history provided validity to the Marxist-Leninist dream for a revolutionary society; and finally, the events and circumstances that led up to the collapse of the Soviet Union that has changed the world.

HIST 116. Soviet Foreign Policy (4)
An examination of the foundations and historical development of Soviet foreign policy from 1917 to the collapse of the Soviet Union. It will attempt to discover how the Soviets came to view the outside world and why; how much changed in the way Soviet Russia sought to relate to the world, and how much did not change over the years.

Early North America

HIST 120. Native American History (4)
Taking an international interdisciplinary approach, this course will examine the history of native peoples of different regions of North America from contact to the present. This course will examine how environmental change, disease, and biological vulnerability interacted with racial ideologies, economic, and social factors to facilitate European conquest. While this course is primarily concerned with the United States, considering the whole of North America will enable students to see the similarities and differences between Indian experiences in a variety of regions.

HIST 121. Colonial America (4)
A study of the settlement of the English colonies in North America and their political, economic, religious, and social development to the mid-18th century.

HIST 122. Revolution and the New Nation (4)
A study of the period from 1763 to the 1790s emphasizing the origins and course of the Revolution, its impact on society, government under the Articles of Confederation, and the writing of and ratification of the Constitution of 1787.

HIST 123. Civil War Era (4)
This course will begin with an analysis of events and factors leading up to the Civil War. It will then analyze in depth the war years covering the development of technology, leadership, military medicine, and the social experience of war for men and women, free and slave. An analysis of the immediate post-war years of Reconstruction will conclude our course.

HIST 124. History of the American West (4)
A study of the causes and consequences of America's westward expansion and settlement Spanish and French beginnings to modern times, with emphasis on the people, the myths, and the technologies that have shaped western development and culture.

United States

HIST 130. 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 the 1990s.

HIST 132. American Immigration (4)
An examination of immigration from 1800 to the 1990s, focusing on the U. S. as a nation of immigrants. Causes of emigration will be considered, with a focus on the European context. The course will also examine the draw of the U. S. as a place of settlement, focusing on the experience, adjustment, and acculturation of American immigrants, especially in California.

HIST 133. Women in United States History (4)
The purpose of this course is to examine the history of women in the United States. Focusing on women's lives as they experienced them, the course will provide students with insight into the day-to-day lives of American women from colonial times to present. It is organized around four key themes: family, work, health, and community, and will consider how women's experiences in these areas changed over time.

HIST 134. African-American History (4)
The course will examine the social, economic, cultural, and political history of African-Americans from the development of slavery in colonial times, Civil War and Reconstruction, the Great Migration to the North and West, through World War II and the civil rights era.

HIST 135. Women in Time and Place (4)
The course will focus on several contemporary "women's issues" which will be examined in historical and international perspective. This course involves an examination of the roles and experiences of women in different cultures and in various historical periods up to the present day.

HIST 136. American Environmental History (4)
Topical survey of historical roots of environmental crises in contemporary North America beginning with western concepts of natural history. Main focus: three centuries of changing American attitudes, policies and activities that lead to the rise of the Conservation Movement by the late nineteenth century. Tensions between users and preservers, and the development of an ecological school of environmentalism since the 1940s.

Asia

HIST 140. 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.

HIST 141. Pre-Modern China to 1840 (4)
The course surveys a general history of pre-modern china, from the founding of her ancient civilization until her final decline (1840) as the world's oldest continuous traditional culture. Students will discover the dynamic basis for a civilized alternative to the western tradition.

HIST 142. Modern Chinese History (4)
A political, social, and cultural history of China from the opium war (1840) to the present day. We will examine selected political, social, cultural issues and institutions which have shaped and influenced Chinese historical development. Time will be devoted to the major historical periods, with emphasis on contemporary China. Students will see that China has been experiencing, in different ways, many similar cultural problems, conflicts and dilemmas throughout her modern times.

HIST 143. 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.

Latin America

HIST 150. Women in Latin America (4)
This interdisciplinary course explores the various roles that women have played throughout Latin America's history, as well as the institutions and ideas that have expanded and limited their options. Through the use of art, literature, and religious forms, it examines cultural attitudes that have affected Latin American women since pre-Columbian times. Topics include: Indian women and the conquest of Latin America, the Virgin Mary in Latin America, and Women and Revolution.

HIST 151. History of Mexico (4)
This course examines the dynamic and often-troubled history of Mexico from the Pre-Columbian era to the present. It includes explorations of the Maya, Aztecs and other pre-Columbian peoples, the era of Spanish colonial rule, the independence period, and the Mexican Revolution. Mexico's struggle to develop a democratic political system and to break away from one-party rule is also examined. Finally, this course considers the continuing role of indigenous peoples and women in Mexico, and it explores the role of the United States in Mexico's development. Latin American History I and II can also satisfy this requirement

HIST 160 The Capstone (Pacific History Seminar) (4)
The Pacific History Seminar is offered annually to all junior or senior history majors as a capstone experience. Focus will depend on professor teaching the course, but will include historiography, archival research techniques, interpretation of primary documents and both written and oral expression of research. Application of skills learned to history and other professions is stressed.

Special Study Courses

These courses can satisfy the major requirement for any upper level course depending on the topic. The section number of each special study course (II – VIII) designates in which category the course can be used as a substitute. Independent study courses and internships should be arranged with professors on an individual basis. Special Topics courses will be announced in the course bulletin for each semester.

HIST 187. Internship (Experiential Learning Opportunity) (This may not be substituted for an upper level course) (4)

HIST 191. Independent Study (Reading Tutorial or Research Tutorial – Experiential Learning Opportunity (4)

HIST 93, 193. Special Topics (Lecture Course or Research Seminar - ELO) (4)

Jacoby Center for Public Service and Civic Leadership

Director: Robert Bendetti

Department Phone: (209) 946-7444

Website: www3.pacific.edu/cop/jacobycenter

The Harold S. Jacoby Center for Public Service and Civic Leadership encourages students to engage in civic life and leadership development through varying curricular and co-curricular options including opportunities for learning which introduce students to urban life and public issues through community service.

Jacoby Center cooperates with the Governmental Affairs Program of the Mcgeorge School of Law and the Washington Center in Washington, DC, to provide off-campus semester long study and experiential learning opportunities for Pacific undergraduates. Minor programs in the Helping Professions and Public Affairs are also offered through the Center.

The Helping Professions Minor exposes students to interdisciplinary knowledge, theory and practice related to the full range of health, social and education services for individuals and their families. The minor enables students to explore career interests in one of the contributing professions and the collaboration and connections between that profession and other helping professions. Jacoby Center is particularly committed to nonprofit and governmental organizations, and most health, social and education services are provided through governmental and/or nonprofit agencies.

The Center also offers a minor in Public Affairs which enables students to integrate studies in public issues with disciplinary study in a variety of majors. This cross-disciplinary minor is designed to prepare students for advanced study and professional careers in fields such as government and public policy, education, social work, planning, and non-profit organization.

Students in both minor programs are encouraged to participate in the Sacramento Experience and Washington Center internship and study programs. Students make application to these unique study opportunities through the Jacoby Center to study and intern for a full semester either in Sacramento or Washington, D.C. Through these and other programs Jacoby Center provides numerous options for involvement in policy level activities with government, non-profit, and cultural organization at all levels.

Helping Professions Minor

Students enroll in Introduction to the Helping Professions (JCTR 75), the Service Learning Practicum (JCTR 87), and additional electives to total 20 units to complete the Helping Professions Minor. Courses must be chosen in consultation with the student minor adviser who will be assigned by the Pre-Health Science Adviser. There may be no more than two courses taken from each department. Students electing a major in one of the contributing programs may count up to 8 units from the appropriate minor courses listed above toward their major requirements. Additionally, the Service Learning Practicum provides an exploratory opportunity for the general student to gain familiarity with urban life and community issues through direct involvement and may be repeated for credit.

Introduction to the field (required):

JCTR 75	Introduction to the Helping Professions
JCTR 87a/b	Service Learning Practicum

Electives (to total 14-16 units):

SPED 123	The Exceptional Child
SPED 166	Building Family-Professional Partnerships
EPSY 121X	Learner-Centered Concerns
SLPA 51	Introduction to Speech-Language Pathology
SLPA 127	Audiology
ENGR 11	Technology and Society
MTHR 11	Introduction to Creative Art Therapy
MTHR 18	Basic Skills in Music Education for Special Education
SPTS 153	Adapted Physical Education
SPTS 155	Motor Learning
SOCI 61	Urban Society

SOCI 81	Introduction to Social Services
SOCI 125	Health and Illness
SOCI 181	Delivery of Social Services
PSYC 53	Behavior Change I
PSYC 111	Abnormal Psychology
PSYC 154	Child Mental Health
PSYC 155	Marital and Family Therapy
PSYC 156	Behavioral Medicine/Health
PSYC 133	Adulthood and Aging
RELI 145	Biomedical Ethics

Public Affairs Minor

Students complete six courses (24 units) to complete the Public Affairs Minor. Up to 8 units may be transferred from other institutions. Students may count the research methods course and one additional course toward major requirements as well as the minor. Students pursuing the minor must be aware that some courses may have prerequisites. With planning, prerequisites can usually be met through general education or the major. Internship and Independent Research options (JCTR 187, 197) meet University experiential learning goals. With permission of the Director, students may substitute appropriate departmental upper division elective, internship/fieldwork, independent study, or research courses for the relevant minor options shown above.

Introduction to the field (two from the following):

SOCI 61	Urban Society
POLS 104	Urban Government
POLS 106	California Government and Politics

Methods (one from the following):

COMM 160	Communication Research Methods
POLS 133	Quantitative Methods
SOCI 171	Social Research Methods
SPTS 179	Introduction to Research
ECON 161	Computer Applications in Economics
ECON 190	Econometrics

Electives (two from the following):

SPTS 141	Sport in America
ETHN 164	Ghetto Life
COMM 143	Intercultural Communication
SOCI 181	Delivery of Social Services
ECON 131	Public Finance
ECON 151	Urban Economics
ECON 193	Economics of Sin

Experiential/Independent Learning (one from the following):

JCTR 187	Community Affairs Internship
JCTR 191	Independent Study
JCTR 197	Community Independent Research

The experiential/independent learning options (JCTR 87, 187, 191, 197) are available to any qualified student and may be repeated for credit. They need not be taken only to complete minor requirements. Jacoby Center also sponsors periodic Special Topics study options depending on current Center service or research projects which may also meet Helping Professions or Public Affairs minor requirements. Although not required for students who seek to participate, these minors provide excellent preparation for the Sacramento Experience and/or Washington Center programs. Students are encouraged to apply to these programs and may substitute the internships and seminars in these programs for elective and experiential learning requirements in the minors.

Sacramento Experience

Students apply to this program and upon acceptance enroll in a combination of JCTR 187 and 191 depending on the internship assignment and advising by the Jacoby Center Executive Director. Students ordinarily combine study and internship activities in Sacramento with other courses on the Stockton campus.

Washington Center

Students work with a faculty adviser in Jacoby Center to submit an application to the Washington Center in Washington, D.C. Upon acceptance to this full semester, off campus study program they enroll in

WASH 185	Washington Center Seminar
WASH 187	Washington Center Internship
JCTR 185	Community Affairs Internship

Jacoby Center is located in room 242, Wendell Phillips Center.

Course Offerings

JCTR 75. Introduction to the Helping Professions (2)

This course familiarizes undergraduate students with the fields providing health and education services to individuals and their families. Students will be introduced to various career options through panel presentations, discussions, and case studies focusing on prevention, assessment and treatment issues. Faculty from several departments including Adapted Physical Education, Education, Music Therapy, Speech-Language Pathology, Special Education, Counseling Psychology, Physical Therapy, Pharmacy, and Psychology will present information on their respective professions during the course of the semester. Other related fields such as Occupational Therapy and Social Work will be integrated into the course design.

JCTR 87a,b. Service Learning Practicum (2-4)

A service learning community exploration experience for students who want to work with at risk youth and/or other high need groups through direct involvement. Students receive training from Pacific staff and community based organizations in methods common to the helping professions, and work on-site in schools and other community settings. The course explores how the helping professions respond to human development needs and other social issues at the community level.

JCTR 93, 193. Special Topics (1-4)

JCTR 187a,b. Community Affairs Internship (2-4)

Community Affairs Internship provides the opportunity for supervised observation and experience in community settings, including public agencies, non profit or voluntary organizations, or businesses. Field sites may be local or away from campus. Eligibility to enroll presupposes familiarity with issues and problems in the field in which one is to work, demonstrated by acceptable work in one or more related campus courses.

JCTR 191. Independent Study (2-4)

Open to student with C average in major field with consent of instructor.

JCTR 197a,b. Community Independent Research (1-4)

An opportunity for appropriately prepared students to carry out community based research which meets the university experiential learning requirement, and which contributes to a body of knowledge suitable for presentation to professional academic or community audiences. Methods used may include observation, surveys, interviews, document analysis, experimentation, or other methods common to the social or behavior sciences.

Mathematics

Professors: D. Christianson (Chair), Whittington, Zimmermann

Associate Professors: Merz, Parker

Assistant Professors: Bhattacharyya, Goff, Langley, Beltukov

Lecturers: Rosasco, Wu, Krepak

Department Phone: (209) 946-2347

Website: www1.pacific.edu/cop/math

The Mathematics Department shares the University mission of providing a superior, student-centered education. Education in mathematics assists students in developing, to their fullest potential, their mathematical reasoning, communication and problem solving skills. Students who choose to major in mathematics will be provided opportunities to develop strong problem solving skills using quantitative methods and appropriate technology. They will understand the strengths, limitations and wide applicability of mathematical modeling in a variety of disciplines. Students will develop an appreciation for the discipline and esthetics of mathematics, effectiveness in problem solving, and an appropriate understanding of theory. Graduates who major in mathematics will be prepared for the many careers in which mathematics plays an important role, for further study in Mathematics at the graduate level, or for careers in teaching mathematics.

Degrees in Mathematics

The Bachelor of Arts in Mathematics, the Bachelor of Science in Mathematics and the Bachelor of Science in Applied Mathematics are the degrees that are offered. Minors in Mathematics, Applied Mathematics, and Statistics are also offered.

Students preparing for careers in mathematics, mathematics teaching, or for graduate study in mathematics should elect the Bachelor of Science degree. Students interested in applied areas or majoring in a discipline which uses mathematics should elect the Bachelor of Science in Applied Mathematics. Students interested in mathematics primarily as a component of a liberal education or as a second major may elect the Bachelor of Arts degree. Minors in Mathematics, Applied Mathematics and Statistics are available to students who wish to add this component to their college experience. Students who choose to double major or minor in mathematics or who choose to study mathematics as part of their liberal arts education will learn the major methods, applicability, and spirit of the mathematical sciences.

The Department of Mathematics also provides courses offering opportunities for students from other disciplines and professional programs to develop the quantitative skills necessary for success in their chosen field.

Preparation for Studying Mathematics

Since many degree programs within the University require courses in mathematics, students are encouraged to complete four years of high school mathematics. In general this would include two years of algebra, a year of geometry and a year of Math Analysis that includes Trigonometry. Four years of IMP or CPM mathematics are usually equivalent to these traditional courses. Students with Advanced Placement AB credit start college mathematics in Calculus II while students with AP BC credit start in Calculus III. AP credit in Statistics is equivalent to MATH 35 and is accepted as meeting a beginning course in Statistics in most majors. Students may not repeat a course for which they have AP credit unless they have a score of 3 and petition for a repetition thru the Courses and Standards Committee.

All students are tested for quantitative skills during student orientation sessions. A quantitative basic skills requirement is part of the general education program and requires passing an Intermediate Algebra or higher level test during orientation or completing a college level Statistics or College Algebra course. In order to enroll in mathematics department courses numbered 33, 35, 41, 45, 51, 53, or 161, students must take and pass a mathematics placement examination appropriate to the course prerequisite. Some courses in Economics, Chemistry, Physics, Computer Science, Psychology, the Educational Resource Center and Political Science also have mathematics placement requirements. Students will choose the test level to be taken in consultation with their faculty adviser. All freshmen are tested. These tests include placement tests in Calculus for students who have had Calculus but do not have AP credit or do not know their AP score. The Calculus test is for placement only and does not award credits. Subject material for the examinations and sample questions are available at the Educational Resource Center website.

For students needing additional preparation before entering introductory college mathematics courses, the Mathematics Lab of the Educational Resource Center in the Benerd School of Education offers developmental skill courses in the areas of basic mathematics, algebra and Trigonometry.

Preparation for the Major

The first course in all Mathematics majors is Calculus I, II or III depending on the student's high school preparation in mathematics. Majors with AP A/B credit should start in Calculus II. Majors with AP B/C credit should start in Calculus III. Students who are not able to start in Calculus I because of deficiencies in their algebra or Trig skills will start in MATH 41, Precalculus. Students who place lower than MATH 41 should discuss with their adviser how much extra time will be required to complete their degree program because of the required developmental work. Mathematics majors should be proficient with graphing calculators and should consider taking elective courses that use quantitative skills in areas such as business, economics, computer science, science and engineering.

Typical First-year Program B.A or B.S. in Mathematics

Fall:	MATH 51,53 or 55 (Calculus I, II or III) depending on placement and AP credit
	MENT 1- Mentor Seminar I
	General Education (two courses)
Spring:	MATH 53 or 55 or first elective mathematics course
	MENT 2- Mentor Seminar II
	General Education (two courses)

Academic Requirements–Bachelor of Arts in Mathematics

This degree provides a major in mathematics as a component of a liberal education or as a second major. Requirements: (10 courses, minimum 36 units)

Core Curriculum (7 courses)

MATH 51,53,55 Calculus I, II, III (12 units)

AP credits may be accepted for MATH 51 (AB test) and

MATH 53	(BC test) as part of the major
MATH 49	Introduction to Abstract Mathematics (4 units)

MATH 131

or

MATH 37/39	Probability/Statistics (4 units)
MATH 141	Linear Algebra or
MATH 145	Applied Linear Algebra (4 units)
MATH 143	Abstract Algebra I or
MATH 155	Real Analysis I

Electives (3 courses, minimum 3 units each course)

Electives must be approved by a mathematics adviser.

Bachelor of Science Mathematics

This degree prepares students for careers as mathematicians, applied mathematicians, or mathematics teachers or for graduate study in mathematics or a mathematical science. Mathematics majors are encouraged to minor or take courses in other Departments or Schools which use mathematics such as: Computer Science, Engineering, Business, Physics, Chemistry, Biology or Economics.

(13 courses, 47-51 units.)

Core Curriculum (7 courses –28 units)

MATH 51,53,55 Calculus I, II, III (12 units)

AP credits may be accepted for MATH 51 (AB test) and Math 53 (BC test) as part of the major.

MATH 49 Intro to Abstract Math (4 units)
MATH 141 Linear Algebra (4 units)
MATH 143 Abstract Algebra I (4 units)
MATH 155 Real Analysis I (4 units)

Electives (6 courses, minimum of 3 units each course)

Electives should be selected in consultation with a faculty adviser. Students must take at least three 100 level courses excluding MATH 161, 162 and 166.

Mathematics Teaching Credential

Students pursuing a California mathematics or foundational-level mathematics single-subject teaching credential may elect either the B.A. or B.S. program. In addition to earning a degree, students must show subject matter competency by passing the CSET (California Subject Exams for Teachers) in mathematics. Contact the Mathematics Credential Coordinator, Dr. Dennis Parker, for additional credential requirements. Below are the recommended coursework options for the B.A. and the B.S.

1. B.A. for Single Subject Math with CSET (California Subject Exams for Teachers)

Core:

MATH 51, 53, 55

MATH 49

MATH 141

MATH 37, 39, or 131

MATH 143

Recommended Electives:

MATH 164

MATH 166

MATH 168

2. B.S. for Single Subject Math with CSET

Core:

MATH 51, 53, 55

MATH 49

MATH 141

MATH 143

MATH 155

Recommended Electives:

MATH 72

MATH 74

MATH 131

MATH 164

MATH 166

MATH 168

Students who do not major in mathematics, but wish to earn a California mathematics or foundational-level mathematics teaching credential, may consider earning a minor in mathematics to help prepare them for the CSET exams. Below are minor coursework options recommended for mathematics teacher preparation.

MATH 51
MATH 53
MATH 49
MATH 37
MATH 141
MATH 166
MATH 168

Pre-professional Education Courses for Single Subject Mathematics or Foundational-Level Mathematics:

Pass CBEST exam (by Sophomore year)*

CURR 134x	Educational Computing (Freshman)	2 units
CURR 105x	Introduction to Education (Sophomore)	3
CURR 121x	Learner-Centered Concerns (Sophomore)	3
CURR 130x	Teaching and Assessment (Junior)	3
CURR 137x	Teaching English Learners (Junior)	2

Professional Education Courses (must apply for admission):

CURR 175	Reading/Language Arts Development	4 (Fall of Senior year)
CURR 179	Teaching in the Content Areas	4 (Fall of Senior year)
CURR 178	Directed Teaching	10 (Spring of Senior year or in fifth year)
CURR 195Bx	Seminar: Directed Teaching	2 (taken with CURR 178)
SPED 125x	Teaching Exceptional Learners	2 (taken with CURR 178)

*Recommended for first-year transfer students.

Bachelor of Science in Applied Mathematics

This degree is recommended for students interested in mathematics and its applications in the physical sciences, engineering, economics, management science, statistics or operations research or for students in applied fields who would like to add a second major in mathematics. 13 courses, 46-52 units.

Core (5 courses, 20 units)

MATH 51,53,55 Calculus I, II, III (12 units)

AP credits may be accepted for Math 51 (AB test) and MATH 53 (BC test) as part of the major

MATH 57 Applied Differential Equations I (4 units) or
MATH 49 Introduction to Abstract Mathematics
MATH 145 Applied Linear Algebra (4 units)

Electives (4 courses 14-16 units, minimum of 3 units, each course)

With the consultation of a major adviser, the student will select 4 electives chosen from the following:

MATH 39 Probability with Applications to Statistics
MATH 72 Operations Research or
MATH 74 Discrete and Combinatorial Mathematics
MATH 110 Numerical Analysis
MATH 130 Topics in Applied Statistics
MATH 131 Probability and Mathematical Statistics I
MATH 132 Probability and Mathematical Statistics II
MATH 152 Applied Analysis
MATH 157 Applied Differential Equations II
MATH 174 Graph Theory
MATH 193 Special Topics (subject to the approval of the adviser)

Only one elective may be chosen from the following experiences: Independent Study, Undergraduate Research, Internship, or Practicum offered through the Mathematics Department, subject to approval by adviser.

Mathematical Sciences: Four courses (12-16 units)

Choose either A or B

A. Four mathematically oriented courses from one or several of the mathematical sciences (e.g. Physics, Chemistry, Engineering, Computer Science, Economics, Management Sciences or other fields), chosen from a list of approved courses available in the mathematics department. In most cases, this requirement would be fulfilled by courses required for the degree programs mentioned, with suitable electives.

B. Three Mathematically oriented courses from one of the several mathematical sciences, as described in (A), plus one free mathematics elective, chosen with the consent of the adviser from mathematics courses 49 or higher with the exception of 161,162, 166, 197.

Cross-Disciplinary or Self-Designed Major

Students may design a cross-disciplinary or self-designed major with the assistance of a mathematics adviser. Some possible combinations are Mathematics/Physics or Mathematics/Economics. These programs require approval of the Dean of the College.

Minors

The study of mathematics is a process that develops important modes of critical thinking. Because quantitative problem solving is a desirable skill, a minor in mathematics can be a beneficial addition to the program of any student at Pacific irrespective of his/her major. Mathematics minors may also benefit students planning on further graduate education in related areas. Minors in mathematics are designed to offer a measure of breadth and some depth in the student's mathematical experience. Only courses passed with a C- or better grade can be used to meet the minor requirements. A minimum of 12 of the minor units must be completed at Pacific. Students planning to minor in mathematics should contact the chair of the Mathematics Department to be assigned a minor adviser.

Mathematics Minor Requirements:

Analysis: MATH 51 and 53 (8 units) AP credits may be accepted for MATH 51(AB test) and MATH 53 (BC test) as part of the minor.

Algebra/Logic: MATH 49 and MATH 141 (8 units)

Electives: Students with the approval of their minor adviser select two additional courses. One from MATH 37,39, 55, 57, 72, 74 and one from MATH 131, 143, 152, 154, 155, 164, 168, 174 for a total of 8 units.

Statistics Minor Requirements:

Analysis: MATH 51 and 53 (8 units) AP credits may be accepted for MATH 51(AB test) and MATH 53 (BC test) as part of the minor.

Statistics: (11 units)Three courses: MATH 35 or 37, MATH 130, MATH 131

Electives: Students with the approval of their minor adviser select two additional courses relevant to statistics (at least 3 units each) For example: MATH 132, Probability and Statistics II, MATH 141 or 145, Linear Algebra, a Statistical Consulting Practicum or course in another department that uses statistical techniques such as ECON 190, Econometrics.

Applied Mathematics Minor Requirements

Analysis: MATH 51 and 53 (8 units) AP credits may be accepted for MATH 51 (AB test) and MATH 53 (BC test) as part of the minor.

Algebra: MATH 145 (4 units)

Statistics: MATH 37 or MATH 39 or MATH 131 (4 units)

Discrete Mathematics: MATH 74 or MATH 174 (4 units)

Electives: Students with the approval of their minor adviser select two additional applied mathematics courses for a total of 7-8 units.

Course Offerings

Only courses passed with a grade of "C-" or better meet prerequisite requirements for all Mathematics Department courses.

MATH 33. Elements of Calculus (4)
Polynomial, rational, exponential and logarithmic functions. Differentiation. Integration. Maxima/minima of functions of several variables. Elementary differential equations. Applications to natural sciences, social sciences and other fields. Credit will not be given for this course if a student has received credit for MATH 51 or AP credit in Calculus. *Prerequisites: two years of high school algebra and an appropriate score on either the Intermediate Algebra placement test or the Pre-Calculus placement test; or MATH 5 or 41.*

MATH 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, 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 MATH 37 or has AP credit in Statistics. *Prerequisite: MATH 3, 5, or 41, or an appropriate score on either the Elementary Algebra placement test, the Intermediate Algebra Placement test, or the Pre-calculus placement test or permission of the instructor.*

MATH 37. Introduction to Statistics and Probability (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. The course is not recommended for first semester freshmen. Credit will not be given for this course if a student has received credit for MATH 35 or has AP credit in Statistics. *Prerequisite: MATH 33, 41, 45, 51, 53 or appropriate score on the calculus placement test.*

MATH 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 (e.g., 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. *Credit will not be given for both Math 39 and Math 131. Prerequisite: MATH 53.*

MATH 41. Pre-calculus (4)
The algebraic and trigonometric concepts which are necessary preparation for Calculus I. Topics include the real number system, algebraic, trigonometric, exponential and logarithmic functions. Emphasis is on the function concept; graphing functions; solving equations, inequalities and linear systems; and applied problems. Credit for this course will not be given if a student has AP Calculus credit. *Prerequisites: MATH 5 or an appropriate score on either the Intermediate Algebra placement test, the Pre-calculus placement test or the calculus placement test.*

MATH 45. Introduction to Finite Mathematics and Calculus (4)
Systems of equations. Elements of matrix algebra. Elementary linear programming. Introduction to calculus. Applications to problems in economics, management and other fields. *Prerequisites: two years of high school algebra and an appropriate score on either the Intermediate Algebra placement test, the Pre-calculus placement test, or the calculus placement test; or MATH 5 or 41.*

MATH 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: MATH 53 or permission of the instructor.*

MATH 51. Calculus I (4)
Differential calculus of algebraic and elementary transcendental functions. Anti-derivatives, introductory definite integrals, and the Fundamental Theory of Calculus. Applications, including the first and second derivative tests and optimization. Students earning AP A/B Calculus credit will not receive credit for MATH 51. *Prerequisites: MATH 7 or 41 or four years of high school mathe-*

matics including Trigonometry and an appropriate score on the placement test for calculus.

MATH 53. Calculus II (4)
Techniques and applications of integration. Sequences and series. Convergence of series. Taylor Polynomials. *Students earning AP B/C Calculus credit will not receive credit for MATH 53. Prerequisite: MATH 51 or an appropriate score on the calculus placement test.*

MATH 55. Calculus III (4)
An introduction to multivariable calculus. Topics covered include vector geometry of the plane and Euclidean 3-space; differential calculus of real-valued functions of several variables, including partial derivatives, gradient, max-min theory, quadric surfaces, multiple integrals. *Prerequisite: MATH 53 or AP B/C credit.*

MATH 57. Applied Differential Equations I:ODES (4)
Ordinary differential equations, first-order equations, separable and linear equations. Direction fields. Second order linear equations with constant coefficients. Method of undetermined coefficients. Laplace Transforms. Unit impulse response and convolutions. Homogeneous systems of first order linear equations. Matrix algebra determinants, eigenvalues, eigenvectors. Existence and uniqueness theorems. Use of calculators or computers to display solutions. Applications. *Prerequisite: MATH 55 or permission of the instructor.*

MATH 72. 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: MATH 33 or 45 or 51 or the appropriate score on the calculus placement test.*

MATH 74. Discrete and Combinatorial Mathematics (4)
The fundamental principles of discrete and combinatorial mathematics. Topics include the fundamental principles of counting, the Binomial Theorem, generating functions, recurrence relations and introductory graph theory, including trees and connectivity. *Prerequisite: MATH 33 or 45 or 51, or an appropriate score on the calculus placement test.*

MATH 89a, 189a. Statistical Consulting Practicum (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 enrolled in MATH 189a will ordinarily participate in more sophisticated projects and take a more responsible role than students in MATH 89a. Pass/No credit. *Prerequisites: for MATH 89a, MATH 130 or permission of the instructor; for MATH 189a, 89a and permission of the instructor.*

MATH 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. *Prerequisite: MATH 55.*

MATH 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 non-parametric methods, time series analysis, discriminant analysis, factor analysis, depending upon student interest. Extensive use of packaged computer programs. *Prerequisite: MATH 35 or 37.*

MATH 131. Probability and Mathematical Statistics I (4)
Counting techniques; discrete and continuous random variables; distribution functions; special probability densities such as Binomial, Hpergeometric, Geometric, Negative Binomial, Poisson, Uniform, Gamma, Exponential, Weibull, and Normal; joint distributions; marginal and conditional distributions; mathematical expectations, moment generating functions; functions of random variables; sampling distribution of the mean; Central Limit Theorem. Credit will not be given for both MATH 39 and MATH 131. *Prerequisite: MATH 53.*

MATH 132. Probability and Mathematical Statistics II (4)
Sampling distributions such as Chi-square, t and F; estimation methods such as methods of moments, maximum likelihood, least squares; properties of estimators such as unbiasedness, consistency, sufficiency; tests of hypothesis concerning means, difference between means, variances, proportions; one and two-way analysis of variance. *Prerequisite: MATH 131.*

MATH 141. Linear Algebra (4)
This is a first course in linear algebra emphasizing theory and proof. Topics covered include systems of linear equations, vector spaces, subspaces, linear independence, bases, dimension, linear transformations, matrices, determinants, eigenvalues, and eigenvectors. Computational techniques will be included. *Prerequisite: MATH 49.*

MATH 143. Abstract Algebra I (4)
An introduction to groups, rings and fields, with an emphasis on number theory and group theory: including, finite groups, permutation groups, cyclic groups, factor groups, homomorphisms, and the isomorphic theorem. The course concludes with an introduction to polynomial rings. *Prerequisite: MATH 49 or permission of instructor.*

MATH 144. Abstract Algebra II (4)
This course is a continuation of MATH 143; it emphasizes field theory and the application of groups to geometry and field extensions. Algebraic and separable field extensions, dimension, splitting fields, Galois theory, solvability by radicals, geometric constructions. *Prerequisite: MATH 143 or permission of instructor.*

MATH 145. Applied Linear Algebra (4)
Matrix algebra. Systems of linear equations. Euclidean spaces and subspaces. Bases and dimension. Determinants. Linear transformations, coordinates and coordinate transformations. Eigenvalues and eigenvectors. Diagonalization. Symmetric, orthogonal and other special matrices. Linear models and applications from the physical sciences, economics and other fields. Use of calculators or computer software. *Prerequisite: MATH 53.*

MATH 148. Cryptography (3)
A survey of cryptography and cryptanalysis from historical cryptosystems through the modern use of cryptology in computing. Topics include public and symmetric key cryptosystems, digital signatures, modular arithmetic and other topics in number theory and algebra. Possible additional topics include error correcting codes, digital cash, and secret sharing techniques. *Prerequisites: MATH 53 or permission of the instructor.*

MATH 152. Applied Analysis (4)
Vector fields. Gradient, divergence and curl. Line and surface integrals. Cylindrical and spherical coordinates. Integral Theorems. Algebra of complex numbers. The complex plane. Euler's Formula. Functions of a complex variable. Analytic functions. Contour integrals. Cauchy Integral Theorem. Applications from physics and engineering. *Prerequisite: MATH 55.*

MATH 154. Topology (4)
An introduction to general topology and its relation to manifold theory. Topics include metric spaces, general spaces, continuous functions, homeomorphisms, the separation axioms, connectedness, compactness, and product spaces. *Prerequisite: MATH 49.*

MATH 155. Real Analysis I (4)
Properties of the real numbers. Sequences and series of real numbers. Limits, continuity and differentiability of real functions. *Prerequisites: MATH 49 and 55.*

MATH 156. Real Analysis II (4)
Integration, series of real numbers, sequences and series of functions, and other topics in analysis. *Prerequisite: MATH 155.*

MATH 157. Applied Differential Equations II: PDES (4)
Partial differential equations. Derivation and solutions of the Wave, Heat and Potential equations in two and three dimensions. Fourier series methods, Bessel functions and Legendre polynomials. Orthogonal functions. Additional topics may include Fourier integral transform methods, the Fast Fourier Transform and Sturm-Liouville theory. Computer exercises using MATLAB. *Prerequisite: MATH 57.*

MATH 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: MATH 3 or 5 or 41 or 35 or 51 or 53, or appropriate score on the algebra placement tests. Not open to freshman. This course does not count as an elective for a B.S. degree.*

MATH 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: MATH 161, or permission of the instructor.*

MATH 164. Topics in the History of Mathematics (3)
Topics in mathematics will be studied from a historical perspective. Topics will be chosen from: numeration systems; mathematics of the ancient world, especially Greece; Chinese, Hindu and Arabic mathematics; the development of analytic geometry and calculus; and modern axiomatic mathematics. Students will solve problems using historical and modern methods. Students will read and report on the biography of a mathematician. *Prerequisites: MATH 53 and junior standing or permission of the instructor.*

MATH 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: MATH 53. This course counts as an elective for a B.S. degree only for single subject credential candidates.*

MATH 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 and computer packages used to reinforce understanding of the concepts. Required for high school teacher candidates. *Prerequisite: MATH 49 or permission of the instructor.*

MATH 174. Graph Theory (4)
An in-depth consideration of discrete structures and their applications. Topics include connectivity, Eulerian and Hamiltonian paths, circuits, trees, Ramsey theory, digraphs and tournaments, planarity, graph coloring, and matching and covering problems. Applications of graph theory to fields such as computer science, engineering, mathematics, operations research, social sciences, and biology are considered. *Prerequisites: MATH 51 or 74 or COMP 47 or an appropriate score on the calculus placement test.*

MATH 93. Special Topics (3 or 4 units)

MATH 191. Independent Study (2-4 units)
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.

MATH 193. Special Topics (3-4 units)

MATH 197. Undergraduate Research in Mathematics (2-4 units)

Modern Language and Literature

Professors: Giraldez, Sharp, Golsan (Chair)

Associate Professors: Giraldez, Lu

Assistant Professors: Cipris, Ippolito

Instructors: Savelieva

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The Department of Modern Language and Literature offers language, literature and cultural history courses in Chinese, French, German, Japanese and Spanish, as well as in Portuguese on demand. Programs are offered leading to a major or minor in French, German, Japanese or Spanish language and literature and a minor in Chinese. Cross-disciplinary degree programs with the Department of Economics, the School of International Studies, the School of Engineering and the Eberhardt School of Business are also offered. Some literature, civilization, film and interdisciplinary courses are taught in English translation.

Classes, particularly at the intermediate and upper-division level, are small and provide opportunity for a great deal of individualized attention.

The University has chapters of three national honor societies for outstanding work in a language, literature and culture: Pi Delta Phi for French; Delta Phi Alpha for German; and Sigma Delta Pi for Spanish. The Jan Good Award is presented to winners of an annually posted essay contest in French or Spanish. The MLL Annual Awards night celebrates achievement in all languages.

Academic Requirements

The list below which deals with degree requirements illustrates the portion of a student's program which is devoted to the courses needed to complete the major, as compared with the portion devoted to non-major course work (i.e., general education and electives). Since some courses required by the major may "double-count" as general education courses, the actual number of G.E. courses taken outside the major may be less than the 12 required for College of the Pacific students. The flexibility gained by this "double-counting" is reflected in a slight increase in electives. The section below already reflects any adjustments. Please refer to the separate University general education program sheet for specific details regarding G.E.

College of the Pacific Language Requirement

In order to promote an appreciation of diverse cultures and to encourage greater understanding of the English language, the College of the Pacific requires one year of college instruction or equivalent training in a language other than English for all students seeking a Bachelor of Arts (B.A.) degree. Students who transfer to University of the Pacific with sophomore standing or above, or who seek a Bachelor of Science (B.S.) degree or a Bachelor of Fine Arts (B.F.A.) degree, are exempt from this requirement, but are encouraged to cultivate their language skills.

This requirement can be met entirely, or in part, by completing coursework at the College, at approved colleges and universities, or by a placement test in the languages offered in the department. A placement test may be taken only once. To fulfill the requirement by completing coursework, a grade of C- or better must be

obtained in the second semester (11b) course. Courses taken to fulfill the requirement must be taken for a letter grade. In addition to modern and ancient written languages, students may elect to complete the requirement in American Sign Language. Computer languages cannot be substituted for the requirement. Individual departments may choose to increase, but not to decrease, the level of proficiency required.

While the University makes every effort to meet student interests and needs, it does not guarantee that every student will be able to fulfill this requirement by studying their first choice of language. The University also does not guarantee that students studying languages other than those offered through the Pacific Department of Modern Language and Literature will have access to the courses needed to complete the requirement. In some cases, a student taking language courses not offered by the Department of Modern Language and Literature may also need to pass an approved competency examination in addition to their course work. As with all subjects, students must get prior approval before taking course work outside of the University that they intend to use toward completion of their Pacific degree.

Course Offerings by Language

Beginning and intermediate level courses in any of the Modern Languages are specifically designed for the language-learner to develop proficiency in that language. Therefore, these courses are not open to native speakers of that language. Final determination of placement in these courses will be made by the instructor. A student may not remain in a course if the instructor has determined that the level is not appropriate.

Chinese

11a	First-Year Chinese
11b	First-Year Chinese
23	Intermediate Chinese, 3rd semester
25	Intermediate Chinese, 4th semester
120	Asian Cinemas
HIST 141	Pre-Modern China to 1800
HIST 142	Modern Chinese History
191	Independent Study
193	Special Topics

French

11a	First-Year French
11b	First-Year French
23	Intermediate French, 3rd semester
25	Intermediate French, 4th semester
51	French Literature in English
93	Special Topics
107	Introduction to French of Business & Economics
110	Grammaire, Composition et Stylistiques
112	Civilisation Française A
114	Civilisation Française B
116	Littérature Française A
118	Littérature Française B
120	Le Cinema Français/ French Cinema
122	La Francophonie
124	Individu et Société
126	Penseurs et Philosophes
128	Images et Voix de Femmes
191	Etudes Indépendantes
193	Etudes Spécialisées

German

11a	First-Year German
11b	First-Year German
23	Intermediate German, 3rd semester
25	Intermediate German, 4th semester
93	Special Topics
106	German Culture & Society II
111	Spoken and Written German
124	German Writers of the Nineteenth Century
128	German Poetry
132	Goethe & Schiller
134	Modern German Prose
136	Modern German Drama
191	Independent Study
193	Special Topics

Japanese

11a	First-Year Japanese
11b	First-Year Japanese
23	Intermediate Japanese, 3rd semester
25	Intermediate Japanese, 4th semester
125	Advanced Japanese I
126	Advanced Japanese II
140	Modern Business Japanese
170	Japanese Literature in Translation
172	Japanese Culture and Civilization
180	Modern Japanese Fiction
191	Independent Study
193	Special Topics

Portuguese

PORT 124	Intensive Portuguese
PORT 126	Reading and Discussion on Luso-Brazilian Culture
PORT 191	Independent Study

Russian

11a	First-Year Russian, 1st semester
11b	First-Year Russian, 2nd semester
23	Intermediate Russian, 3rd semester
25	Intermediate Russian, 4th semester
73	Russian Culture and Civilization (Spring)
120	Contemporary Russian Film
191	Independent Study
193	Special Topics (usually a literature course, or film course such as 19th Century Russian Literature, 20th Century Russian Literature, Tolstoy or Dostoevsky, contemporary Russian Film)

Spanish

11a	First-Year Spanish 1st semester
11b	First-Year Spanish 2nd semester
21a	Spanish for Spanish Speakers 1
21b	Spanish for Spanish Speakers 2
23	Intermediate Spanish, 3rd semester
25	Intermediate Spanish, 4th semester
27	Conversación
93	Special Topics
101	Composición Avanzada
103	Introducción a la literatura hispánica
110	Civilización hispanoamericana
112	Civilización española
120	Narrativa hispánica
122	Literatura mexicana
124	Escritores hispanos en los Estados Unidos
126	Poesía hispánica
128	Teatro hispánico
133	Don Quijote
135	Literatura hispánica del siglo XX
140	Traducción
141	Sintaxis, semántica, morfología
143	Fonética y fonología
191	Independent Study
193	Special Topics

Descriptions of Major Programs

The major requirements for all three majors and self-designed majors within the Modern Language and Literature Department have been designed so that students with no prior training or those with advanced training are equally well served. The major requirements which are listed separately under each language are the requirements which begin after the student has acquired a strong intermediate proficiency in the language and culture. Thus the primary requirement of any major is the acquisition of

the equivalent of four college semesters of a particular language.

The number of advanced courses which constitutes the major is kept intentionally moderate so that a student has the opportunity to begin a language in college. Similarly an advanced student will be strongly encouraged to do coursework beyond the minimum courses. The extra coursework that students will need for the acquisition of language skills before they can begin the major will increase the number of major courses which form the total degree, while reducing the number of University electives.

Students majoring or minoring in a language who study abroad for one semester may count up to 8 units of appropriate courses from an approved program toward the major or minor. Majors studying two or more semesters abroad may count up to 12 units of appropriate coursework. Students may petition the department to count additional units from abroad. These petitions will be considered on a case-by-case basis. All majors and minors must enroll in at least one advanced course in the target language upon return to meet the major or minor requirements. Only one on-line course may be counted toward major requirements.

All majors are required to maintain a portfolio of their work and participate in the exit evaluation in their final semester.

Requirements for the Major

French

The curriculum in French includes beginning video-based language classes, intermediate courses focusing on culture and language, advanced language and composition courses, surveys of literature and civilization, theme-based advanced courses covering French and Francophone literatures and cinema, and other more specialized courses, such as the French of Business and Economics. All courses in French unless otherwise specified.

The B.A. in French has two tracks, 1) the Language and Literature track which requires completion of six French courses above the intermediate level, providing background in French civilization, French and Francophone literatures and/or film; and 2) the French Studies track which requires five French courses beyond the intermediate level plus three approved related courses in complementary fields.

Degree Requirement Courses	*Units*
Basic Language Courses	0-16
French-Major	24
Major Requirements	**24-40**
Graduation Total**	**40**

***Presumes an average of four units per course.*

Major Requirements for French Language and Literature Track Units

One course in Advanced Language such as:

110	Grammaire, Composition et Discussion	4
	Or	
107	French of Business & Economics	4

Plus five additional advanced courses, to include one course A and one course B of the following series:

116	Littérature Française A	4
112	Civilisation Française A	4
118	Littérature Française B	4
114	Civilisation Française B	4

And/or however many of the following to bring number to five:

120	Le Cinéma Français/ French Cinema	4
122	La Francophonie	4
124	Individu et Société	4
126	Penseurs et Philosophes	4
128	Images et Voix de Femmes	4
191	Etudes Indépendantes	2-4
193	Etudes Spécialisées	4
Major Total		**24**

Approved equivalents of major requirements are acceptable, but at least three (3) advanced courses must be completed in the French section of the Department of Modern Language and Literature. One of these must be completed upon return from study abroad. A student may take no more than one online advanced course to complete the major. Demonstrated oral proficiency at the ACTFL advanced level is expected at the time of graduation.

French Studies Track

Requirements for the French Studies track are five courses in French beyond FREN 25-Intermediate French, fourth semester. Students may take French 51 or French 120 in English when offered to count for one of the five. Assignments may be completed in French as an option, or at the discretion of the instructor. Two of the advanced courses may be completed in a study abroad program. Three related courses in other departments are an additional requirement. Among the options for related courses are: ARTH 112-19th Century European Art; ARTH 114-20th Century European Art and Film; HIST 111-Europe in Turmoil; HIST 113-Europe since 1945; HIST 110-French and Russian Revolutions; POLS 141-Comparative Politics of Western Europe; POLS 168-Comparative Foreign Policy; ECON 121-International Trade. Other courses may be negotiable with the French Studies faculty adviser and be pre-approved for credit in the major. At least one semester of study abroad in a French-speaking country and in a program in the target language is strongly urged for both tracks.

Japanese

The curriculum in Japanese includes beginning and intermediate language classes, advanced language courses, surveys of Japanese culture and literature, period literature courses and a course in Modern Business Japanese. Some survey-type courses are given in English for a general audience. Most courses are taught in Japanese. At least three advanced courses must be completed in the Japanese section of the Department of Modern Language and Literature.

The B.A. in Japanese has two tracks, 1) the Language and Literature track, which requires completion of six Japanese courses above the intermediate level and 2) the Japanese Studies track which requires five advanced Japanese courses plus three related courses taught in English. Demonstrated oral proficiency in Japanese at the ACTFL advanced level is expected at the time of graduation.

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.

Degree Requirements Courses	*Units*
Basic Japanese Courses	0-16
Japanese-Advanced	24
Non-Japanese/Language	4
Major Requirements	**28-44**
Graduation Total**	**34**

**See Degree Requirements paragraph. Total may vary depending upon entering level of preparation and elective choice.*
***Presumes an average of four units per course.*

Major Requirements for Japanese Language and Literature Track

JAPN 125	Advanced Japanese I	4 or
JAPN 126	Advanced Japanese II	4

Plus one comprehensive survey course:

JAPN 170	Japanese Literature in Translation	4 or
JAPN 172	Japanese Culture & Civilization	4

*Plus four additional advanced Japanese courses:****

Advanced Japanese Elective	4
Advanced Japanese Elective	4
Advanced Japanese Elective	4
Advanced Japanese Elective	4
Total	**24**
Plus one course in Linguistics or Ancient or Modern Language other than Japanese	4
Total	**4**
Major Total	**28**

****These remaining courses to be selected in consultation with the major adviser.*

Japanese Studies Track

Required courses for the major in Japanese Studies are five advanced Japanese language courses plus three related courses in other departments selected from such courses as ARTH 122-Japanese Art History; HIST 30 and HIST 31-East Asian Civilizations I and II; HIST 143-Modernization of Japan; JAPN 170-Japanese Literature in Translation; JAPN 172-Japanese Culture and Civilization; POLS 152-Politics of Asia. Other courses in related fields may be negotiable with the Japanese Studies faculty adviser. Oral proficiency in Japanese at the ''Intermediate High'' level is expected at the time of graduation. At least one semester of study abroad in Japan in a program which conducts coursework in Japanese is strongly urged.

Spanish

The curriculum in Spanish includes beginning, intermediate and advanced level classes for both native and non-native speakers of Spanish. Spanish linguistics, Hispanic literature and civilization courses are complemented by Experiential Learning opportunities. All courses are given entirely in Spanish.

The B.A. in Spanish has two tracks: 1) The Hispanic Language and Literature Track which requires completion of eight classes (32 units) beyond intermediate level. 2) The Spanish Pedagogy Track which requires nine classes plus one experiential learning course (38 units). Students seeking a teaching credential must complete the Spanish Pedagogy Track in addition to courses required by the School of Education.

Degree Requirements Units

Basic Spanish Courses	0-16
Spanish-Advanced	32-36
Major Requirements	**32-52**
Graduation Total**	**31**

**See Degree Requirements paragraph. Total may vary depending on entering level of preparation and elective choice.*
***Presumes an average of four units per course.*

Hispanic Language and Literature Track Major Requirements

The student should complete a minimum of 32 units beyond the intermediate level (Spanish 25, Spanish 21b). Sixteen of the 32 units must be completed in the Modern Language and Literature Department on this campus.

SPAN 101	Composición	4
SPAN 103	Introducción a la literatura hispánica	4
SPAN 133	Don Quijote	4
SPAN 135	Literatura hispanoamericana del siglo XX	4
SPAN 141	Sintaxis, semántica y morfología	4

Plus one of the following courses in Hispanic civilization:

SPAN 110	Civilización hispanoamericana	4
SPAN 112	Civilización española	4

Plus additional upper division elective courses to bring total to 32 units.

Total 32

Spanish Pedagogy Track Major Requirements

The student should complete a minimum of 38 units beyond the intermediate level (Spanish 25, Spanish 21b). Twenty of the 38 units must be completed in the Modern Languages and Literature Department on this campus.

SPAN 101	Composición	4
SPAN 103	Introducción a la literatura hispánica	4
SPAN 133	Don Quijote	4
SPAN 135	Literatura hispanoamericana del siglo XX	4
SPAN 141	Sintaxis, semántica y morfología	4
SPAN 143	Fonetica y fonología	4

Plus one of the following courses in Hispanic civilization:

SPAN 110	Civilización hispanoamericana	4
SPAN 112	Civilización española	4

Plus one of the following courses in Hispanic Literature in North America:

SPAN 122	Literatura mexicana	4
SPAN 124	Escritores hispanos en los Estados Unidos	

Plus one of the following experiential learning courses:

LANG 87	Internship in Applied Language	2
LANG 89	Practicum	2

Plus additional upper division elective courses to bring total to 38 units. Plus presentation of Professional Portfolio during the semester prior to graduation. Plus Exit Examination during semester prior to graduation.

Total 38

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 five of the following languages - French, German, Japanese, Spanish, Chinese. 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 five).

2) Japanese and Chinese administers its own test for demonstrated oral proficiency.

b. Minor in Chinese Studies:

Six courses (a minimum of 24 units) to include CHIN 11a, 11b, 23, and 25. In addition, two advanced courses in the Modern Language and Literature Department, or other approved department, one of which must be in the Chinese language. Or: CHIN 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:

Six courses (24 units), in French including: FREN 11a, 11b, 23, 25 (or equivalents) plus two approved advanced courses. At least one of the advanced courses must be taken in the Department of Modern Language and Literature at Pacific. Students who acquire competency in French elsewhere may be exempt from a maximum of eight units of the requirement. Students are encouraged to study abroad in a French-speaking country and/or participate in a summer work program or internship there.

d. Minor in Japanese:

Six courses (a minimum of 24 units) to include: JAPN 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 eight units of the requirement. (Japanese administers its own test for demonstrated oral proficiency on the intermediate level.)

e. Minor in Spanish:

Twenty units beyond SPAN 21a or Spanish 23. Twelve of the twenty units must be studied in the Department of Modern Language and Literature and include the following courses or their equivalent: SPAN 101, SPAN 103, either SPAN 110 or SPAN 112, SPAN 141, and one elective course that can be fulfilled by SPAN 25 or 21b or any upper division Spanish course. Students must demonstrate oral proficiency at the intermediate level before a minor will be granted.

f. Minor in Russian Area Studies:

Completion of six courses (24 units) as follows: Two courses (8 units) of Russian language. RUSS 73-Russian Culture and Civilization or RUSS 120-Contemporary Russian Film (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 RUSS 73). HIST 103-Roots of Russian History or HIST 115-History of Modern Russia. ECON 71-Global Economic Issues. One of the following four additional units of Russian language HIST 110-French and Russian Revolutions. HIST 116-History of Soviet Foreign Policy. ECON 127-Comparative Economic Systems, or an alternative course selected from those listed above, or a summer of semester of study in Russia on a program approved by the Office of International Programs or by the minor adviser. A minimum of 12 units must be completed at the University of the Pacific.

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 (ECON 53, 55, 121, 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 K. Golsan, Modern Language and Literature, or the chairperson of the Economics Department.

b. Combination of a Bachelor of Arts (Language and Literature) and Master of Business Administration. A joint program of the College of the Pacific and the Eberhardt School of Business. Students earn a B.A. in French, German, Japanese or Spanish in four years while completing a minor in management and the first year of the MBA program. Students who meet performance requirements are guaranteed admission to the MBA program and can complete the MBA in one additional year.

c. Combination of a Bachelor of Arts (Language and Literature) and Bachelor of Science (Engineering). In five years, students earn a B.A. in French, German, Japanese or Spanish and a B.S. in Civil, Electrical, or Management Engineering. Consult Modern Language faculty for details.

d. French Studies. Requirements for the French Studies track of the French major are five courses in French beyond FREN 25-Intermediate French, fourth semester. Two of the advanced courses may be completed in a study abroad program. Three related courses in other departments are an additional requirement. Among the options for related courses are: ARTH 112-l9th Century European Art; ARTH 114-20th Century European Art and Film; HIST 111-Europe in Turmoil; HIST 113-Europe Since 1945; HIST 110-French and Russian Revolutions; POLS 141-Comparative Politics of Western Europe; POLS 168-Comparative Foreign Policy; ECON 121-International Trade (prerequisites: ECON 53, 55). Other courses may be negotiable with the French Studies faculty adviser. Two of these courses may be completed in a study abroad program which conducts its coursework in French.

These courses should be pre-approved for credit in the major. At least one semester of study abroad in a French-speaking country and in a program in the target language is strongly urged. A student may not major in both French and French Studies.

e. Japanese Studies. Required courses for the Japanese Studies track of the Japanese major are five advanced Japanese language courses plus three related courses in other departments selected from such courses as ARTH 122-Japanese Art History; HIST 30 and HIST 31-East Asian Civilizations I and II; HIST 143-Modernization of Japan; JAPN 170-Japanese Literature in Translation; JAPN 172-Japanese Culture and Civilization; POLS 152-Politics of Asia; (other courses in related fields may be negotiable with the Japanese Studies faculty adviser). Oral proficiency in Japanese at the level of intermediate high is expected at the time of graduation. At least one semester of study abroad in Japan in a program which conducts coursework in Japanese is strongly urged.

Course Offerings

Unless otherwise specified in this listing all coursework is done in the foreign language.

Language courses 11A through 25 must be taken in sequence

General

FREN 51. French Literature in English (4)
See description under French.

LANG 87. Internship in Applied Language (2-4)
This course provides opportunities to use language(s) studied under supervised conditions in a professional venue, either in local schools and businesses or in study-abroad internships. Registration is subject to departmental approval and is ordinarily limited to advanced students. *Pass/No credit grading only.*

LANG 89. Practicum (2)
This course is designed to give the student opportunity to work with language in practical situations under supervised conditions. 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.*

LANG 197. Undergraduate Research (2-4)
Provides opportunity for qualified students majoring in a language in the Department of Modern Language and Literature to complete a supervised original research project. Students are encouraged to travel to collections and use unique materials and resources in developing an original paper or other public presentation of their findings.

JAPN 170. Japanese Literature in Translation (4)
See description under Japanese.

JAPN 172. Japanese Culture and Civilization (4)
See description under Japanese.

Chinese

CHIN 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.

CHIN 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, or permission of the instructor.*

CHIN 23. Intermediate Chinese, Third Semester (4)
Chinese culture and society through readings, videos, conversations on daily life and cultural behaviors in China. Emphasis on developing critical thinking as well as 4-skills proficiency in Chinese language at the intermediate level. *Prerequisite: second semester Chinese, or permission of the instructor.*

CHIN 25. Intermediate Chinese, Fourth Semester (4)
A continuation of cultural themes begun in CHIN 23. Chinese culture and society through readings, videos, conversations on daily life and cultural behaviors in Greater China (China, Taiwan and Hong Kong). Continued emphasis on developing critical thinking as well as 4-skills proficiency in Chinese language at the intermediate level. *Prerequisite: third semester Chinese, or permission of the instructor.*

CHIN 120. Asian Cinemas (4)
How do contemporary films from China, Hong Kong, Taiwan, Japan, Korea, Vietnam and India represent their people, re-imagine their cultural identities, and negotiate the local and global, tradition and modernity? This course is an introduction of Asian cinematic narratives. The focus will be on trying to map the overall picture of each cinema, and then examine their major films. Possible topics include cinematic history of each country; relationships to literary and cultural discourses; different film genres; major directors, and various thematic concerns. The aims of this course are to expand your knowledge of both the broad cinematic and socio-historical contexts of Asian cinemas, as well as to enhance your critical thinking. Lectures and readings in English, all films have English subtitles; no prior background is required.

CHIN 191. Independent Study (2-4)

CHIN 193. Special Topics (4)

French

FREN 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. Video-based communicative and cultural approach. Students with previous experience in French will be initially placed in accordance with their linguistic proficiency. Placement is subject to continuing re-evaluation.

FREN 11b. First-Year French, Second Semester (4)
Training in the basic language skills of understanding, speaking, reading and writing at the second semester level. Video-based communicative and cultural approach. Placement is subject to continuing re-evaluation. *Prerequisite: first semester French, or permission of the instructor.*

FREN 23. Intermediate French, Third Semester (4)
Culture and civilization through study of French daily life situations and customs, with discussion of reading material and exploration of French-language web sites. Integrated acquisition and review of grammar as a functioning language-system. *Prerequisite: second semester French, or permission of the instructor.*

FREN 25. Intermediate French, Fourth Semester (4)
Continuation and expansion of cultural themes begun in FREN 23, to include history and memory, national identity and diversity, "francophonie", current issues and events in the French-speaking world. Reading selections, discussion, exploration of French-expression web sites, with emphasis on the press. Continuation of integrated acquisition and review of grammar as a functioning language-system. *Prerequisite: intermediate French, 3rd semester, or permission of the instructor*.

FREN 51. French Literature in English (4)
A study of selected themes, periods or forms in French literature. Readings, discussions, lectures, exams in English. Applicable to French Studies major.

FREN 93. Special Topics (4)

FREN 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, or permission of the instructor.*

FREN 110. Grammaire, Composition et Discussion (4)
Essential principles of syntax; Composition; oral presentations. *Prerequisite: four semesters of college French.*

FREN 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, or permission of the instructor.*

FREN 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, or permission of the instructor.*

FREN 116. Littérature Française A (4)
An introductory study of French literature from the Middle Ages through the 18th century. *Prerequisite: four semesters of college French, or permission of the instructor.*

FREN 118. Littérature Française B (4)
An introductory study of French literature of the 19th and 20th centuries. *Prerequisite: four semesters of college French, or permission of the instructor.*

FREN 120. Le Cinéma Français/ French Cinema in English (4)
A study of the development of French cinema through the analysis of themes, styles, and cinematic techniques. In French. Films with English subtitles. Offered occasionally in English with no prerequisite. *Prerequisite for French version only: four semesters of college French.*

FREN 122. La Francophonie (4)
Studies in francophonic literary and cinematographic productions from Africa, the Antilles and/or Canada. Works analyzed in their cultural, geographical and historical context with an emphasis on the issues of language, race, gender, power, and cultural identity. In French. Offered occasionally in English as FREN 51. *Prerequisite: four semesters of college French. May be repeated with permission of the instructor.*

FREN 124. Individu et Société (4)
An exploration of the construction of the self and its relation to the social in various epochs in French culture. Focus on universality and difference, the autobiographical project, social determinism, exclusion and revolt. In French. *Prerequisite: four semesters of college French.* Offered occasionally in English as FREN 51. May be repeated with permission of the instructor.

FREN 126. Penseurs et Philosophes (4)
The French moralists, essayists and philosophers from the Renaissance to the present. A history of French thought and its preferred fields of speculation. Selected readings from Montaigne, Descartes, Pascal, Montesquieu, Voltaire, Diderot, Rousseau, Sartre, Camus, Foucault and others. In French. *Prerequisite: four semesters of college French.*

FREN 128. Images et Voix de Femmes (4)
Images and voices of women from courtly love to the present. An analysis of "la condition feminine" in the French literary and cultural context. In French. *Prerequisite: four semesters of college French.* Offered occasionally in English as FREN 51. May be repeated with permission of the instructor.

FREN 191. Etudes Indépendantes (2-4)
Ordinarily limited to majors in their senior year.

FREN 193. Etudes Spécialisées (4)
Prerequisite: four semesters of college French or equivalent.

German

GERM 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.

GERM 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, or permission of the instructor.*

GERM 23. Intermediate German, Third Semester (4)
Culture and civilization of the German-speaking countries through readings, conversations, and videos about daily life and customs in Germany, Austria and Switzerland as well as exploration of German-language web sites. Integrated review of German as a functioning language-system. *Prerequisite: second semester German, or permission of the instructor.*

GERM 25. Intermediate German, Fourth Semester (4)
A continuation of the cultural themes begun in GERM 23. Culture and civilization of the German-speaking countries through readings, conversations, and videos about daily life and customs in Germany, Austria and Switzerland as well as exploration of German-language web sites. Continuation of the integrated review of German as a functioning language-system. *Prerequisite: intermediate German, third semester, or permission of the instructor.*

GERM 93. Special Topics (4)

GERM 106. German Culture and Society II (4)
A study of the major cultural, artistic and political forces of the past 150 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, or permission of the instructor.*

GERM 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. *Pre-requisite: four semesters of college German or permission.* Course may be repeated for credit at the discretion of the instructor.

GERM 124. German Writers of the 19th 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 or permission of the instructor.*

GERM 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 or permission of the instructor.*

GERM 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 or permission of the instructor.*

GERM 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.

GERM 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. *Prerequisite: four semesters of college German or permission of the instructor.*

GERM 191. Independent Study (2-4)
Ordinarily limited to majors in their senior year.

GERM 193. Special Topics (4)

Japanese

JAPN 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.

JAPN 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 or permission of the instructor.*

JAPN 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 or permission of the instructor.*

JAPN 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 will be introduced. *Prerequisite: third semester Japanese or permission of the instructor.*

JAPN 93. Special Topics (4)

JAPN 125. Advanced Japanese I (4)
Selective reading in Japanese of contemporary literary works in prose, poetry and drama. Translation projects. Continued training in writing and conversation at the advanced level. *Prerequisites: JAPN 25 or permission of the instructor*. (JAPN 125 or 126 may be taken independently.)

JAPN 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: JAPN 25 or permission of the instructor.* (JAPN 125 or 126 may be taken independently.)

JAPN 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 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 or permission of the instructor.*

JAPN 170. Japanese Literature in Translation (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 bril-

liant literary heritage rarely matched anywhere in the world. Taught in English.

JAPN 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.

JAPN 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. *Prerequisites: JAPN 125 or 126, or permission of the instructor.*

JAPN 191. Independent Study (2-4)
Ordinarily limited to majors in their senior year.

JAPN 193. Special Topics (4)
Prerequisite: four semesters of college Japanese or equivalent.

Portuguese

PORT 124. Intensive Portuguese (4)
The principal elements of grammar; intermediate level reading. Prerequisite: the equivalent of two years of college Spanish or special permission.

PORT 126. Reading and Discussion on Luso-Brazilian Culture (4)
Major or exclusive emphasis on Brazilian literature. *Prerequisite: PORT 124.*

Russian

RUSS 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.

RUSS 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 or permission of the instructor.*

RUSS 23. Intermediate Russian, Third Semester (4)
Russian culture through readings, conversations, videos and discussions on daily life and culture of Russia and former Soviet Republics. Review of Russian language as a functioning system. *Prerequisite: second semester Russian or permission of the instructor.*

RUSS 25. Intermediate Russian, Fourth Semester (4)
A continuation of the cultural themes begun in RUSS 23. Russian culture through readings and discussions on daily life in Russia and former Soviet Republics. Continued review of Russian language as a functioning system. *Prerequisite: third semester Russian or permission of the instructor.*

RUSS 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 20th century. Readings, lectures, discussions and student presentations on Russian literature and art. A survey of major literary works of the Golden Age of Russian literature. Extensive use of audiovisual aids. Taught in English.

RUSS 120. Contemporary Russian Film (4)
RUSS 120 is a 4-unit course designed for a general audience. No knowledge of Russian is required; lectures and readings are entirely in English. All the movies to be screened have English subtitles. This course is an overview of contemporary Russian film as representation and reflection of Russian cultural values and political and economic changes for the 1960s to the present. Students will see and discuss works of major film directors in their social, political, historical, and cultural context. They will learn about new cultural trends, the relationship between culture and officialdom, as well as peculiarities of national self-perception (the Russian Idea), gender/ethnicity based interpretations, and artistic realities in Russian film.

RUSS 191. Independent Study (2-4)
May be used for advanced work in Russian reading, composition and conversation, or for work on other topics.

RUSS 193. Special Topics (4)

Spanish

SPAN 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.

SPAN 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 or permission of the instructor.*

SPAN 21a. Spanish for Heritage Speakers, First Semester (4)
Beginning study of the formal use of Spanish by heritage speakers. Emphasizes skills in composition, advanced reading comprehension, standards versus vernacular usages, and cross language interference. *Prerequisite: Native speaking ability in Spanish.*

SPAN 21b. Spanish for Heritage Speakers, Second Semester (4)
Emphasizes skills in composition, advanced reading comprehension, standards versus vernacular usages, and cross language interference. *Prerequisite: Spanish for Heritage Speakers First Semester or permission of instructor.*

SPAN 23. Intermediate Spanish, Third Semester (4)
Culture and civilization of the Hispanic world through readings, videos and conversations on daily life and culture in the Hispanic world. Rapid review of Spanish language as a functioning system. *Prerequisite: second semester Spanish or permission of the instructor.*

SPAN 25. Intermediate Spanish, Fourth Semester (4)
A continuation of the cultural themes begun in SPAN 23. Culture and civilization of the Hispanic world through readings, videos and conversations on daily life and culture in the Hispanic world. Continued review of Spanish language as a functioning system. *Prerequisite: intermediate Spanish, third semester or permission of the instructor.*

SPAN 27. Conversación (2)
May be repeated once for credit. An advanced intermediate (fourth semester) level course to develop 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. *Prerequisite: SPAN 11b or permission of the instructor.*

SPAN 101. Composición avanzada (4)
Designed to prepare students for formal writing in Spanish in academic and professional contexts. Includes grammar review and vocabulary building. *Prerequisite: Spanish 25 or 21b, or permission of instructor.*

SPAN 103. Introducción a la literatura hispánica (4)
A systematic survey of Hispanic literature. Addresses such topics as the function of literature, the analysis and interpretation of texts, literary periods, movements and trends. *Prerequisites: Spanish 21b or 25 or 101 or permission of the instructor.*

SPAN 110. Civilización hispanoamericana (4)
A systematic survey of Hispanic-American civilization from pre-Columbian times to the modern era. Special attention is paid to the Incas, Aztecs and Mayans. May include national and regional historic, political, economic and cultural developments and their impact on Hispanic life. *Prerequisite: Spanish 21b or 25 or 101 or 103, or permission of instructor.*

SPAN 112. Civilización española (4)
A systematic survey of Hispanic literature. An overview of Spanish Peninsular culture and history through literature and art. Representative works from the Middle Ages to the contemporary period are studied in the context of intellectual history and local and international historic developments. *Prerequisite: Spanish 21b or 25 or 101 or 103, or permission of instructor.*

SPAN 120. Narrativa hispánica (4)
An overview of the novel and short story with an in-depth study of the landmark works of the most prominent authors of the Hispanic world. May be repeated with permission of instructor. *Prerequisite: Spanish 101 or 103 or 133 or 135, or permission of instructor.*

SPAN 122. Literatura mexicana (4)
Reading and analysis of Mexican literature. Special emphasis on cultural and societal aspects. *Prerequisite: Spanish 101 or 103 or 133 or 135, or permission of instructor.*

SPAN 124. Escritores hispanos en los Estados Unidos (4)
Systematic survey of U.S. Latino literature. This course could provide an overall view of Hispanic literature or emphasize the literature of one of its major groups: Chicanos, Cubanos o Puertorriqueños. May be repeated with permission of instructor. *Prerequisite: Spanish 101 or 103 or 133 or 135, or permission of instructor.*

SPAN 126. Poesía hispánica (4)
A study of the primary poetic movements of the Spanish-speaking world with an in-depth study of the landmark works of the most important authors. Writers, periods and regional focus will vary. *Prerequisite: Spanish 101 or 103 or 133 or 135, or permission of instructor.*

SPAN 128. Teatro hispánico (4)
A study of the works of major playwrights of the Spanish-speaking world. Writers, periods and regional focus will vary. *Prerequisite: Spanish 101 or 103 or 133 or 135, or permission of instructor.*

SPAN 133. Don Quijote (4)
An in-depth study of the major themes of Cervantes' masterpiece. Includes a consideration of historical, intellectual and literary contexts. Explores the relationship of this work to the ideological currents of late sixteenth-and early seventeenth-century Europe. *Prerequisites: Spanish 101, 103 or permission of instructor. Not recommended for freshmen.*

SPAN 135. Literatura hispanoamericana del siglo XX (4)
An analytical study of the works of major authors. Magic realism will be an important focus in the overview of literary trends in Twentieth Century Hispanoamerica. *Prerequisites: Spanish 101 and Spanish 103 or permission of instructor.*

SPAN 140. Traducción (4)
Outline of basic written translation techniques. Translation exercises and assignments. Special attention given to vocabulary and sentence structure. Designed to train students to interpret content and express it in the appropriate written form. *Prerequisite: Spanish 101 or permission of instructor.*

SPAN 141. Sintaxis, semántica y morfología (4)
An overview of syntaxes, semantics and morphology within the context of Spanish linguistics. Focus on pedagogical descriptions that explain the structure of language as a complete system. Designed to facilitate the understanding and teaching of Spanish. *Prerequisite: Spanish 101 or permission of instructor.* This course requires a high level of proficiency in Spanish. Not recommended for freshmen.

SPAN 143. Fonética y fonología (4)
An overview of phonetics and phonology within the context of Spanish linguistics. Focus on the study of the sound system of the Spanish language, the mechanics of sound production, the manner in which the language has organized these sounds into a system of logical relationships, and the way geographical, social and ethnic variations are made manifest through that system. *Prerequisite: Spanish 141.* Not recommended for freshmen.

SPAN 191. Independent Study (2-4)

SPAN 193. Special Topics (3 or 4)

Philosophy

Professors: Heffernan

Associate Professors: Matz (Chair)

Assistant Professors: Wittrup, Rennard

Department Phone: (209) 946-2281

Website:
http://college.pacific.edu/philosophy/index.htm

The study of philosophy is at the core of a liberal arts education. The ideal of a liberal arts education is not simply to prepare students for a specific career but to prepare them for a meaningful personal life and for intelligent participation in their communities. There are issues that all human beings confront regardless of what career they choose or community they live in, such as the nature and limits of knowledge, the principles of right and wrong, the meaning of life, the truth of religious claims, and the nature of reality. Philosophers raise critical questions about these issues, and some attempt to construct comprehensive systems that explain how all human activities fit together in a unified way. Moreover, through the exposure to some of the great minds in human history and the discussion of their ideas with their professors and peers, students develop the reading, writing, and critical thinking skills that are essential to a human being. In the words of the American Philosophical Association, the study of philosophy serves:

> to develop intellectual abilities important for life as a whole, beyond the knowledge and skills required for any particular profession. Properly pursued, it enhances analytical, critical and interpretive capacities that are applicable to any subject matter, and in any human context. It cultivates the capacities and appetite for self-expression and reflection, for exchange and debate of ideas, for lifelong learning and for dealing with problems for which there are no easy answers. It also helps to prepare one for the tasks of citizenship. Participation in political and community affairs today is all too often insufficiently informed, manipulable and vulnerable to demagoguery. A good philosophical education enhances the capacity to participate responsibly and intelligently in public life.

Students choose the Bachelor of Arts degree in philosophy for various reasons. Most enjoy the intellectually provocative and challenging nature of philosophical thinking that opens their minds and has relevance for their personal lives. Some study philosophy in order to go to graduate school and eventually teach philosophy or to enter other professional fields, such as law. And others take philosophy as a second major since it is a good complement to virtually any other major. In all cases, the study of philosophy is personally enriching and develops skills that are transferable to a variety of occupations.

The Department of Philosophy offers different kinds of courses. Historical courses survey the major philosophers and periods in the history of philosophy. Specialized courses focus more narrowly on topics such as applied ethics, religion,

the meaning of life, politics, or the thought of one philosopher. Systematic courses are advanced and deal with problems that arise in relation to all human activities, such as the activity of knowing (epistemology), the nature of reality (metaphysics), and the experience of value (metaethics). The departmental offerings are grouped as follows:

A. Introductory Course: Introduction to Philosophy

B. Formal Reasoning Course: Introduction to Logic

C. Historical Courses: History of Ancient and Medieval Philosophy; History of Modern Philosophy

D. Specialized Courses: Moral Problems; Fundamentals of Ethics; The Meaning of Life; Environmental Ethics; Philosopher in Depth; Philosophy of Science; Philosophy of Law; Philosophy of Mind; Philosophy of Religion; Political Philosophy; Biomedical Ethics, Special Topics

E. Systematic Courses: Metaphysics; Theory of Knowledge; Good, Evil and Reason: Metaethics

Major Requirements

Students seeking a Bachelor of Arts degree in philosophy must complete at least nine courses selected in consultation with their departmental advisor. Students are required to take Introduction to Philosophy, Introduction to Logic, both historical courses, three specialized courses of their choice, and two systematic courses of their choice. Six of these courses must be completed at the University of Pacific. Students must notify a member of the department about their intention to major in philosophy so that a major plan can be created.

Minor Requirements

A minor in philosophy requires the completion of a minimum of 20 units. Students must complete and Introduction to Philosopy course, and the other courses are chosen by the student in consultation with a departmental adviser. No more than two courses from another institution will cont toward the minor, and the department reserves the right to judge the acceptability of any transfer courses.

Typical First Year Program

During the freshman year a student interested in pursuing the philosophy major may take any course in the department that is open to freshmen, but he or she is especially encouraged to choose one or more courses from the following: either PHIL 11-Introduction to Philosophy, PHIL 27-Fundamentals of Ethics, PHIL 53 History of Ancient and Modern Philosophy, PHIL 37-Introduction to Logic.

Course Offerings

PHIL 11. Introduction to Philosophy (4)
An overview of issues addressed by philosophers and the problems that recur in philosophical speculation in the Western world.

PHIL 21. Moral Problems (4)
A moral problem is a result of rational differences of opinion about what is right or wrong. Through philosophical writings and landmark U.S. Supreme Court decisions, students will come to understand the moral and legal complexities of controversial moral problems, such as the moral standing of animals, abortion, doctor-assisted suicide, capital punishment, civil disobedience, affirmative action, sexual morality, pornography, the limits of free speech, and hunger and poverty.

PHIL 25. The Meaning of Life (4)
An investigation of views of the meaning of life ranging from ancient to contemporary philosophers.

PHIL 27. Fundamentals of Ethics (4)
An inquiry into the assumptions, arguments and implications of moral judgments and value systems.

PHIL 35. Environmental Ethics (4)
An investigation of various environmental problems and the ethical attitudes and principles required to address them properly.

PHIL 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.

PHIL 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.

PHIL 47. Philosopher in Depth (4)
An in-depth investigation of the views of a single philosopher on epistemology, ethics, and metaphysics with special attention to how those views cohere (or fail to) into a single world view. Selected philosophers might include Plato, Aristotle, Hume, Kant, Hegel or J.S. Mill. Course may be repeated with a different focus.

PHIL 53. Ancient & Medieval Philosophy (4)
A survey of significant and historically influential philosophers from the ancient and medieval periods, with particular emphasis on the thought of Socrates, Plato, Aristotle, the Hellenistic philosophers (Epicureans, Stoics, Skeptics), Augustine, and Aquinas. Some of the topics to be investigated are: what is happiness? What is the origin and nature of justice and virtue? Why be moral? What are the aims of government and law? What is the difference between knowledge and opinion? What is the nature of things? Does a divine being exist and what is its nature? What is the relationship between religious faith and reason?

PHIL 55. History of Modern Philosophy (4)
A survey of some of the most significant philosophers beginning with the Reformation in the 16th century until the present day. Philosophers studied typically include Descartes, Locke, Hume, Kant, Mill, Marx, Nietzsche, James, Ayer, Wittgenstein, Sartre, and Popper. Some of the topics are: what are the foundations and limits of knowledge? Can humans know anything with certainty? Does God exist? What is the origin and nature of morality? What is the moral basis of government and law? What are the limits of political and social power over individuals? What gives life meaning? A previous course in Philosophy 53 is recommended but not necessary.

PHIL 61. Philosophy of Science (4)
An examination of some of the main philosophical issues regarding the nature and methods of science. Topics include: science and pseudo-science, the sociology of science, theory construction and confirmation, scientific explanation, and scientific realism. Examples drawn from the natural and social sciences. No background in science is needed, though science majors are especially welcome.

PHIL 93. Special Topics (4)

PHIL 101. Philosophers in Conflict (4)
The purpose of this course is to examine two philosophers who construct influential yet opposing views regarding the nature of knowledge, metaphysics, ethics and/or religion. Examples of philosophers in conflict are Kant and Mill or Aristotle and Hobbes.

PHIL 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.

PHIL 121. Philosophy of Mind (4)
Explores some of the major issues and debates in recent philosophy of mind and cognitive science. Main interests include the mind-body problem, artificial intelligence, the problem of intentionality, the explanation of action, mental causation, and the problem of phenomenal consciousness. Additional topics may include vision, concepts, language, and animal cognition.

PHIL 124. Philosophy of Religion (4)
Through classical and contemporary philosophical writings, students will examine arguments that support belief in God (mystical, cosmological, teleological, moral); whether morality depends on religious belief; the relationship between reason and faith; the problem of evil; the possibility of miracles and an afterlife; the nature

of "secular" religions; and the relationship between science and religious belief. A previous course in philosophy is highly recommended.

PHIL 135. Political Philosophy (4)
An evaluation of bases of political power, forms of government and legal and judiciary systems.

PHIL 145. Biomedical Ethics (4)
This course will study the ethical principles and ideals that justify decisions in health care. It will primarily focus on the principles and ideals commonly accepted by western religious and humanistic traditions, and the various ways they are employed by these traditions in concrete cases. Topics covered will include physician-assisted suicide, termination of life-sustaining medical treatment, organ transplantation, abortion, cloning and artificial reproduction, and the allocation of medical resources. The course format will be a blend of lecture and discussion, and include numerous actual and hypothetical cases. Not recommended for first-year students.

PHIL 180. Metaphysics (4)
An in-depth examination of various metaphysical problems that cannot be answered by sense-experience and experimental methods alone, such as whether human beings are free, the nature of personal identity, the relationship between consciousness and the body, the existence of God, the possibility of an afterlife, and the meaning of life.

PHIL 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. At least one previous course in philosophy or permission of the instructor is required.

PHIL 184. Good, Evil, and Reason: Metaethics (4)
A discussion of the questions: Are laws of morality a fact about the world like the laws of physics? Are human beings capable of morality?

PHIL 191. Independent Study (2-4)
Permission of the instructor required.

PHIL 193. Special Topics (4)

Physics

Associate Professors: Hetrick (Chair)

Assistant Professors: Alward, Birmingham

Adjunct Professor: Basu, Sinha

Department Phone: (209) 946-2220

Website: www1.pacific.edu/cop/physics

Matter, energy, space and time obey a few general but precise laws, which are fundamental to the structure and behavior we see in our universe. The evolving understanding of this over the centuries has changed our minds, our lives, and our world profoundly.

The Physics Department helps students understand and explore these natural relationships, their meaning, interconnectedness, and their use. The study of physics includes mastering very broad fundamentals which apply to everything from atoms to galaxies, as well as specific studies in topical specializations such as optics and astrophysics. Students are also encouraged to participate in undergraduate research projects both here at Pacific and at other institutions during the summer break.

Degrees in Physics

The degree programs in Physics prepare students to think deeply through questions, to find and connect abstract relationships to new situations, and to be academically confident and broadly knowledgeable scientists and teachers. Bachelor of Science degrees are offered in Physics, Engineering Physics and Geophysics. A Bachelor of Arts degree is also offered in Physics, which is combined with the credential program for secondary school teaching. The department also offers a Physics Minor, intended for students majoring in other disciplines, who have a strong interest in Physics and the underlying principles of science.

Facilities

The offices, laboratories and classrooms of the Physics Department occupy Olson Hall. Labs are equipped with modern facilities for courses in Optics, Physics, Solid State Physics, Advanced Physics Lab, as well as for the Introductory Physics, Music, and Astronomy courses. There are also several research laboratories. The department has two computer labs with PCs, and a unix (SunRay) computer lab .

Recommended High School Preparation

Physics majors should study enough mathematics in high school so that they are prepared to study calculus in their first semester at Pacific. They should also take high school physics and chemistry. Some experience with computer programming is also very useful.

Academic Requirements

The College of the Pacific requires three Mentor Seminar classes plus nine General Education (G.E.) courses. Courses required for the Physics, Mathematics, and Engineering majors automatically satisfy all three subdivisions of the G.E. category III, "Natural World and Formal Systems of Thought." Therefore, only six G.E. electives must be taken by students completing any of the Physics degrees, including the Physics Minor.

Bachelor of Science - Physics

The Bachelor of Science in Physics degree program is the standard preparation for professional careers in physics and related physical sciences. Graduates may enter industrial and government positions directly at the B.S. level or may proceed to graduate study in preparation for higher level research positions. The B.S. degree requires students to complete twelve courses in physics, four courses in Mathematics, two in Chemistry and one course in electronics in the School of Engineering.

Degree Requirements	Courses	Units
Physics	12	47
Mathematics	4	16
Chemistry	2	10
Engineering	1	4
General Education Electives	6	18
Mentor Seminars	3	10
Total	**28**	**105**

College of the Pacific students need 124 units to graduate, meaning another 19 units of university electives in addition to these requirements must be taken. A maximum of 13 of these units needed to graduate may be taken in Physics, due to the 64 unit rule of the College of the Pacific: "Students must complete a minimum of 64 units outside the department of their first major".

Major Requirements

Physics

		Units
PHYS 27	Computing for Physicists	1
PHYS 53	Principles of Physics I	5
PHYS 55	Principles of Physics II	5
PHYS 57	Modern Physics	4
PHYS 101	Electricity and Magnetism	4
PHYS 102	Electrodynamics	4
PHYS 151	Advanced Physics Lab	4
PHYS 181	Classical Mechanics	4
PHYS 183	Quantum Mechanics	4
PHYS 197	Undergraduate Research	4

plus two upper division physics electives

Total **47**

Mathematics

MATH 51	Calculus I	4
MATH 53	Calculus II	4
MATH 55	Calculus III	4
MATH 57	Ordinary Differential Equations	4
Total		**16**

Chemistry

CHEM 25	General Chemistry	5
CHEM 27	General Chemistry	5
Total		**10**

Engineering

Electronics Course**	4
Total	**4**
Major Total*	**77**

**An upper level vector calculus or complex analysis course is recommended, such as MATH 152.*

***The specific electronics course will vary according to the student's background. Students with no electronics background will take ENGR 41-Electrical Science. More advanced students are encouraged to take ELEC 131-Electronic Circuits I.*

Bachelor of Science – Engineering Physics

The Bachelor of Science in Engineering Physics is offered in cooperation with the School of Engineering. The proportions of courses taken in these two areas are roughly equal. This is a double-major, since it satisfies the requirements for both a degree in Engineering Physics awarded by the School of Engineering, and a degree in Engineering Physics awarded by the College of the Pacific.

Today's engineer must be able to understand and apply new and changing technologies which arise from advances in fundamental science. Pacific engineering physics graduates have a firm understanding of the fundamental physics upon which modern technologies are based. He or she is able to use advanced mathematical methods and problem solving techniques to relate new ideas and scientific developments to practical problems in engineering. By acquiring skills applicable for lifelong learning, the Pacific engineering physics graduate is well prepared for a competitive career.

Students who major in Engineering Physics are subject to all of the requirements for an engineering major. Among these requirements is a work experience component called the Cooperative Education Program. Students must complete 50 units of full-time work experience in order to graduate. Students fulfill this requirement in two six-month periods and are placed in these positions by the School of Engineering. This major is a five-year program.

Degree Requirements	Courses	Units
Physics	7	30
Engineering	16	86
Mathematics	5	20
Chemistry	1	5
Computer Science	1	4
English	1	4
General Education	6	18
Mentor Seminars	3	10
Total	**40**	**177**

Major Requirements

Physics

PHYS 53	Principles of Physics I	5
PHYS 55	Principles of Physics II	5
PHYS 57	Modern Physics	4
PHYS 101	Electricity and Magnetism	4
PHYS 161	Thermal Physics	4
Upper-division physics electives		8
Total		**30**

Engineering

ECPE 41	Electrical Circuits	3
ECPE 41L	Electrical Circuits Lab	1
ECPE 71	Digital Design	3
ECPE 71L	Digital Design Lab	1
ECPE 121	Systems Analysis	4
ECPE 131	Intro to Integrated Circuits	3
ECPE 131L	Integrated Circuits Lab	1
ECPE 195	Senior Project I	2
ECPE 196	Senior Project II	2
ENGR 5	Introduction to Engineering	2
ENGR 45	Materials Science	4
ENGR 120	Mechanics	3
CIVL 130	Fluid Mechanics	4
ECPE 181	Professional Practice I	18
ECPE 182	Professional Practice II	14
ECPE 183	Professional Practice III	18
Upper-division engineering electives		8
Total		**91**

Mathematics

MATH 39	Probability and Statistics	4
MATH 51	Calculus I	4
MATH 53	Calculus II	4
MATH 55	Calculus III	4
MATH 57	Ordinary Differential Equations	4
Total		**20**

Chemistry

CHEM 25	General Chemistry	5
Total		**5**

Computer Science

COMP 51	Introduction to Computer Science	4
Total		**4**

English

ENGL 105	Technical Writing	4
Total		**4**
Major Total		**149**

Bachelor of Science - Geophysics

The Bachelor of Science degree in Geophysics is awarded for completion of an interdepartmental program offered by the Department of Physics and the Department of Geosciences. This major prepares students for graduate studies in geophysics or for a career in exploration geophysics. The major consists of six courses in physics, five in geology, five in mathematics, two in chemistry, a computer programming course and Fluid Mechanics (offered through the School of Engineering).

Degree Requirements

General Education*	9
University Electives	3
Non-major Requirements	12
Physics	6
Geology	5
Mathematics	5
Chemistry	2
Engineering/Other Science	2
Major Requirements	20
Graduation Total**	**32**

**See Degree Requirements paragraph.*
***Presumes an average of four units per course.*

Major Requirements

Physics

PHYS 53	Principles of Physics I	5
PHYS 55	Principles of Physics II	5
PHYS 57	Modern Physics	4
PHYS 101	Electricity and Magnetism	4
PHYS 161	Thermal Physics	4
PHYS 181	Classical Mechanics	4
Total		**26**

Geology

GEOS 051	Physical Geology	4
GEOS 100	Mineralogy	4
GEOS 110	Igneous and Metamorphic Petrology or	
GEOS 112	Sedimentary Petrology	4
GEOS 114	Structural Geology	4
GEOS 161	Geologic Field Methods	4
Total		**20**

Mathematics

MATH 37	Probability and Statistics	4
MATH 51	Calculus I	4
MATH 53	Calculus II	4
MATH 55	Calculus III	4
MATH 57	Ordinary Differential Equations	4
Total		**20**

Chemistry

CHEM 25	General Chemistry	5
CHEM 27	General Chemistry	5
Total		**10**

Engineering

CIVL 130	Fluid Mechanics I	4
Total		**4**

Computer Science

Computer Programming Course	3
Total	**3**
Major Total	**83**

Bachelor of Arts - Physics

The Bachelor of Arts degree program requires fewer advanced courses in Physics and Mathematics than are required for the three Bachelor of Science programs. Students complete six courses in Physics and four in Mathematics, which allows time for a student to develop greater breadth in other areas as is appropriate for a high school physical science teaching credential. Thus, this degree is at present limited to students in the secondary school teaching track. (Students interested in teaching credential programs with a physics or physical sciences emphasis can obtain the Teaching Credential Major sheet from the Office of Admissions.)

Degree Requirements	Courses	Units
Physics	7	27
Mathematics	4	16
General Education Electives	6	18
Pacific Seminars	3	10
School of Education Credential Requirements	9	35
Graduation Total**	**29**	**106**

Requirements

College of the Pacific students need 124 units to graduate, meaning another 54 units of university electives in addition to these requirements must be taken.

Major Requirements

Physics

PHYS 27	Comp. For Physicists	1
PHYS 53	Principles of Physics I	5
PHYS 55	Principles of Physics II	5
PHYS 57	Modern Physics	4
PHYS 181	Classical Mechanics	4
Plus two upper division physics electives		8
Total		**27**

Mathematics

MATH 51	Calculus I	4
MATH 53	Calculus II	4
MATH 55	Calculus III	4
MATH 57	Ordinary Differential Equations	4
Total		**16**
Major Total		**42**

The Physics Minor

A minor in Physics provides the student of any discipline with a very strong understanding of the foundations of science and the workings of the physical world. The study of physics teaches abstract problem solving skills which are both of great benefit to the student, and impressive to prospective employers.

The Minor requires students to complete five courses in Physics: PHYS 53, 55, 57 and two upper division electives. Note that these courses have Calculus prerequisites.

Minor Requirements

Physics	*Units*	
PHYS 53	Principles of Physics I	5
PHYS 55	Principles of Physics II	5
PHYS 57	Modern Physics	4
Plus two upper-level Physics electives		8
Minor Total		**22**

Typical First-Year Program

Students planning to major in physics should contact the chairman of the Physics Department. An adviser from the department will be assigned, who should be consulted before registering for the first semester. Some typical freshman year programs are listed below:

B.S. in Physics

Fall:	Sci. Comp. Tutorial, Calculus I, General Chemistry I, Pacific Seminar I, elective for general education category I or II
Spring:	Principles of Physics, Calculus II, General Chemistry II, Pacific Seminar II

B.S. in Engineering Physics

Fall:	Calculus I, General Chemistry, Introduction to Engineering, Pacific Seminar I
Spring:	Principles of Physics, Calculus II, Introduction to Computer Science, Pacific Seminar II

B.S. in Geophysics

Fall:	Physical Geology, Calculus I, Pacific Seminar I, elective
Spring:	Principles of Physics I, Calculus II, Pacific Seminar II, elective

B.A. in Physics

Fall:	Calculus I, General Chemistry, Astronomy, Pacific Seminar I
Spring:	Principles of Physics I, Calculus II, General Chemistry, Principles of Physics, Pacific Seminar II

Course Offerings

PHYS 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. *Prerequisite: passing score on the Intermediate Algebra placement test or one of the following math courses: MATH 5, 33, 37, 39, 41, 51, or 53.*

PHYS 23. General Physics I (5)
The physics of mechanics and motion. Rotation Fluids. Thermodynamics. The course includes laboratory work. *Prerequisite: a passing score on the pre-calculus placement test or one of the following math courses: MATH 39, 41, 45, 51, 53, or 55.*

PHYS 25. General Physics II (5)
Acoustics and waves. Electricity and Magnetism, Quantum Mechanics and Relativity. The course includes laboratory work. *Prerequisite: PHYS 23.*

PHYS 27. Introduction to Computing for Physicists (1)
This course meets weekly and provides students with an introduction to the department's computer facilities and their use. After an introduction to unix, students learn basic programming in C++. The course then covers scientific software and libraries for data analysis and visualization. *Prerequisites: a passing score on the Intermediate Algebra placement test or one of the following math courses: MATH 5, 33, 37, 39, 41, 45, 51, 53, or 55.*

PHYS 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 involved. 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. *Prerequisite: High school level ability in algebra and geometry.*

PHYS 41. Astronomy (4)
A broad overview of modern astronomy, with emphasis on conceptual understanding. Topics include constellations, motions of stars and planets, the solar system, stellar evolution, pulsars, black holes, quasars, galaxies and cosmology. The course includes some outdoor observing activities and laboratory work. *Prerequisite: a passing score on the Intermediate Algebra placement test or one of the following math courses: MATH 5, 33, 37, 39, 41, 45, 51, 53, or 55.*

PHYS 53. Principles of Physics I (5)
Kinematics, dynamics, oscillations, wave motion and fluids. Laboratory. *Prerequisite: MATH 51 and 53 (or concurrent enrollment) or 55 or 57. High school physics or PHYS 23 are recommended.*

PHYS 55. Principles of Physics II (5)
Thermodynamics, electricity, magnetism, light and optics, atomic and nuclear physics, particle physics and cosmology. Laboratory. *Prerequisites: PHYS 53.*

PHYS 57. Modern Physics (4)
Special relativity; quantization; wave/particle duality and the uncertainty principle; solution and interpretation of simple Schroedinger equations; atomic structure; introduction to nuclear and elementary particle physics. Laboratory. *Prerequisite: PHYS 55 and MATH 55 and 57 (or concurrent enrollment).*

PHYS 101. Electricity and Magnetism (4)
Theory of electrostatic and electromagnetic fields and their interaction with matter. Practical applications. Development of Maxwell's equations. *Prerequisites: PHYS 55, MATH 55 and 57 (or concurrent enrollment).*

PHYS 102. Electrodynamics (4)
Maxwell's equations. Propagation of electromagnetic radiation. Transmission lines, wave guides, antennas. Applications. *Prerequisites: PHYS 57, 101 and MATH 57.*

PHYS 105. Optics (4)
A modern introduction to optics. Topics include geometrical optics, optical instrumentation, the wave nature of light, polarization, diffraction, lasers and fiber-optics. Includes laboratory. *Prerequisite: PHYS 55 and MATH 55.*

PHYS 125. Molecular Nanotechnology (4)
Molecular nanotechnology (MNT) is a rather young discipline, which came up in the nineties. Nevertheless, MNT has gained so much importance within the last years that universities at all rankings have introduced or are going to introduce MNT teaching programs. Predictions say that MNT will change our lives and society more than computer technology and electricity have done together.

The course will provide an overview of MNT. It will show that the nano regime is so different from other regimes because both classical and quantum effects can be active thus leading to unique properties of nano devices. MNT is a highly interdisciplinary science, which will be reflected in the course by making reference to physics, chemistry, biology, pharmacy, and engineering. Applications of MNT as they are already in use today and as they are planned for the future will be discussed. Also, the implications of MNT for our society will be considered.
Prerequisites: CHEM 25 or PHYS 55.

PHYS 141. Astrophysics (4)
Introduction to the physics of stars, galaxies and the universe. Topics include: observational properties of stars, stellar structure, star formation, stellar evolution, close binary stars, white dwarfs, neutron stars and black holes, observational properties of galaxies, galactic dynamics, interstellar and intergalactic medium, expansion of the universe and cosmology. *Prerequisites: PHYS 55 and MATH 57.*

PHYS 151. Advanced Physics Laboratory (4)
Experimental studies in modern physics, especially ones which require the design, construction and use of special apparatus. *Prerequisite: PHYS 57.*

PHYS 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: PHYS 55, MATH 55.*

PHYS 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. *Prerequisites: PHYS 55 and MATH 55.*

PHYS 181. Classical Mechanics (4)
Newtonian mechanics, Hamilton's principle, Lagrangian and Hamiltonian dynamics. Oscillations, central force motion, waves, nonlinear systems and chaos. *Prerequisites: PHYS 55, MATH 57.*

PHYS 183. Quantum Mechanics (4)
An introduction to quantum mechanics as it contrasts with classical physics. Topics include the Wave Particle Duality, Dirac Formalism, Postulates of Quantum Mechanics, Two Level Systems in Spin 1/2, The Harmonic Oscillator, Angular Momentum, The Hydrogen Atom. *Prerequisites: PHYS 57, MATH 57.*

PHYS 191. Independent Study (2-4)

PHYS 193. Special Topics (4)

PHYS 197. Undergraduate Research (2-4)

Political Science

Professors: Benedetti, Hatch

Associate Professors: Klunk (Chair), Ostberg, Sample

Assistant Professor: D. Sylvester

Department Phone: (209) 946-2524

Website: www.pacific.edu/college/best_political

Political Science seeks to understand, to explain, and - sometimes - to evaluate how humans live and work together in public ways. To do so, political scientists focus on what happens in and around government and politics, how humans cooperate with and how they fight against one another, why some nations succeed and others fail. They study voting and revolutions, the Supreme Court and the United Nations, the idea of justice and the nature of power, India and San Francisco, environmental policy, criminal law and gender roles - all in the pursuit of clearer knowledge about the characteristic ways humans interact in the public sphere.

Students majoring in Political Science ought to gain from it a well-grounded liberal education focused on the knowledge and skills necessary to understand the public realities of their world. They will have looked in depth at the fundamental concepts and values that underlie human decision-making, have examined the social and political structures and processes through which such decisions are shaped and carried out, have learned to analyze complex organizational and legal phenomena, have surveyed the inventiveness of cultures in devising a variety of ways to provide government. They will also have become familiar with the contributions to their understanding that they can gain from closely-related social sciences, such as economics, history, anthropology, psychology and the like. In acquiring this knowledge, Political Science majors will be challenged to extend their analytical and research skills, to polish their talents for written and oral communication, and to sharpen their abilities for rigorous and independent judgment.

Career Opportunities

The skills and experiences developed through a Political Science program are central to a great variety of career fields, and our majors go on to work as journalists and lawyers, managers and teachers, politicians and administrators. One out of every six Americans now works for one level of public government or another, and Political Science majors can have a head start in such fields because of their understanding of how these systems work. Many of our graduates go on to law school, and Political Science serves as an ideal major for that training, as well as essential preparation for graduate study.

Political Science majors with an emphasis in Political Economy share most of the same career possibilities as general Political Science majors. In addition, they will be able to take advanced studies toward careers in government and business which require a background in economic analysis and policy formulation.

Internships and United Nations Program

Special opportunities are provided for internships in public agencies in Stockton, Sacramento, San Francisco and in Washington, D.C. (as well as abroad). Many of these opportunities have a legal focus. Course credit may be earned for these internships.

Pacific students who qualify may take a semester devoted to the study of the United Nations through a cooperative arrangement with Drew University. In this program students spend two days a week at U.N. Headquarters in New York for seminars, observations, and research.

Typical First Year Program

A recommended pattern of courses for Political Science majors in their first year would include POLS 41—U.S. Government and Politics and POLS 51—International Politics. Political Science majors would also do well to take course in social science disciplines that are related to the study of politics and government, for example introductory economics, U.S. or world history, or geography.

Political Science Major Requirements

For a Bachelor of Arts in Political Science, a student must successfully complete the following requirements:

POLS 41	U.S Government and Politics
POLS 51	International Politics
POLS 131	Approaches to Political Theory
POLS 151	Principles of Comparative Politics
POLS 119	Government in Action: Public Policy Analysis
POLS 133	Quantitative Methods
POLS 189	Political Science Capstone Seminar

Three other courses in political science numbered 100 or higher.

POLS 187	Political Science Internship
	Or
POLS 197	Undergraduate Research in Political Science
	Or

An approved study-abroad program or other approved offering in experiential education

Political Economy Emphasis

Students interested in an emphasis in Political Economy within the Political Science major should see the departmental adviser for Political Economy, Professor Hatch, about their programs.

Pre-Law Program

The Department of Political Science also offers a program and minor in Pre-Law. For a complete description of that program, please see the section on Cross-Disciplinary Majors and Programs.

Political Science Minor

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 Pacific. Students taking a minor in Political Science must complete POLS 11, 41 and 51 (or their approved equivalents), and three additional courses at the upper-division level. Students who wish to pursue the minor should see the department chair.

Course Offerings

Lower-Division

POLS 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.

POLS 41. U.S. Government and Politics (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 POLS 31 or equivalent. This course satisfies the state requirement on the U.S. Constitution.

POLS 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.

Upper-Division U.S. Government and Politics

POLS 104. Urban Government (4)
The structure and operation of urban units of government with emphasis on inter-governmental relations in the United States. Problems of finance, adequacy of services and planning for future growth are included.

POLS 106. Calif. Government and Politics (4)
An overview of California governmental structures and selected political, economic and ecological conflicts, both historic and contemporary.

POLS 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.

POLS 110. The U.S. 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.

POLS 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.

POLS 119. Government in Action: Public Policy Analysis (4)
Analysis and evaluation of how government makes and implements policy at various levels, including state and local. *Prerequisite: POLS 41.*

POLS 120. The Judicial Process (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.

POLS 122. Constitutional Law (4)
A study of the development of the American Constitutional System through court cases. Law school techniques and methods are stressed.

POLS 124. Constitutional Law: Civil Liberties (4)
The analysis of the rights and guarantees contained in the Bill of Rights and other constitutional and statutory provisions.

POLS 126. Criminal Law (4)
This course focuses on the concepts, principles and problems of substantive criminal law.

POLS 128. The Administrative State (4)
An examination of the administrative arm of government, including discussions on the proper role and organization of public administrative units and empirical explorations of the way administrative units actually operate.

Political Theory and Methodology

POLS 130. Western Political Theory (4)
The nature of political thought from Jewish antiquity to the nineteenth century.

POLS 131. Approaches to Political Theory (4)
Examination of the most important approaches to political theory and normative political theorizing used by political scientists and the application of these approaches to significant works of political theory.

POLS 132. Modern Political Theory (4)
Nineteenth- and 20th Century political theory in the Western developed world.

POLS 133. Political Science Research (4)
Development of skills needed for conducting and understanding research in political science, including research design, critical statistical techniques and computer applications. *Prerequisites: POLS 41, POLS 51 or instructor permission.*

Also:

POLS 160. Theories of International Politic (4)
Intensive study of the principal analytical and normative theories of international politics and behavior.

POLS 141. W. European Comparative Politics (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 Germany; 3) contemporary problems facing the advanced capitalist states of Western Europe. *Prerequisite: POLS 11 or permission of the instructor.*

POLS 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.

POLS 148. Politics of the Middle East (4)
Comparative study of contemporary politics in the Middle East, emphasizing the problems of development, and the background, issues and political forces involved in the Arab-Israeli conflict.

POLS 150. Political Development (4)
A general introduction to the problems and politics of post-colonial or lesser developed countries, including case studies from Asia, Africa and Latin America.

POLS 151. Principles of Comparative Politics (4)
Examination of the most important analytical approaches used by political scientists in the comparative analysis of political systems and application of those approaches to selected examples. *Prerequisites: POLS 41, 51 or permission of instructor.*

POLS 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.

International Politics

POLS 160. Theories of International Politics (4)
Intensive study of the principal analytical and normative theories of international politics and behavior. *Prerequisite: POLS 51 or permission of the instructor.*

POLS 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: POLS 51 or permission of the instructor.*

POLS 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: ECON 55 or permission of the instructor.*

POLS 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 nonviolent conflict management now in use, including international law, international regimes, negotiation and arbitration. *Prerequisite: POLS 51 or permission of the instructor.*

POLS 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 Russia, China, India, Britain, Japan, France, Germany and the United States. Prior completion of a basic course in political science is recommended.

POLS 170. U.S. 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; dE9tente and arms control; foreign economic policy; and human rights. *Prerequisite: POLS 11 and 41.*

POLS 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.

POLS 187a, b. Political Science Internship (4)
Supervised experience in an approved government or political setting to be contracted on an individual basis. POLS 187b can be either an experience in a second government or political setting or a second experience in the same setting focused at a more advanced level than POLS 187a. The course may be repeated for credit, but will apply toward major requirements only once. *Prerequisites: Completion of at least 60 units, overall GPA of 2.0, POLS 41, department permission.*

POLS 187c. Pre-Law Internship (4)
Supervised experience in an approved legal or judicial setting to be contracted on an individual basis. Prerequisites: *Completion of at least 60 units, overall GPA of 2.0, POLS 41, department permission.*

POLS 189. Capstone Seminar (4)
A seminar focused on recent and significant work in the major political science subfields: American Politics, Political Theory and Methodology, Comparative Politics, and International Politics. *Prerequisite: Open to majors in Political Science with senior standing only, or by permission of the instructor.*

POLS 191. Independent Study (2-4)
Open only to political science majors with a "B" average in their work in political science.

POLS 193. Special Topics (4)

POLS 197. Undergraduate Research in Political Science (2-4)
Students will acquire skills in the design and implementation of political science research while serving as a research assistant to a faculty member or conducting an independent research project under the supervision of a faculty member. *Prerequisite: Junior or senior standing as a political science major and permission from the department.*

Psychology

Professors: Beauchamp, Hannon (Chair), Howells

Assistant Professors: Borrero, Kohn

Adjunct Professors: Binder, Dinwiddie, Hall, O'Brien

Department Phone: (209) 946-2133

Website: www.pacific.edu/cop/psychology

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, 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, including increased understanding of behavior, career preparation and post-graduate studies preparation.

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.

Career Preparation

The department offers 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, with skills in the use of psychological approaches such as behavior analysis in the personnel, training and performance management areas of business and government.

Graduate and Professional School Preparation

Students interested in entering Masters 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.

Core Curriculum

All students majoring in psychology must complete the following six courses:

PSYC 25	Foundations of Psychology
PSYC 31	Introduction to Psychology
PSYC 53	Behavior Change I
PSYC 103	Statistical Inference in Behavioral Sciences
	OR
MATH 35	Elementary Statistical Inference
PSYC 105	Experimental Psychology
PSYC 125	History and Systems of Psychology

Plus one laboratory research course to be chosen from the following:

PSYC 107	Psychology of Learning
PSYC 109	Physiological Psychology

Plus one field research course to be chosen from the following:

PSYC 129	Developmental Psychology
PSYC 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 in PSYC 197-Independent Research, PSYC 87/187-Internship or PSYC 89/189-Practicum. In total, the Psychology major must take at least 11 letter-graded courses (43 units) in psychology. More psychology courses may be taken, up to a total of 60 units (including transferred courses), if the student so desires. Majors must accumulate at least a 2.0 GPA in all letter-graded University of the Pacific psychology courses.

Requirements for the Minor in Psychology

A minor in psychology requires completion of PSYC 53, PSYC 103 or MATH 35, and three non-transferred upper-division courses (numbered 100 or above) selected in consultation with the minor adviser. Completion of a minimum of 20 units is required for the minor. Fieldwork, practicum, and internship courses do not count toward completion of the minor. Courses completed with grades below C- are not accepted toward completion of the minor. Students must maintain a 2.0 GPA in minor courses.

Requirements for the Child Psychology Minor

A minor in child psychology requires completion of PSYC 29, PSYC 53, PSYC 131, and two of the following courses: PSYC 154, PSYC 155, SPED 123, or PSYC 87d/187d (4 units). Completion of a minimum of 19 units is required. Courses completed with grades of C- or below are not accepted toward completion of the minor.

Requirements for the Lifespan Development Minor

A minor in lifespan development requires completion of PSYC 29, PSYC 131, PSYC 167, and two of the following courses: ANTH 53, PSYC 31, PSYC 66, PSYC 87d/187d (4 units), or SOCI 127. Completion of a minimum of 20 units is required. Courses completed with grades of C- or below are not accepted toward completion of the minor.

Typical First Year Program

Complete PSYC 25, PSYC 31 and PSYC 53.

Complete the basic mathematics skills requirement (if not met by Mathematics Placement Test).

In selecting courses to meet GE requirements, try to choose from the Biology, Literature, Mathematics and Philosophy offerings.

Academic Structure – Increased Understanding of Your Own and Others' Behavior

In addition to the eight 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 sub-fields of psychology as experimental, developmental, personality and social psychology.

Career Preparation - Applied Behavior Analysis

Students selecting the applied behavior analysis program are required to complete the courses specified for the major, plus advised to complete the following: PSYC 107-Psychology of Learning, PSYC 158-Behavioral Assessment and PSYC 160-Behavioral Analysis in Organizations. 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 behavioral techniques such as observation, reinforcement and data analysis; c) developing and implementing behavior analysis programs; and d) interacting effectively with community and social service agencies.

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

Eberhardt School of Business for prerequisites required for each course):

BUSI 31	Principles of Financial Accounting
BUSI 107	Marketing Management
BUSI 109	Management and Organizational Behavior
BUSI 134	Conflict Management
BUSI 141	Marketing Research
BUSI 147	Consumer Behavior
BUSI 170	Human Resources Management
BUSI 173	Designing Effective Organizations
BUSI 175	Leadership and Change

Students should also take PSYC 89-Internship or PSYC 87-Practicum courses in a business setting.

Graduate and Professional School Preparation

Students planning to do graduate study in psychology or to use psychology as a basis for advanced professional study may select from the following sequence of courses in addition to the major requirements: PSYC 89d Research Assistantship Practicum, MATH 130-Topics in Applied Statistics and PSYC 183-Research Design. It is strongly recommended that major courses include a representation of the basic subfields of psychology as well as additional PSYC 197-Independent Research and PSYC 87-Practicum 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 department's Psychology Clinic.

Course Offerings

PSYC 25. Foundations of Psychology (2)
Orientation to the psychology major program; acquisition of skills in using library, reference database, and web-based resources; training in APA technical writing style; exploration of career options in psychology and related fields; review of ethical issues in research with human participants; overview of the ethical code of psychologists. *Prerequisite: permission of the instructor. Recommended for first-year students. Required for the major.*

PSYC 29. Child Development (4)
An introduction to and an overview of human structural and behavioral change from conception through 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. *Recommended for sophomores. Does not count toward major.*

PSYC 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. *Required for psychology majors; recommended in freshman year.*

PSYC 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. *Required for psychology majors; recommended for freshmen.*

PSYC 66. Human Sexuality (4)
Study of the biological, psychological and cultural bases of human sexual behavior. Topics will include female and male sexual anatomy and physiology; love and communication; sexual behavior patterns; homosexuality and bisexuality; contraception, pregnancy and childbirth; sexual difficulties and sex therapy; and sexually transmitted diseases. Reviews changes in sexual functioning throughout the life span. Explores the development of male and female gender roles and the effect of gender roles on various aspects of life. *Open to freshmen. Does not count toward major.*

PSYC 87, 187. Internship (2 or 4, 2 or 4)
Experiences in a work setting, to be contracted on an individual basis. PSYC 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.*

PSYC 87a, 187a. Business and Industrial Internship (2 or 4, 2 or 4)
Supervised experience in performance management and training in business and industrial settings.

PSYC 87b, 187b. Developmental Disabilities Internship
Supervised experience in agencies providing services to the developmentally disabled.

PSYC 87c, 187c. Educational/Training Internship
Supervised experience in educational and training institutions and agencies.

PSYC 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.

PSYC 87e, 187e. Mental Disabilities Internship
Supervised experience in agencies providing services to the mentally disabled.

PSYC 87f, 187f. Autism Internship
Supervised experience working with autistic children. *Prerequisite: PSYC 53.*

PSYC 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. PSYC 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.*

PSYC 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.

PSYC 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.

PSYC 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.

PSYC 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.

PSYC 89e, 189e. Teaching of Psychology Practicum
Students will acquire skills in the development and use of Personalized Systems of Instruction, discussion groups or laboratories while serving as assistants to faculty teaching departmental courses.

PSYC 103 Statistical Inference in Behavioral Sciences (4)
The applications and limitations of statistical methods of inference in behavioral research. Topics include measurement, data collection, parameter estimation and confidence intervals, hypothesis testing, Type I and Type II errors and power. Parametric and non-parametric data analysis techniques and graphic analysis will be studied, including chi square, t-test and analysis of variance. Students will learn how to use "eyeball" estimation procedures to facilitate understanding of statistical concepts, and how to use spread sheet and statistical computer programs for data analysis. *Prerequisite: MATH 3 or appropriate score on the Mathematics Placement Test. PSYC 103 (or MATH 35) required for psychology majors; recommended in sophomore year.*

PSYC 105. Experimental Psychology (5)
Introduction to research methodology in the field of psychology. The course covers experimental design and statistical analysis appropriate to various designs. Conducting reviews of research literature, writing research proposals and reports, and research ethics will be covered. All students will do word processing and statistical analysis using computer programs. All students complete an individual experimental research project. *Prerequisite PSYC 103 or MATH 35. Required for psychology majors; recommended in sophomore year; not open to freshmen.*

PSYC 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: PSYC 105 or permission of the instructor.*

PSYC 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: PSYC 105 or permission of the instructor.*

PSYC 110. Psychoactive Drugs and Behavior (4)
An intensive study of how drugs affect psychological processes and behavior, covering neuroanatomy, neuron physiology, basic psychopharmacological terminology, commonly used and recreational drugs, major psychotherapeutic drugs and the interaction between drug treatments and various psychotherapeutic and behavior change techniques. *Prerequisite: sophomore standing or above.*

PSYC 111. Abnormal Psychology (4)
Study of the causes, classification and treatment of abnormal behavior. The class will be of interest to any student who is curious about people and what they do, especially the unusual things that people do. The class addresses the distinction between being different and having a mental disorder, what we can change and what we can not change, psychological testing, the DSM classification system, the role of genetic factors in abnormal behavior as well as the current status of empirically validated psychosocial and pharmacological treatments for mental disorders. The class is highly recommended for any student who aspires to go into clinical psychology, marriage family counseling, child psychology, forensic psychology, social work, or clinical psychopharmacology.

PSYC 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: junior standing and PSYC 105 or permission of the instructor.*

PSYC 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: PSYC 105.*

PSYC 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.*

PSYC 133. Adulthood and Aging (4)
This course provides an overview of developmental issues occurring in the adult and aging population. Topics covered include developmental theories, research techniques, and biological, psychological, and sociological aspects of aging. Some emphasis will be placed on providing psychological services to the aging population. Some field experiences in nursing homes will be part of the course. *Prerequisite: sophomore standing or above.*

PSYC 153. Behavior Change II (4)
A sequel to Behavior Change I that focuses on contemporary issues in 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. *Prerequisite: PSYC 53.*

PSYC 154/254. Child Mental Health (4)
A study of the causal factors related to the development of mental health problems in children, with an emphasis on the behavioral learning histories and cognitive behavioral patterns associated with specific disorders. Socio-cultural contributions to mental health are also stressed. Behavioral and cognitive behavioral techniques are presented that are used to treat disorders commonly diagnosed in childhood. Students also learn strategies for communicating with children. *Prerequisite: PSYC 53.*

PSYC 155/255. Couples and Family Therapy (4)
An introduction to marital and family therapy theory and practice. Cognitive behaviorism is used as the foundation, and students also learn a broad systems perspective. Students are familiarized with the predominant family therapy styles in current use, as well as numerous family therapy strategies. Students take part in frequent role-play activities, acting the parts of families and family therapists. *Prerequisite: PSYC 53.*

PSYC 156/256. Behavioral Medicine/ Health Psychology (4)
A survey class on the overlapping fields of behavioral medicine and healthy psychology, two of the fastest growing fields in contemporary psychology. Focuses on a biopsychosocial model of illness, how this model compares to a more traditional biomedical model of illness, and the applications of a biopsychosocial model to the treatment and prevention of chronic illnesses such as coronary heart disease, cancer, arthritis, AIDS/HIV, and stroke. Other topics include health promotion, chronic pain, the disease prone personality, medical compliance, and the doctor-patient relationship. Of interest to any student who aspires to become a health care professional in health psychology, clinical psychology, medicine, pharmacy, physical therapy, or nursing. *Upper division standing recommended. Prerequisite: PSYC 53.*

PSYC 158/258. Behavioral Assessment (4)
An overview of behavioral assessment techniques. Specific topics to be covered include data collection, inter-observer agreement, social validity, treatment integrity, functional assessment, stimulus preference assessment, indirect assessment techniques, and psychometric assessment procedures. *Prerequisite: PSYC 53.*

PSYC 160/260. Behavior Analysis in Organizations (4)
Covers the application of basic principles of behavior in business, industrial, and organizational settings. Student will learn to apply fundamental principles of behavior analysis to solve organizational problems such as training, safety, productivity, and quality deficits. In-depth examination of performance-based pay systems and participative/open-book management is also included. *Prerequisite: PSYC 53.*

PSYC 166. Psychology of Personality (4)
Survey of contemporary personality theories and research. Focuses on the study of individual difference and how these differences are explained and measured using different personality assessment devices. Recommended for students aspiring to graduate study in clinical psychology, school psychology, marriage and family counseling, child development, or social work. Also of interest to those who want to learn more about themselves and the diversity of the species. *Upper division standing recommended. Prerequisites: PSYC 105 and 111.*

PSYC 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.

PSYC 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). This course is primarily for psychology majors and is taught with an emphasis on research methods in social psychology. *Prerequisite: MATH 35 or PSYC 103.*

PSYC 183/283. Research Design (4)
Design and analysis of research using single subjects and groups. *Prerequisites: PSYC 105, and permission of the instructor.*

PSYC 185A/185B. Psychology Clinic Internship (2)
Clinic internship experience in the Pacific Psychology Clinic. Undergraduate psychology majors selected competitively work alongside Psychology graduate students doing clinical services (therapy, psychology/forensic testing, biofeedback, and behavioral assessment and intervention) under intensive supervision, with children and adults. Students must commit to enrolling in both fall and spring semesters. *Prerequisite: Permission of the instructor.*

PSYC 191. Independent Study (2-4)

PSYC 193. Special Topics (1-4)

PSYC 195. Seminar (4)

PSYC 197. Independent Research (2 or 4)

PSYC 220. Clinical Neuropsychology (4)
This course focuses on the relationship between human brain functioning and behavioral/ psychological functioning. The primary emphasis is on the diagnosis and treatment of brain dysfunction in humans. Methods of evaluating clients for the presence of various types of brain dysfunction using psychological testing are studied in depth, along with corresponding neuroanatomy and neuropathology. Research techniques for developing a clearer understanding of both normal and abnormal brain functioning is studied. *Prerequisite: PSYC 109 or permission of the instructor.*

PSYC 251. Behavioral Treatments/Applications (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 covered, as are current empirically validated treatments for various clinical disorders. *Prerequisite: Open only to graduate students; by permission only.*

PSYC 253. Supervising & Teaching Behavior Change (4)
Introduces graduate students to the role of practicum supervisor and instructor. Under the supervision of the PSYC 53 course instructor, students develop, sustain, and evaluate their own interventions at preappoved externship sites. Students conduct bi-weekly discussion groups providing undergraduate students enrolled in PSYC 53 with additional resources for the course. Students meet weekly with the instructor to discuss practicum concerns and teaching responsibilities. Students gain practical experience carrying out independent research projects, which are often presented at research conferences, as well as teaching experience. All responsibilities are carried out under the supervision of the PSYC 53 instructor. *Prerequisites: Open PSYC 251 and PSYC 258, OR extensive training in behavior analysis AND instructor approval.*

PSYC 285 A,B,C,D Clinical Internship I (2)
Clinical experience in the University of the Pacific Psychology Clinic. Familiarization and practice in the administration, scoring, and interpretation of basic psychological tests, including intelligence tests for adults and preschoolers, projective tests, language scales, psychiatric scales, personality inventories and various behavior rating scales. Interviewing and testing skills with adults, adolescents, and children are refined. Intern assumes more responsibility in interviewing and administering psychological tests under supervision, and practices writing psychological evaluation reports. Interns are assigned psychotherapy cases under supervision. Students who have completed PSYC 175/275 will also work on case involving biofeedback. *Prerequisite: Open only to graduate students; by permission only.*

PSYC 291. Independent Graduate Study (2-4)

PSYC 293. Special Topics (1-4)

PSYC 295. Graduate Seminar in Psychology (4)

PSYC 297. Independent Graduate Research (2 or 4)

PSYC 299. Thesis (2 or 4)

Religious & Classical Studies

Professor: Bowsky

Associate Professors: Kraynak, Randels (Chair), Storch

Assistant Professor: Kalleres

Visiting Lecturer: Gwasdoff

Department Phone: (209) 946-2161; (209) 946-2498

The Department of Religious & Classical Studies offers students the opportunity to study belief systems, texts, and languages in both modern and ancient contexts. Some courses focus on the role of religion in human history, experience, thought, and action, while others focus on the cultures of Ancient Greece and Rome, and their lasting effects on the modern world. Religion has been and continues to be a major factor in the development of cultures and institutions, and is significant to individuals as they examine ultimate questions and how they should live. Citizen-leaders need an understanding of religion, and of the origins of Western civilization. A typical course in the Department includes students from various backgrounds and academic disciplines, thereby

affording significant opportunity for inter-disciplinary discussion.

The Department offers a major in Religious Studies and minors in Religious Studies and Classical Studies. Additionally, the Department administers a Liberal Studies Major which is described in the section on cross-disciplinary majors.

Career Opportunities

A major in Religious Studies provides groundwork for students to be citizen-leaders in various careers. These possible career paths include ministry or a church-related vocation, teaching, journalism, publishing, film, law, government, business, non-profit organizations, social work, nursing, and medicine. A minor in Religious Studies or Classical Studies can also provide groundwork for these careers while supplementing a student's major field of study.

Requirements for the Religious Studies Major

The Religious Studies major requires 40 academic units of credit. Four departmental courses are required, as is a "collateral" course from outside the Department. (See the Department for a current list of approved collateral courses.) This collateral course and the remaining departmental courses are chosen in consultation with the student's faculty adviser. Various emphases are possible (e.g., Asian religions, Bible, Ethics, and Greco-Roman world). The required courses are:

RELI 23	Hebrew Bible
or	
RELI 25	New Testament and Christian Origins
RELI 34	Introduction to Religion
CLAS 51	Classical Mythology
and	
RELI 196	Religious Studies Seminar

The Religious Studies Minor

A minor in Religious Studies requires a minimum of 20 units in the Department:

RELI 23	Hebrew Bible
or	
RELI 25	New Testament and Christian Origins
RELI 34	Introduction to Religion
RELI 134	World Religions

Two Religious Studies electives.

Note: No more than four units will be accepted as transfer units in completing the minor.

The Classical Studies Minor

The minor in Classical Studies requires the following core courses:

A course in language (GREK 11a, LATN 11a, or LATN 151)

A course in Classical Mythology (CLAS 51 or CLAS 115)

Students will also complete three courses from the list below of Classics in English courses, or may substitute courses in Greek and Latin.

CLAS 100 or 102 (History)

CLAS 110 or 112 (Literature in Translation)

CLAS 120 or 122 (Sexuality)

CLAS 130 or 132 (Art and Architecture)

CLAS / GREK / LATN 191 (Independent Study)

CLAS 193 (Special Topics)

Course Offerings

Religious Studies

RELI 23. Hebrew Bible (4)
The Hebrew Bible is a central book of western culture, serving as a foundation for Judaism and Christianity. This course surveys the biblical literature, familiarizes students with critical methods for the study of the Bible, situates the Bible within the literature and culture of the ancient Near East, and discusses the religion of ancient Israel. Issues of history and archaeology will also be addressed.

RELI 25. New Testament and Christian Origins (4)
This course offers a socio-historical and literary introduction to the writings of the earliest Christians. It will emphasize the importance of the historical context of these writings and will investigate the ways these texts fit into Mediterranean cultures. Topics include: the Jewish origins of the "Jesus movement;" the formation of early Christian communities and their varying patterns of belief and practice; the development of oral and written traditions about Jesus, especially in the gospels and letters of Paul; and various images of Jesus and their significance. Students will learn how to read ancient texts closely, gain an understanding of the various methods of scholarly biblical interpretation, and learn how to evaluate these interpretations critically.

RELI 27. Portraits of Jesus (4)
In this course, we will examine some of the different "Jesuses" that have emerged from the "Quest for Jesus" through the ages, including historical studies, art, and literature. Was Jesus an itinerant, charismatic teacher? A healer and miracle-worker? A social revolutionary? Or is he an ahistorical figure on whom we have projected our own needs and desires for two millennia?

RELI 34. Introduction to Religion (4)
What is religion? Is it a belief in God? Is it a realization of the limits of human powers? Is it a set of moral laws and regulations, or all of the above? But how about religions which do not have moral laws? How about religions where there is no God? Then, what is religion, indeed? This course will explore the beginning of human activities associated with religion such as calendars and myths. Then, it will move on to its more pronounced forms such as rituals of birth, death, hunting and healing known in Neolithic cultures. It will then discuss the main world religions which have evolved from these initial religious impulses. Methods by which scholars study religions, impacts which religious beliefs had upon human societies and the future of human spirituality present another set of problems which will be dealt with in the progression of this course.

RELI 35. 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.)

RELI 43. Social Ethics (4)
This course will examine several contemporary problems in social ethics from the standpoint of religious traditions and philosophical perspectives. It will introduce ethical and religious concepts and consider such issues as affirmative action, pacifism and just war, civil disobedience, and capital punishment. We will discuss what selected thinkers say about such issues, and how they reach their conclusions in light of their theological, philosophical, and anthropological convictions.

RELI 44. Sex, Sin, and Salvation (4)
This course will explore and analyze sexuality and gender in terms of ethics and religion. The course will focus on historical and contemporary Christian perspectives, with some attention to other religious traditions and philosophical perspectives. Topics will include such issues as sexual ethics, homosexuality, sexuality and spirituality, gender roles and connections between gender and ethical perspectives.

RELI 70. 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. It will move from the colonial experience through the "great awakenings," to the emergence of new religions and cults, the revolutions of the sixties, the revival of conservative Christianity in the American political spectrum and ecology as the "new awakening."

RELI 128. Social Topics in Early Christianity (4)
A study of one or more social issues prominent during the early stages of Christianity. Topics will vary according to the interests of faculty and students.

RELI 130. The Christian Tradition (4)
An historical and theological analysis of Christian thought and practice. Content will vary depending upon instructor. It may, for example, focus on Christian origins in Greek and Hebrew culture, the Reformation Era, or issues of theological reinterpretation for the 21st century.

RELI 134. World Religions (4)
An examination of fundamental religious questions as developed in major religions of the world including primal religious experiences in African, Australian and Native American traditions. Also special attention to Islam, in context with other Abrahamic traditions, as the fastest growing religion in 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.

RELI 135. Asian Religious Traditions (4)
A study of the traditional religions of India, China, Tibet and Japan, attempting to delineate the spirituality, beauty, and wisdom of these traditions. It will trace the rich historical and cultural heritages of Hinduism, Buddhism, and Confucianism, the Taoist ways of achieving harmony in the world, and the melding of nature and ritual life in Shinto. Each semester one or two of these religions will be studied in depth to investigate how they influence society, politics and culture in the countries where they spread. The academic approach is supplemented by practical learning of meditation, energy-regulations and ritual.

RELI 140. Religion and Politics (4)
This course will explore the relationships between religious convictions and political thought and action. The course will concentrate on selected eastern or western religious traditions. Topics of discussion may include the state, individual liberty, economics, and war. Readings will introduce historical and contemporary religious and philosophical perspectives.

RELI 142. Business Ethics (4)
This course will critically examine some of the social, ethical, economic, and religious foundations of business activity, and consider some of the contemporary problems with, and possibilities for, business practice. Course topics may include: an historical analysis of the rise of capitalism; religious views of economics and responses to capitalism; the role of business in the larger society; the relationship between the individual and the organization; and the prospects for human community in a capitalist system.

RELI 145. Biomedical Ethics (4)
A study of the complex issues emerging from the revolutionary developments in biology and medicine, including human experimentation, abortion, genetic manipulation, in vitro fertilization, death and dying, health care delivery, and organ transplants.

RELI 146. Technology, Ethics, & Religion (4)
This course will offer historic, philosophical, and religious perspectives on science and technology. It will endeavor to help students understand the impact of science and technology on our moral and religious traditions and institutions, and how those traditions and institutions in turn impact science and technology. It will consider how technology addresses social problems, and the benefits, possibilities, and further problems that it produces.

RELI 171. Religion and Cinema (4)
A study of the way religious ideas, institutions and figures are presented on film. The course involves screening and analyzing various films. The scope of the course will be international and intercultural, but the majority of the images will inevitably be Western. The course intends to demonstrate the power of cinematic images to define, enrich and sometimes pervert the religious sensibility.

RELI 172. Biblical Themes in 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, Camus, Hemingway, and John Updike.

RELI 196. Religious Studies Seminar (4)
Capstone seminar for majors. Focus of the study will vary from year to year according to interests of faculty and students (e.g. Religion and Nature, Christian Church Fathers, or Buddhism & Christianity).

Classics-in-English

CLAS 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. May include a special unit devoted to analysis of scientific and technical English, with specific attention to the vocabulary of the life sciences and pharmacy.

CLAS 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.

CLAS 51. Classical Mythology (4)
An introductory survey of the Greek and Roman myths of major importance in Western literature, art and music. May focus upon Greek mythology against the background of Roman, or Roman mythology against the background of Greek.

CLAS 100. History of Ancient Greece (4)
An introductory survey of the social, economic, political and military history of ancient Greece, from the very first Greeks and the age of the Homeric heroes to the legacy of Alexander the Great. We will focus on Greece and the Greeks as the mainstream culture, with marginal groups - such as women, slaves, non-citizens, and other ethnic groups - providing the context for the development of an exclusively Greek cultural identity. Offered in alternate years.

CLAS 102. History of Ancient Rome (4)
An introductory survey of the social, economic, political and military history of ancient Rome, from the legendary founder hero Aeneas to the height of Rome under the emperors. We will focus on Rome and the Romans as the mainstream culture, with marginal groups - such as women, slaves, non-citizens, and other ethnic groups - providing the context for the development of an exclusively Roman cultural identity. Offered in alternate years.

CLAS 110. Greek Literature in Translation (4)
An introductory survey of the literature of ancient Greece, read in English translation. Works studied will be representative of the extraordinary literary achievement of Greece in the genres of epic, tragedy, comedy, history, philosophical dialogue, and lyric poetry. Attention will be given to the perennial importance which the themes and questions raised have had for subsequent western literature. Offered in alternate years.

CLAS 112. Latin Literature in Translation (4)
An introductory survey of the literature of ancient Rome, read in English translation. Works studied will include the genres of comedy, epic, rhetoric, lyric poetry, history, the novel, and satire. Particular focus will be on these works' continued relevance and the extensive influence which Rome had on later western thought and literature. Offered in alternate years.

CLAS 115. Topics in Mythology and Religion (4)
In depth study of particular aspects of Greek and Roman mythology and religion. Students are expected to write about and discuss various topics, relevant to the ways that mythology and religion informed ancient life and/or has continued to influence modern culture. *Prerequisite: CLAS 51 or permission of the instructor.*

CLAS 120. Sexuality in Greek Society (4)
An introductory survey of the sexual attitudes and gender roles of women and men in ancient Greek society. We will focus on the suppression of female sexuality and the channeling of male sexuality, in the different places and times of ancient Greece, from the Homeric heroes and their women to the heirs of Alexander the Great. Offered in alternate years.

CLAS 122. Sexuality in Roman Society (4)
An introductory survey of the sexual attitudes and gender roles of women and men in ancient Roman society. We will focus on the subordination, exploitation, and suppression of male and female sexuality from the charter society of Aeneas to the politics and economy of the Roman Republic, and the philosophies and religions of the Roman Empire. Offered in alternate years.

CLAS 130. Greek Art and Architecture (4)
An introductory survey of the art and architecture of ancient Greece from the Bronze Age to the Hellenistic period. While exploring the stylistic development of Greek sculpture, painting and architecture, we will examine what this art can tell us about the ancient Greeks and how extensively it has influenced our world. Offered in alternate years.

CLAS 132. Roman Art and Architecture (4)
An introductory survey of the art and architecture of ancient Etruria and Rome from 600 B.C. to the 4th century A.D. We will explore the role of Roman art and architecture and its Etruscan influences in Roman life and history. Attention will be given to examples of Roman influence that surround us today. Offered in alternate years.

CLAS 197. Senior Research Project (4)
The culminating experience for Classics majors. Students will select a topic of personal interest and, with the supervision of faculty experienced in that area of study, will learn about traditional and current research methods and produce an original work. This will demonstrate the student's ability to formulate a relevant question, conduct necessary research, synthesize information, think critically and communicate these results in a manner appropriate to a graduate. Prerequisite: permission of the department, dependent on the student's ability to complete the requirements for graduation.

Greek

GREK 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. Offered every fall.

GREK 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. Offered every spring.

GREK 23. Intermediate Greek, Third Semester (4)
Selected readings with attention to grammar as needed. Students have the option of reading in appropriate Classical authors such as Herodotus or Plato, or in the Greek New Testament. *Prerequisite: second semester Greek, equivalent or permission.*

GREK 25. Intermediate Greek, Fourth Semester (4)
Selected readings with attention to grammar as needed. Students have the option of reading in appropriate Classical authors such as Homer or the Greek dramatists, or in Koine Greek. *Prerequisite: third semester Greek, equivalent or permission*.

GREK 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: GREK 25 or equivalent.*

Latin

LATN 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. Offered every fall.

LATN 11b. First-Year Latin, Second Semester (4)
Continuation of training in the basic reading and writing skills; appropriate readings from Latin authors. Offered every spring.

LATN 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.*

LATN 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.*

LATN 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: LATN 25 or equivalent.*

LATN 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 the instructor.*

Additional Courses

RELI 87.	**Internship**	**(2-4)**
GREK 93.	**Special Topics**	**(4)**
LATN 93.	**Special Topics**	**(4)**
CLAS 191.	**Independent Study**	**(2-4)**
GREK 191.	**Independent Study**	**(2-4)**
LATN 191.	**Independent Study**	**(2-4)**
RELI 191.	**Independent Study**	**(2-4)**
CLAS 193.	**Special Topics**	**(4)**
RELI 193.	**Special Topics**	**(4)**

Sociology

Professors: Childs, Lewis (Chair), J. Phillips

Assistant Professor: M. Hernandez

Department Phone: (209) 946-2101

Website: www.pacific.edu/sociology

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, government, 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 career goals. Whatever their emphasis may be, all students of sociology should acquire an appreciation of the manifestations of the human spirit and its milieu.

Career Opportunities

Undergraduate study in sociology leads to employment in a very wide variety of careers. Many take positions in the social services or social work, education, governmental administration and planning, the criminal justice system or public health. Others have gone into the business world or international affairs. Study in sociology provides an excellent base for further study in law, business administration, government, public health, urban planning and similar fields.

Typical First-Year Program

Students majoring in Sociology should use their freshman year to build a strong liberal arts background. The major program has been developed so that it can be completed within a minimum period of two years. Students wanting to explore interests in a sociology major may want to take any of several sociology courses included in the general education program. First-year students in the major begin with SOCI 71, Foundations of Sociology and SOCI 79, Social Psychology. A typical first-year program in the major might look like this:

Fall:
- SOCI 71-Foundations of Sociology (4)
- SOCI 79-Social Psychology (4)
- General Education or Pacific Seminar I (4)
- General Education (perhaps U.S. History or History of Western Civilization) (4)

Spring:
- SOCI 171-Social Research Methods (4)
- SOCI 175-Organizations and Social Structure (4)
- General Education (perhaps MATH 35 or MATH 37) (4)
- General Education (4)

Academic Requirements

The completion of a minimum of ten courses and 40 units is required for the major.

Core Curriculum

SOCI 71	Foundations of Sociology
SOCI 79	Social Psychology
SOCI 171	Social Research Methods
SOCI 175	Organizations and Social Structure
SOCI 177	Theories of Society and Culture
SOCI 179	Capstone Seminar

SOCI 71 and SOCI 79 are strongly recommended prior to SOCI 171 and SOCI 175. SOCI 179 is strongly recommended as the final course in the core sequence and should be taken in the spring semester of the senior year. Majors must also complete the major statistics requirement by taking SOCI 153-Quantitative Methods in the Social Sciences or POLS 133 or an approved course in statistics from another department such as MATH 35 or MATH 37. 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 (see further below):

Criminal Justice

Cultural Sociology

Social Services

Majors may elect to develop their own coherent emphasis program in consultation with their faculty adviser. Work toward the major will normally include no more than two courses transferred from another institution and no more than two introductory level non-required courses. Additional sociology courses may be taken for breadth or to meet other student aims, up to a total of 60 units (including transferred courses). Students majoring in sociology are strongly advised to take one or more courses, which build skills in writing, oral communication and computer use.

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:

SOCI 131	Deviant Behavior (entry-level course)
SOCI 133	Criminology
SOCI 139	Corrections (advanced course)

Cultural Sociology Emphasis

The cultural sociology emphasis focuses upon the cultural processes and meanings that are central to every sphere of contemporary life. Students choosing this emphasis will be exposed to the basic issues and frameworks used for understanding culture and to some of the significant research in the field. The emphasis has been designed to facilitate awareness, identification and analysis of cultural processes and meanings, in order to allow students to become more effective in the increasingly multi-cultural environments of contemporary world, whether these be in the areas of government, commerce or community service. Students electing the cultural sociology emphasis will choose one course in each of the three areas, and a fourth course from any of the three areas. Students electing the cultural sociology emphasis will complete:

SOCI 102	Culture and Society (entry-level course)

Pick a minimum of one:

SOCI 104	Sociology of Sport
	Or
SOCI 108	Food, Culture and Society

Pick a minimum of one:

SOCI 114	Social and Cultural Change (advanced course)
	Or
SOCI 123	Sex and Gender (advanced course)

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 work. Students pursuing the social service emphasis will complete:

SOCI 81	Introduction to Social Services (entry-level course)

Pick a minimum of one:

SOCI 125	Health and Illness
	Or
SOCI 127	Family and Marriage
SOCI 181	Delivery of Social Services (advanced course)

Experiential Learning

All majors must fulfill an experiential learning requirement. This requirement can be satisfied through a traditional internship, fieldwork, or applied and/or independent study or research, but it is expected that whatever its format, the experience will involve significant engagement with the "real world" community. The Sociology 187: Fieldwork course is expected to be a primary vehicle for the fulfillment of this requirement, especially for students studying in the Criminal Justice and Social Service emphases.

Requirements for the 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:

SOCI 71	Foundations of Sociology
SOCI 171	Social Research Methods

One "entry" level Emphasis course

Two additional courses, chosen in consultation with the Minor adviser.

Course Offerings

Introductory Courses

SOCI 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.

SOCI 61. Urban Society (4)
A sociological introduction to the study of American cities and urban lifestyles, which explores patterns of racial, ethnic, immigration and social class diversity, sources of inequality, and economic and social problems that influence the quality of modern urban life. Application of sociological knowledge to improve social institutions and multicultural relations, develop communities and achieve positive social change.

SOCI 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.

Other Offerings

SOCI 102. Culture and Society (4)
An examination of cultural artifacts and their various linkages with contemporary social structure. Topics examined include: the cultural creator and social restraints; the development and forms of 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.

SOCI 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 or permission of the instructor.*

SOCI 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.

SOCI 114. 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: SOCI 102 or permission of the instructor.*

SOCI 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. *Prerequisite: SOCI 102 or permission of the instructor.*

SOCI 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 permission of the instructor.*

SOCI 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.

SOCI 131. 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.

SOCI 133. Criminology (4)
Analysis of the nature and distribution of crime; theories of crime causation and prevention; examination of the operation of police and judicial agencies.

SOCI 139. 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. *Prerequisite: SOCI 131 or permission of the instructor.*

SOCI 153. 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 POLS 133).

SOCI 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: SOCI 81 or permission of the instructor.*

Core Courses

These courses must be taken to fulfill major requirements in sociology.

SOCI 71. Foundations of Sociology (4)
An exploration of fundamental concepts, theoretical approaches, empirical methods and fields of inquiry of concern to the professional sociologist. Examination of selected topics of concern to the discipline and strategies for applying sociological knowledge at individual, group and societal levels. Introduction to the fundamentals of data analysis. Exploration of the roles and contributions of the professional sociologist. Required as the first course in the core sequence for students intending to major or minor in sociology.

SOCI 79. Social Psychology (4)
The study of the relationships between the individual and his/her social environment, including the nature of social roles, socialization and human development, group formation, intergroup relations including the causes and consequences of prejudice, and the influence of groups and social institutions on human identity and behavior. *Prerequisite: SOCI 71 (or concurrent enrollment) or permission of the instructor.*

SOCI 171. Social Research Methods (4)
The review and application of the various methods most used in social science research to design research projects and gather and analyze data. Examination of the ethical issues involved in the use of such methods. Consideration of the interrelationships between the development of social theory and methodologies of data collection including experiments, observation, interviews, surveys and content analysis. Use of statistical

software in sampling and data analysis. *Prerequisite: SOCI 71 or permission of the instructor.*

SOCI 175. Organizations and Social Structure (4)
Exploration of the organizational structure of human societies and the influence of organizations on individuals and groups. Analysis of the form and structure of formal organizations and the relations between organizations, social class and social institutions in contemporary society. Case studies of private, public, and non-profit organizations. *Prerequisite: SOCI 71 or permission of the instructor.*

SOCI 177. Theories of Society and Culture (4)
Examination of sociological theory at both the macro- and micro-sociological levels. Students completing this course will learn how sociologists define and use theory in the development of sociological knowledge. They will learn and be able to compare and contrast several basic theoretical orientations. Through practical exercises they will develop the ability to select and to appropriately apply multiple theoretical concepts and perspectives to a variety of social issues facing individuals, groups, our society and the world. *Prerequisite: SOCI 71; SOCI 175 strongly recommended.*

SOCI 179. Capstone Seminar (4)
A seminar that allows senior students to put into practice skills and ideas they have developed throughout their major course of study. Students will examine the history of the field, including the promise, successes, and failures of sociology. Students will present ideas and data to their peers, participate in the assessment of the major program, and consider the major as it relates to their personal and professional goals. *Prerequisite: Open to majors with senior standing only, or by permission of the instructor.*

Special Areas

SOCI 187a, b. Fieldwork (2 or 4, 2 or 4)
Provides the opportunity for supervised observation and experience in community settings, including public agencies, non-profit or voluntary organizations, or businesses. Fieldwork sites may be local or away from campus. Eligibility to enroll presupposes familiarity with issues and problems in the field in which one is to work, usually demonstrated by acceptable work in one or more related campus courses. SOCI 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 SOCI 187a. Specific responsibilities for each course will be set in conference with the instructor. SOCI 187 is an advance learning opportunity designed for students with sociological preparation who want to learn more about sociological topics through direct experience, observation, reflection and analysis. The course may be repeated for credit, but will apply toward major requirements only once. SOCI 187 is a letter-graded course. *Prerequisites: SOCI 71 and SOCI 171, 2.0 GPA in major or permission of the instructor.*

SOCI 191. Independent Study (2 or 4)
Available to majors with a "B" average in the major field by permission of the individual instructor.

SOCI 193. Special Topics (upper level) (4)

SOCI 197a,b. Independent Research (2 or 4)
Provides the opportunity for qualified students to complete a supervised original social research project using one or more research methodologies common to the discipline of sociology. Students are encouraged to focus on a sociologically relevant community based topic and to prepare results for professional presentation. Projects under-taken for 4 units of credit may meet the departmental experiential learning requirement. *Prerequisites: SOCI 171.*

Sport Sciences

Professor: Ciccolella, Beal, Snell (Chair)

Associate Professors: Boelter, Koehler , VanNess, West

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The mission of the University of the Pacific's Department of Sport Sciences is to provide a progressive, dynamic, cross-disciplinary curriculum in the liberal arts and sciences tradition. The program aims to attract and sustain students and faculty of diversity and quality. Students secure a foundation of knowledge in the sport sciences and are provided with varied opportunities for specialization and experiential learning. The program seeks to exemplify responsible and meaningful community involvement as characterized by the citizen-leader concept for both faculty and students.

Degrees in Sport Sciences

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: sport pedagogy, sports medicine, sport management or athletic training. Students seeking a physical education teaching credential may also earn additional units 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, and intercollegiate sports.

Facilities

The Department of Sport Sciences has the following facilities for use in its programs: Baun Fitness Center, two human performance laboratories, an Athletic Training laboratory, two gymnasia, eight tennis courts, the Olympic-size Kjeldsen Pool, numerous playing fields and the Raney outdoor recreation area.

Core Curriculum

All majors must successfully complete the following Core courses:

SPTS 100	Introduction to Research
SPTS 127	Philosophy of Sport
SPTS 147	Exercise Physiology

And one of the following:

SPTS 139	Sport Psychology
SPTS 141	Sport in America

Academic Requirements

Sport Pedagogy Track

The Sport Pedagogy Track provides an opportunity to study 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 sport pedagogy student must complete a series of courses that culminate with options to qualify for teaching and/or adapted specialist credentials, coaching certification, or advanced study. Degree requirements for this track also include the 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:

SPTS 121	Team Sports
SPTS 123	Individual Sports
SPTS 131	Assessment and Evaluation
SPTS 133	Kinesiology
SPTS 139	Sport Psychology
SPTS 141	Sport In America
SPTS 151	Elementary Physical Education

SPTS 153	Adapted Physical Education
SPTS 155	Motor Learning
SPTS 159	Sport Pedagogy
SPTS 161	Biomechanics
SPTS 189e	Practicum: Sport Pedagogy

Motor Skill Proficiencies

Sport Sciences majors completing the Sport Pedagogy Track must also demonstrate 10 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 SPTS 121 and SPTS 123 and/or successfully completing appropriate activity classes.

Typical First-Year Program

Fall:	SPTS 127 Philosophy of Sport (Offered Fall and Spring)
	SPTS 121 Team Sports
	Pacific Seminar I
	General Education Course
Spring:	SPTS 123 Individual Sports
	SPTS 141 Sport in America
	Mentor II
	2 General Education Courses

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 Sport Pedagogy Track and courses required for non-majors:

Majors

SPTS 143	Athletic Training
SPTS 189f, g	Practicum: Coaching

Non-Majors

SPTS 41	Heart, Exercise and Nutrition
SPTS 139	Sport Psychology
SPTS 141	Sport in America
SPTS 159	Sport Pedagogy
SPTS 189f, g	Practicum: Coaching

Advanced Study (Optional)

Students preparing for advanced study shall select, by advisement, additional cognate courses to assist their preparation for research and/or graduate study.

Career Options for Sports Pedagogy

Completion of the Sport Pedagogy Track and subsequent single-subject teaching credential requirement permits students to pursue careers in a variety of education settings. This is true of the regular credential program in physical education as well as the more specialized concentrations in adapted physical education and coaching. The coaching concentration is not only recommended for sport pedagogy majors but also for other teaching majors who may be interested in coaching. For all teaching credential candidates, the University of the Pacific Office of Career Services provides a personalized approach to teacher employment placement.

Sports Medicine Track

The Sports Medicine track is scientifically based and human oriented. It prepares students for careers and/or further graduate study in health and fitness related areas such as medicine, physical therapy, occupational therapy, nutrition and exercise/work physiology. A primary goal of this track is to provide a scholarly environment in classes and laboratories that supports and encourages the application of theoretical concepts. Students will study and apply principles relevant to the rehabilitation and enhancement of human performance.

In addition to 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

SPTS 131	Assessment and Evaluation
SPTS 133	Kinesiology
SPTS 147	Exercise Physiology
SPTS 157	Clinician in Sports Medicine

Life and Physical Science Courses

BIOL 51	Principles of Biology
BIOL 61	Principles of Biology
BIOL 71	Human Anatomy
BIOL 81	Human Physiology
CHEM 25	General Chemistry
PHYS 23	General Physics

In addition, the Sports Medicine student must complete three (3) additional courses from the Department of Sport Sciences.

Typical First-Year Program

Fall:	SPTS 127 Philosophy of Sport (Offered Fall & Spring)
	SPTS Core Course
	BIOL 51 Principles of Biology
	Pacific Seminar I
	General Education
Spring:	SPTS Core Course
	BIOL 61 Principles of Biology
	Pacific Seminar II
	General Education

Pre-Physical Therapy (Optional)

Students in the Sports Medicine track who are interested in pursuing graduate studies in Physical Therapy are advised to complete the following courses:

BIOL 145	Microbiology
CHEM 27	General Chemistry
CLAS 33	Bioscientific Terminology
COMP 25	Computers and Information Processing
PHYS 25	General Physics
PSYC 111	Abnormal Psychology
PSYC	Psychology Elective
MATH 37	Probability and Statistics

Mentor Seminars I and II or two appropriate writing courses

Pre-Occupational Therapy (Optional)

Students who are interested in pursuing graduate studies in Occupational Therapy should see their adviser for any additional courses and also complete the following:

COMM 27	Public Speaking
ENGL	Two writing courses or Pacific I & II
MATH 37	Probability and Statistics
PSYC 31	Intro to Psychology
PSYC 111	Abnormal Psychology

Two Social Science courses

A Studio Art course (Ceramics or Drawing)

Career Options for Sports Medicine

Employment opportunities following completion of the sports medicine track include fitness directorship, cardiac disease prevention-rehabilitation, work toward advanced degrees in areas related to sports medicine, physical therapy, and occupational therapy.

Sports Medicine is in part a self-contained program as curricular support for Pacific's Physical Therapy Graduate program.

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 sports, campus sports/intramurals,

amateur sports, community recreation, private sport clubs, corporate fitness, hotel fitness and resorts, and sport retailing/merchandising. An international sport management option is also available.

Career Options for Sport Management

Employment opportunities following completion of the sport management track include, but are not limited to, event marketing, sales, management, hospitality, sponsorship, community relations, athlete representation, and public relations. These specialized areas can be found in amateur and professional sport, corporations that market through sport, sport tourism, community recreation, resorts, health and fitness centers, collegiate sport, casinos, stadiums, and arenas.

Department Courses

SPTS 165	Sports Law
SPTS 167	Introduction to Sport Management
SPTS 169	Managing Sport Enterprises
SPTS 171	Sport Economics and Finance
SPTS 174	Sport Marketing and Promotions
SPTS 175	Sport Event Management
SPTS 187a	Internship: Sport Management
SPTS 187b	Internship: Sport Management

Adjunct Courses

BUSI 31	Principles of Financial Accounting
BUSI 107	Marketing Management
COMM 43	Introduction to Interpersonal Communication
	Or
COMM 27	Public Speaking
COMP 25	Computers and Information Processing
ECON 53	Introductory Microeconomics

Typical First-Year Program

Fall:	SPTS 127 Philosophy of Sport (Offered Fall and Spring)
	SPTS 167-Introduction to Sport Management
	Pacific Seminar I
	General Education
Spring:	SPTS 141 Sport in America
	COMM 43-Introduction to Interpersonal Communication or
	COMM 27-Public Speaking
	Pacific Seminar II
	General Education

Career Options for Sport Management

Employment opportunities are available in community clubs, fitness/wellness centers, business and industrial employee services, recreation resorts, stadiums and arenas, pro and amateur sports and school and government programs. Specialized employment opportunities that students can work toward include public relations, accounting and financial management, marketing and promotions, facility management and computer programming and statistics.

Athletic Training Track

The Athletic Training Track is designed to prepare students in the art of applying scientific techniques to prevent, recognize, manage, and rehabilitate sports injuries. The program is specifically designed to provide the theoretical and practical learning experience requisite to certification by the National Athletic Trainers' Association Board of Certification (NATABOC). Students who select the Athletic Training Track must complete a series of courses within the department, adjunct courses from the natural sciences, and four semesters of clinical education.

During the clinical education portion of the program, athletic training students must accumulate a minimum of 800 hours (200 hours/semester) of experience under the direct supervision of a Certified Athletic Trainer (ATC) or other allied health care professional. Students must also demonstrate proficiency in entry-level athletic training skills in the presence of an Approved Clinical Instructor (ACI). Students are required to meet pre-requisite criteria and submit application materials before beginning the clinical education program. A limited number of students will be admitted into the program each fall semester. Please visit the program's website for more specific information about admission criteria, technical standards, and application materials. The program's website is www.pacific.edu/atep/index.html

Department Courses

SPTS 25	Advanced First Aid
SPTS 27	Introduction to Athletic Training
SPTS 89b	Practicum: Athletic Training I
SPTS 89k	Practicum: Athletic Training II
SPTS 133	Kinesiology
SPTS 135	Sports Nutrition
SPTS 139	Sport Psychology
SPTS 143	Athletic Training
SPTS 145	Therapeutic Modalities
SPTS 146	Health, Disease, and Pharmacology
SPTS 147	Exercise Physiology
SPTS 149	Advanced Athletic Training
SPTS 163	Therapeutic Exercise
SPTS 173	Athletic Training Administration
SPTS 189b	Practicum: Athletic Training III
SPTS 189k	Practicum: Athletic Training IV

Adjunct Courses

BIOL 61	Principles of Biology
BIOL 71	Human Anatomy
BIOL 81	Human Physiology

Although not required, it is recommended that students take courses in Chemistry, Physics and Statistics. Consult with an Athletic Training Adviser.

Typical First-Year Program

Fall:	SPTS 127 Philosophy of Sport (Offered Fall and Spring)
	Pacific Seminar I
	Two General Education Courses
Spring:	BIOL 61 Principles of Biology
	Pacific Seminar II
	Two General Education Courses

Career Options for Athletic Training

Employment opportunities following completion of the Athletic Training Track and passing the NATABOC Examination include athletic training at the secondary school and collegiate levels, professional athletic training, athletic training in clinical or industrial settings, and work toward advanced degrees in areas related to Athletic Training and Sports Medicine.

Minor in Sport Sciences

To earn a minor in Sport Sciences, students must complete the following Core Courses:

SPTS 127	Philosophy of Sport
SPTS 147	Exercise Physiology

And ONE of the following:

SPTS 139	Sport Psychology or
SPTS 141	Sport in America

In addition, the student would work closely with a minor adviser in selecting three (3) elective courses. These elective units would be selected on the basis of the specific area of Sport Sciences (e.g., Sport Psychology, Athletic Training, Sport Management, Coaching, Sport Pedagogy, Sports Medicine) in which the student is interested.

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 for health, scuba, bowling, running for health, volleyball, badminton, tennis, golf, basketball, weight training, kick box, karate, yoga, aikido, kung fu, tae-kwon do, and self-defense for women.

Students on the Stockton campus can apply a combined total of eight units of SPTS 11-Activities and SPTS 13-Intercollegiate Sports toward graduation; however, no more than four of the eight units can be in intercollegiate sports. Up to 8 units of activity and intercollegiate sports classes may count toward the breadth requirement. A one-unit activity class can be repeated only once; no two-unit activity class may be repeated for credit. All activity and intercollegiate sports classes will be evaluated on the pass/no credit basis.

Course Offerings

SPTS 11. General Activity Classes (1-2)
Open to entire University student body. Pass/No credit grading only. Activity fee required.

SPTS 13. Intercollegiate Sports (1)
The University is a member of the Big West Conference and participates in seven men's and nine women's sports; Men's: baseball, basketball, golf, swimming, tennis, volleyball, water polo; Women's: basketball, cross country, field hockey, soccer, softball, swimming, tennis, volleyball, and water polo. *Open to all University student-athletes. May be repeated up to four unit maximum. Pass/No credit only.*

SPTS 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.*

SPTS 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. Includes CPR instruction. *Standard First Aid is not a prerequisite although it is recommended that students have some basic first aid knowledge. Lab fee required.*

SPTS 27. Introduction to Athletic Training (1)
A course designed to give Sport Sciences majors an opportunity to explore and observe the field of athletic training. Instruction is focused on basic skills while being exposed to the concepts of the athletic training profession. Students are required to spend 3 hours of observation a week in an athletic training setting. *Pass/No credit only. Lab fee required.*

SPTS 41. Heart, Exercise and Nutrition (4)
This course is an introduction to the acute and chronic effects of exercise on the cardiovascular and musculo-skeletal systems. An individually prescribed exercise program based upon class discussion and laboratory assessment of aerobic capacity, blood lipids, and nutritional habits is offered. CPR certification is offered. *Lab fee required.*

SPTS 43. Health Education for Teachers (3)
This course examines objectives from the California Health Education Framework, the health status of youth, at-risk students, components of comprehensive school health education, the role of the teacher in school health services, and special health concerns of today's youth. It is designed to satisfy the Commission for Teacher Credentialing requirement for health education and includes mandated information on nutrition, alcohol, tobacco, and other drugs.

SPTS 45. Science of Nutrition (4)
Examination of the digestion, absorption, and utilization of nutrients. Overview of the biochemistry of the macronutrients: carbohydrate, lipid, protein, and water; and micronutrients: vitamins and minerals. Role of nutrients in disease processes such as obesity, cardiovascular disease, and aging. Additionally, diet planning, production of food, and control of energy balance will be covered. Students may not receive credit for this course if they take either BIOL 45 or SPTS 13. *Lab fee required.*

SPTS 50 Foundations of Sport Sciences (3)
This course introduces students to the field of Sport Sciences including the foundational concepts, the cross-disciplinary nature, and professional opportunities. Open to exploratory and Sport Sciences majors only. *Recommended for first-year students.*

SPTS 87. Fieldwork (2-4)
Laboratory work in school and community agencies. Open to non-majors by permission of the instructor. Pass/No credit only.

SPTS 89/189. Practicum (2)
Non-classroom experiences in activities related to Sports Sciences, under conditions determined by the appropriate faculty member. SPTS 189 represents advanced practicum work involving increased independence and responsibility. Enrollment is limited to eight units maximum of 89/189a, b, c, d, h, j, k offerings and no category within a course may be repeated for credit. A list of specific courses follows.

SPTS 89a/189a. Practicum: Adapted Physical Education (2, 2)

SPTS 89b/189b. Practicum: Athletic Training I, III (2, 2)

SPTS 89c/189c. Practicum: Biomechanics (2, 2)

SPTS 89d/189d. Practicum: Exercise Physiology (2, 2)

SPTS 89h/189h. Practicum: Sports Law (2, 2)

SPTS 89j/189j. Practicum: Kinesiology (2, 2)

SPTS 89k/189k. Practicum: Athletic Training II, IV (2, 2)

SPTS 89b. Practicum: Athletic Training I (2)
A clinical education course in the field of athletic training. It will incorporate an experiential learning environment designed to prepare students for a career in athletic training. Basic skills are introduced within the daily operations of the athletic training room and in the care of athletes. Criteria for progression must be met before enrolling in subsequent practicum course. *Prerequisite: admission to the athletic training clinical education program, or permission of the instructor.*

SPTS 89k. Practicum: Athletic Training II (2)
A clinical education course in the field of athletic training. It will incorporate an experiential learning environment designed to prepare students for a career in athletic training. Intermediate skills are introduced within the daily operations of the athletic training room and in the care of the athletes. Criteria for progression must be met before enrolling in subsequent practicum course. *Prerequisite: SPTS 89b.*

SPTS 100 Introduction to Research (3)
This course introduces students to the various methods of research used in Sport Sciences. Issues to be addressed include selecting research topics, developing reviews of literature, methodology, and analysis of data. *Open to Sport Sciences majors with sophomore standing or higher only.*

SPTS 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 12 different team sports will be presented and instruction time per sport will vary. *Prerequisite: Sport Sciences major and/or permission of the instructor. Lab fee required.*

SPTS 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 12 different indi-

vidual sports will be presented and instruction time per sport will vary. *Prerequisite: Sport Sciences major and/or permission of the instructor. Lab fee required.*

SPTS 127. Philosophy of Sport (3)
A critical examination of the meaning in sport, fitness, recreation and physical education activities. Arguments from major classical and contemporary philosophical positions are used to address questions relative to the quality of human movement, ethics, aesthetics and the relationship of the mind and body. Leading theorists in the various fields of human movement studies are reviewed.

SPTS 129. Principles of Exercise (3)
A course designed to meet the broad needs of Sport Sciences majors, utilizing a practical approach based on underlying physiological principles as guidelines for exercise practices, as found in physical education, athletics, adult exercise prescription and other settings. Outside laboratory assignments (4) will be carried out for the purpose of demonstrating basic physiological responses and the resulting principles that are drawn from them for application in exercise and testing settings. *Prerequisite: BIOL 51 or BIOL 11 or equivalent. Lab fee required.*

SPTS 131. Assessment and Evaluation (4)
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. *Lab fee required.*

SPTS 133. Kinesiology (4)
A functional study of musculoskeletal anatomy and its relationship to human movement, posture, exercise prescription, and rehabilitation. *Prerequisite: BIOL 11 or 51 or 71 or permission of the instructor. Lab fee required.*

SPTS 135. Sports Nutrition (4)
A thorough study of the principles of nutrition as they relate to health and participation in sports or physical activity. Includes calculating energy needs and expenditures, energy balance and the role of carbohydrates, fat, protein, vitamins, minerals, and water in sports nutrition.

SPTS 137. Psycho-Social Aspects 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.

SPTS 139. Sport Psychology (4)
This course employs the theories and methods of psychology to examine the related fields of competitive sports, fitness, exercise, and rehabilitation from injury. Major questions addressed in the course will include: How do psychological factors influence participation in physical activity and performance of the individual? How does participation in physical activity or incapacity due to an injury affect the psychological make-up of the individual? These questions are explored from educational, coaching, research, and clinical perspectives.

SPTS 141. Sport in America (4)
The passions and politics of American sport are a significant theme in our society. This course uses a sociological perspective to provide an appreciation of sport as an integral part of our cultural dynamics. The relationship of sport and other social institutions such as media, economy, politics, and education will be covered, as well as the relationship of sport and social stratification such as gender, race, and class.

SPTS 143. Athletic Training (3)
This course provides an overview of the field of athletic training, its organization, and the responsibilities of a certified athletic trainer (ATC). Instruction will emphasize athletic training competencies including the prevention, recognition, and immediate care of injuries and illnesses associated with physical activity. *Lab fee required.*

SPTS 145. Therapeutic Modalities (3)
A lecture and laboratory experience designed to expose the student to the theory, principles, techniques and application of therapeutic modalities pertaining to the treatment of athletic or activity related injuries. Included will be discussions of the physiological effects, indications, contra indications, dosage and maintenance of each modality. *Prerequisite: BIOL 81. Lab fee required.*

SPTS 146. Health, Disease, and Pharmacology (4)
An in-depth exploration of physical, mental, and social health with specific emphasis on recognizing the signs, symptoms, and predisposing conditions associated with the progression of specific illnesses and diseases as they relate to the physically active individual. Students will also develop an awareness of the indications, contraindications, precautions, and interactions of medications used to treat those illnesses and diseases.

SPTS 147. Exercise Physiology (4)
An in-depth study of human physiological responses and adaptations resulting from muscular activity. Topics of study will expand beyond physical education and athletic settings and will include a variety of recreational, work and environmental situations, as well as touch on the aging and special populations. A laboratory experience will be provided for the demonstration and measurement of basic physiological responses that occur with exercise, as well as more complex interactions and biological systems integration. *Prerequisite: BIOL 81. Lab fee required.*

SPTS 149. Advanced Athletic Training (3)
This course provides advanced material in the field of athletic training to physical education teachers, coaches, and pre-physical therapy and athletic training students. The course presents an in-depth study of anatomy and evaluation of injuries and illnesses associated with physical activity. *Prerequisites: SPTS 133 and 143. Lab fee required.*

SPTS 151. Elementary Physical Education (3)
Lecture/laboratory experiences in elementary school physical education programs. Curriculum development, classroom techniques and procedures are studied.

SPTS 153. Adapted Physical Education (4)
A broad-based examination of the physical education and activity needs of children and adults with disabilities. Components of course focus on physiological profiles of individuals with disabilities, federal and state legislative mandates, assessment, design of individual educational programs, and instructional and evaluative techniques in adapted and special physical education. Prerequisite: sophomore standing or above. *Lab fee required.*

SPTS 155. Motor Learning (3)
This course examines aspects of skilled performance and motor learning from a developmental perspective. It is concerned with the major principles of human performance and skill learning, the progressive development of a conceptual model of human actions and the development of skill through training and practice. Topics covered will include: human information processing, decision-making and movement planning; perceptual processes relevant to human movement; production of movement skills, measurement of learning; practice design, preparation, organization, and scheduling; use of feedback; and the application of motor learning principles to sport, physical education, industrial and physical therapy settings.

SPTS 157. Clinician in Sports Medicine (4)
The application of theory and practice to sports medicine. This course focuses on individual student interests in the field and requires the development of research topics that are narrowly defined and demonstrate specific application. Prerequisite: Permission of the instructor. *Lab fee required.*

SPTS 159. Sport Pedagogy (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. Class work 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. *Prerequisite: SPTS 151 or permission of the instructor.*

SPTS 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. *Prerequisite: BIOL 11 or 71 or permission of the instructor. Lab fee required.*

SPTS 163. Therapeutic Exercise (3)
An application of the theory and principles associated with therapeutic exercise and the application of various rehabilitation techniques and procedures during the course of an athlete's rehabilitation to attain normal range of motion, strength, flexibility, and endurance. *Prerequisite: SPTS 133. Lab fee required.*

SPTS 165. Sports Law (4)
This course addresses legal issues and responsibilities relevant to professionals in the areas of sports medicine, sport management, sport pedagogy and athletics. General legal principles supported by case law in such areas as negligence, contract law, constitutional law, antitrust laws and unlawful discrimination are offered. *Prerequisite: junior standing or permission of the instructor.*

SPTS 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.

SPTS 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. *Prerequisite: SPTS 167 or permission of the instructor.*

SPTS 171. Sport Economics and Finance (4)
This course is designed to address the relationship between sport and economics and finance. Both theoretical and practical aspects will be explored. Students will analyze sport as big business and will examine the role of sport within the economic structure, nationally and locally. Further, students will examine and utilize financial principles as they apply to the sport or fitness enterprises. *Prerequisites: ECON 53 and BUSI 31 and junior standing.*

SPTS 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.

SPTS 173. Athletic Training Administration (3)
An in-depth study of the theory and practices in the organization and administration of athletic training programs as related to finances, facilities, equipment, program development, organizational structures, medical/insurance records, risk management, human relations, legal aspects, and personnel. *Prerequisite: SPTS 149.*

SPTS 174. Sport Marketing and Promotions (4)
An in-depth study of the specific challenges associated with the field of sport and life-style marketing. Mainstream marketing theory and principles will be applied to develop an understanding of sport marketing research, sport consumer behavior, sponsorship, promotions, information management, public relations, and the segmentation process. *Prerequisite: SPTS 169.*

SPTS 175. Sport Event Management (4)
A comprehensive investigation into the organizational framework and principles needed to design, implement, and manage large and small sport or leisure events. The course will cover event logistics, risk management, human resource management of volunteers and staff, and effective marketing of an event. *Prerequisite: BUSI 107 and SPTS 169.*

SPTS. 187. Internship in Sports Medicine (4)
An opportunity for qualifying students to work in an area of Sports Medicine that interests them. *Prerequisites: SPTS. 157; GPA 2.0; No grade in major below C-; and approval of course supervisor.*

SPTS 187a, b. Internship: Sport Management (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. *Prerequisite: SPTS 175 and permission of the instructor.*

SPTS 189 a, c, d, h, j. Practicum (2, 2, 2, 2, 2)
Advanced practicum work in Sports Medicine. See SPTS 89 for subcategories and enrollment limitations.

SPTS 189b. Practicum: Athletic Training III (2)
A clinical education course in the field of athletic training. It will incorporate an experiential learning environment designed to prepare students for a career in athletic training. Advanced skills are introduced within the daily operations of the athletic training room and in the care of the athletes. Criteria for progression must be met before enrolling in subsequent practicum course. *Prerequisite: SPTS 89k.*

SPTS 189e. Practicum: Sport Pedagogy (2)
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: SPTS 151 or 159 and permission of the instructor.*

SPTS 189f, g. Practicum: Coaching (2, 2)
Students will be assigned to an intercollegiate or interscholastic sports 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: SPTS 139 and 155.*

SPTS 189k. Practicum: Athletic Training IV (2)
A clinical education course in the field of athletic training. It will incorporate an experiential learning environment designed to prepare students for a career in athletic training. The focus of this course is mastery of all entry-level skills encountered within the daily operations of the athletic training room and in the care of the athletes. Students will go through final preparations for the NATABOC examination. *Prerequisite: SPTS 189b.*

SPTS 191. Independent Study (2-4)

SPTS 193. Special Topics (1-4)

SPTS 195. Ethical Issues in Sport Sciences (3)

This course meets the Mentor III requirement of Pacific's General Education Program. The primary goal of this course is to enhance student awareness regarding values, evolving moral and ethical codes, and the ways of addressing moral problems. Students will examine various ethical theories and questions encountered in the field of Sport Sciences. As part of this course, students will need to identify necessary information from the various sub-disciplines in order to make professional and ethical decisions. *Open to Sport Sciences majors with junior standing or higher only.*

SPTS 233. Advanced Kinesiology (4)

A graduate seminar which considers the musculoskeletal analysis of human movement, posture, exercise prescription, and rehabilitation. *Prerequisite: SPTS 133, graduate standing or permission of the instructor.*

SPTS 235. Grad. Nutrition/Exercise Metabolism (4)

A thorough study of the principles of nutrition as they relate to health and participation in sport or physical activity. The course includes calculation of energy needs and expenditures, and the role of carbohydrates, fats, protein, vitamins, minerals, and water in sport and physical activity.

SPTS 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. *Prerequisites: SPTS 137 or equivalent and permission of the instructor.*

SPTS 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. *Prerequisites: SPTS 139 or equivalent and permission of the instructor.*

SPTS 241. Advanced Sociology of Sport (4)

A graduate seminar dealing with theoretical concepts of sociology related to the American sport environment. This course uses a sociological perspective to provide an appreciation of sport as an integral part of our cultural dynamics. The relationship of sport and other social institutions such as media, economy, politics, and education will be covered, as well as the relationship of sport and social stratification such as gender, race, and class.

SPTS 247. Advanced Exercise Physiology (4)

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: SPTS 147 or equivalent, and permission of the instructor. Lab fee required.*

SPTS 248. Applied & Clinical Physiology (4)

This course is designed to study the fundamental principles of exercise testing and interpretation for high risk, healthy, and athletic populations. The course is structured to focus on the cardiovascular, metabolic, and pulmonary responses to aerobic exercise and implications for designing training programs for enhancing health, fitness, and performance. This course will serve as a foundation for clinical exercise science and the use of exercise testing in the study of cardiac, metabolic and respiratory pathology. *Prerequisite: SPTS 147.*

SPTS 253. Advanced 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. *Lab fee required.*

SPTS 255. Advanced Motor Learning (4)

This graduate course examines both the information processing and dynamical systems approaches to the study of human motor behavior and skill acquisition. Content is theoretically and research based with a behavioral emphasis. Topics covered will include: variability and motor control; visual control of action; the role of reflexes; task interference; limitations in information processing, effects of stress on performance, and the Schema theory. It is intended to provide students with an advanced understanding of the conceptual, functional properties of the motor system and human motor performance and their application to teaching, coaching, industrial and therapeutic settings.

SPTS 257. Advanced Clinician in Sports Medicine (4)

The advanced application of theory and practice to sports medicine. This course focuses on individual student interests in the field and requires the development of research topics that are narrowly defined and demonstrate specific application. *Prerequisite: Permission of the instructor.*

SPTS 259. Professional Prep. In Sport Sciences (4)

Course is designed for the future professional practitioner who wishes to deliver an effective, meaningful clinical or educational experience to a diverse population and help them sustain it through the knowledge to conceive and plan meaningful programs, the administrative skill to produce an organizational structure within school and/or practicum that optimizes the impact of the program, and the creative energy to link the program to opportunities for children and adults. Students will engage in an in-depth study of the research on teaching and the application of research-based knowledge to the teaching and clinical professions.

SPTS 261. Advanced Biomechanics of Sport (4)

Advanced study of mechanical principles which influence human movement; both non-cinematographic and cinematographic/videographic techniques are used to analyze and evaluate motor skills and errors in performance; critical evaluation of current research findings in biomechanics. Prerequisite: undergraduate course in kinesiology or biomechanics or permission of the instructor. *Lab fee required.*

SPTS 265. Advanced Sports Law (4)

This course addresses legal issues and responsibilities relevant to professionals in the areas of sports medicine, sport management, sport pedagogy and athletics. General legal principles supported by case law in such areas as negligence, contract law, constitutional law, antitrust laws and unlawful discrimination are offered.

SPTS 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.

SPTS 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.

SPTS 274. Adv. Sport Marketing and Promotions (4)

An in-depth study of the specific challenges associated with the field of sport and lifestyle marketing. Mainstream marketing theory and principles will be applied to develop an understanding of sport marketing research, sport consumer behavior, sponsorship, promotions, information management, public relations, and the segmentation process.

SPTS 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: SPTS 175 or permission of the instructor.*

SPTS 279. Research Methods in Sport Sciences (4)

An in-depth evaluation of the various methods used in the disciplines of the sport sciences, including experimental, descriptive, qualitative and historical; 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 complete a fully developed Research Proposal as part of this course. *Prerequisites: graduate standing and completion of a course in statistics.*

SPTS 287. Advanced Internship in Sports Medicine (4)

An opportunity for qualifying students to work in an area of Sports Medicine that interests them. *Prerequisites: SPTS 257 and approval of the instructor.*

SPTS 287a, b. Advanced Internship: Sport Management (4, 4)

Professional leadership experience for graduate students. Agency placement is based on student goals and professional leadership background.

SPTS 289a. Advanced Practicum: Sport Management (4)

This course is designed to provide students with a practical experience in the application of administrative theory. *Prerequisite: SPTS 169 or SPTS 269.*

SPTS 289b. Advanced Practicum: Coaching (2-4)

SPTS 291. Independent Study (2-4)

SPTS 293. Special Topics (3, 4)

Prerequisite: graduate standing or permission of the instructor.

SPTS 297. Independent Research (1-4)

SPTS 299. Thesis (4)

Theatre Arts

Professor: Wolak

Associate Professor: Armagnac (Chair, Producer, Artistic Director)

Assistant Professors: McClellan, Enlow, Tromovitch

Dance Instructor: Jennifer Ross

Department Phone: (209) 946-2116

Website: www.pacific.edu/cop/theatrearts

The Theatre Arts Department supports the mission of both the University and the College of the Pacific to offer our students:

1. Courses that serve the General Education program by exploring the nature of the human condition by studying the lively art of theatre.
2. Undergraduate, creative research opportunities through the study of theatre arts and the exploration and presentation of original and established plays and musicals.
3. A vital experience in the arts and crafts of the theatre so that faculty and students learn together and enrich themselves and connect the University with our immediate and wider community through theatre productions of high quality.
4. A Theatre Arts major within a well-rounded education in the liberal arts.
5. An opportunity to develop and exercise the skills of the "citizen leader" through applied learning experiences in our production program.

Specifically, the students and faculty of the Theatre Arts Department commit themselves to the following goals:

1. To develop an atmosphere where our creative efforts help us to appreciate our past and prepare for the future.
2. To inspire and challenge ourselves and our audience into a richer and deeper experience of life through theatrical presentations.
3. To study the traditions and encourage innovation in the theatrical arts as we provide a worthy training program for our students.
4. To offer opportunities for actors, directors, designers and technicians to collaborate to provide our public excellent presentations of the dramatic and musical stage.
5. To encourage experiments and innovations with the integration of the lively arts of drama, dance and the musical theatre.
6. To strive for the highest standards of training and production that our talent and resources allow.
7. To help our students to fulfill their vocational or avocational interests in the various arts and crafts of theatre.

Degrees in Theater Arts

The Theatre Arts Department maintains a balance between theoretical and practical learning in all its programs. Students earn Bachelor of Arts degrees in Theatre Arts by completing the minimal 124 units required by the College of the Pacific. Of those units, 64 must be outside the major and no more than 60 may be in the major. Liberal Studies majors may elect a 20-unit concentration in Theatre Arts specially designed by the students, and approved by Theatre Faculty, to meet a particular need. Liberal Studies majors or students interested in a minor in Theatre Arts should contact the chair of the department for further details.

University Productions

In line with our academic mission, the department maintains a schedule of theatrical productions, including plays of varying historical periods and dramatic styles and musicals as a co-curricular aspect of our program. All students, staff and faculty of the University and members of the Stockton Community may audition for departmental productions. Performances are given on the proscenium stage of the Long Theatre or the intimate black-box DeMarcus Brown Studio Theatre (in the Drama Building). All our facilities are located on the south campus in close proximity.

Our academic program features training in on-stage and backstage aspects of theatre. Courses range from acting and directing, to scenery, costume and makeup, to dramatic literature, theatre history and business management. We also provide dance instruction in ballet, modern, jazz, tap and musical theatre.

Academic Requirements

Academic regulations limit to 20 the number of credit units that can be applied toward graduation in certain experiential courses such as internships, activity classes and practicum courses (THEA 05, 87, 89, 187 and 189). Students are limited to no more than 8 units of SPTS 11, 13 and THEA 7.

Theatre Arts Major (49 units)

Theatre Fundamentals (15 units required)

THEA 11	Introduction to Theatre	(3)
THEA 105	Career Workshop	(2)
THEA 109	Theatre Arts Capstone	(2)
THEA 113	Theatre Heritage I	(4)
THEA 115	Theatre Heritage II	(4)

On Stage Component (11 units required)

THEA 31	Stage Makeup Fundamentals	(2)
THEA 71	Beginning Acting	(3)
THEA 75	Expressive Movement	(3)
THEA 111	Script Analysis	(3)

Backstage Component (8 units)

THEA 33	Theatrical Design Fundamentals	(4)
THEA 35	Stage Management	(2)
THEA 37A	Costume Construction and Technology	(2)
Or		
THEA 37B	Lights & Sound Technology	(2)
Or		
THEA 37C	Scenic Construction and Technology	(2)

Experiential Component (6 units required)

THEA 05	Onstage	(1, repeatable to 16)
THEA 05	Backstage	(1, repeatable to 16)*
THEA 89	Practicum: Performance	(2, repeatable to 8)
THEA 89	Practicum: Productions	(2, repeatable to 8)

THEA 189	Practicum: Performance	(2-4, repeatable to 8)
THEA 189	Practicum: Production	(2-4, repeatable to 8)

**2 units of THEA 05 Backstage are required of each major.*

Also, only a total of 20 units of Experiential Component classes may count towards graduation.

Theatre Electives (9 units required)

THEA 05	Backstage	(1, repeatable to 16)
THEA 05	Onstage	(2, repeatable to 16)
THEA 37A	Costume Construction and Technology	(2)
THEA 37B	Lights & Sound Technology	(2)
THEA 37C	Scenic Construction and Technology	(2)
THEA 51A	Ballet	(1, repeatable to 4)
THEA 51B	Jazz	(1, repeatable to 4)
THEA 51C	Modern	(1, repeatable to 4)
THEA 51D	Tap	(1, repeatable to 4)
THEA 87	Theatre Internship	(2)**
THEA 89	Practicum: Performance	(2, repeatable to 8)
THEA 89	Practicum: Productions	(2, repeatable to 8)
THEA 100	Theatre Tour	(2, repeatable to 8)
THEA 112	Playwriting	(3)
THEA 130	Puppetry and Mask-making	(3)
THEA 170	Storytelling/Creative Drama	(3)
THEA 171	Intermediate Acting	(3)
THEA 172	Directing	(4)
THEA 173A	Advanced Acting: Classical Styles	(3)
THEA 173B	Advanced Acting: Actor's Repertoire	(3)
THEA 187	Theatre Internship	(2)**
THEA 189	Practicum: Performance	(2, repeatable to 8)
THEA 189	Practicum: Production	(2, repeatable to 8)
THEA 191	Independent Study	(2-4)
THEA 193	Special Topics	(2-4)

***THEA 87/187 Theatre Internship are considered Experiential Component classes and must be considered in the 20 unit limit.*

Recommended Curriculum

Freshman Year: Fall

Pacific Seminar I	(4)
Gen. Ed.	(4)
Gen. Ed.	(4)
THEA 71	(3)
THEA 31	(2)
THEA Elective	(1)

Spring

Pacific Seminar II	(3)
Gen. Ed. IIIA	(4)
Gen. Ed.	(4)
THEA 05	(1)
THEA 11	(3)
THEA Elective	(1-3)

Sophomore Year: Fall

Gen. Ed. IIA	(4)
Gen. Ed.	(4)
THEA 75	(3)
THEA 05	(1)
THEA 33	(4)
THEA Elective	(1-2)

Spring

Language 2nd Sem.	(4)
Gen. Ed.	(4)
THEA 111	(3)
THEA 35	(2)
THEA 37A	(2)
Or	
THEA 37B	(2)
THEA Elective	(1-3)

Junior Year: Fall

Gen. Ed.	(4)
COP Elective	(4)
THEA 113	(4)
THEA Elective	(2-4)
THEA Elective	(2-4)

Spring

Gen. Ed.	(4)
COP Elective	(4)
COP Elective	(4)
THEA 115	(4)
THEA Elective	(2)

Senior Year: Fall

Pacific Seminar III	(3)
COP Elective	(4)
THEA 105	(2)
THEA Elective	(2-4)
THEA Elective	(2-4)

Spring

THEA 191	(2-4)
THEA 109	(2)
THEA Elective	(2-4)
THEA Elective	(2-4)

Course Offerings

THEA 05 I,J,K,L,M,N,O,P. Theatre: Back Stage (2)

Open to all students, this course provides 1 unit of credit for participation on a technical crew for a Theatre Department production. *Pass/No Credit only. May be repeated for each sub-section. Permission of instructor required.*

THEA 05 A,B,C,D,E,F,G,H. Theatre: On Stage (2)

Open to all students, this course provides 2 units of credit for full participation as a cast member in a Theatre Department production, which is judged by the faculty to be of suitable scope or difficulty. *Pass/No Credit only. May be repeated for each sub-section. Permission of instructor required.*

THEA 07. Dance Team (1)

To offer the student an opportunity to gain credit for rehearsal and performance with the University of the Pacific Dance Team. *Pass/No Credit only. May be repeated for up to eight units.*

THEA 11. Introduction to the Theatre (3)

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.

THEA 31. Stage Makeup Fundamentals (2)

Essentials of makeup for stage, including basics of makeup application, color theory, etc. Class projects include two-dimensional and three-dimensional techniques, cross-gender and stylized makeup designs. Students learn to apply makeup on themselves and, through service hours to Theatre Department productions, on others.

THEA 33. Theatrical Design Fundamentals (4)

In this lecture and demonstration course, students learn the theory and application of the fundamental principles of theatre design, covering costumes, lights, and scenery. Topics included color theory, sketching, drafting, rendering, script analysis, model-building, research, and historical analysis. Assignments also include hands-on work in the Scene Shop and Costume Shop. *Prerequisite: THEA 11 or permission of the instructor.*

THEA 35. Stage Management (2)

An introductory course in the theories, techniques and practices of stage-managing a production from its initial stages to the conclusion of the run. Plays, musicals, opera, dance and touring productions will be examined from the perspective of the stage manager. Working with directors and other members of the production

team will be examined. Approaches to "calling the show" will be reviewed. *Prerequisites: THEA 33, sophomore standing, or permission of the instructor.*

THEA 37A. Costume Construction and Technology (2)
This class covers all aspects of costume construction, including pattern making, pattern alterations, fitting adjustments, hand and machine sewing, and other related methods and materials for costume construction. Class work includes participation in current Theatre Department productions. This course is intended for majors and minors, but is suitable for interested general students. *Prerequisites: THEA 33 or permission of the instructor.*

THEA 37B. Light and Sound Technology (2)
Students will be trained in the application of the principles of stagecraft to the creation of lighting and sound environments for live theatre. Class work includes participation in current theatre Department productions. This course is intended for majors and minors, but is suitable for interested general students. *Prerequisites: THEA 33 or permission of the instructor.*

THEA 37C. Scenery (2)
Students will be trained in the application of the principles of stagecraft as applied to the creation of scenic environments for the live theatre. Class work includes participation in current Theatre Department productions. This course is intended for majors and minors, but is suitable for interested general students. *Prerequisites: THEA 33 or permission of the instructor.*

THEA 51A. Ballet (1, repeatable to 4)
Instruction in ballet, including terminology, technique, style, musicality, placement and strength. Students will be required to demonstrate increased proficiency in order to advance to a successive level.

THEA 51B. Jazz (1, repeatable to 4)
Instruction in jazz technique, including style, line, rhythm, isolations, flexibility, strength and percussion. Students will be required to demonstrate increased proficiency in order to advance to a successive level.

THEA 51C. Modern Dance (1, repeatable to 4)
Instruction in modern dance, including technique, style, musicality, alignment, centering, flexibility and strength. Students will be required to demonstrate increased proficiency in order to advance to a successive level.

THEA 51D. Tap (1, repeatable to 4)
Instruction in tap, including technique, terminology, time steps, rhythms and combinations. Students will be required to demonstrate increased proficiency in order to advance to a successive level. *Tap shoes are required.*

THEA 71. Beginning Acting (3)
An introduction to the theories and techniques of acting. Fundamental skills of acting will be explored through exercises, character analysis, scene study, and improvisation.

THEA 75. Expressive Movement (3)
This course introduces the student to several theoretical approaches to the implication of movement in education, therapy, and aesthetic expression. Students will explore basic Laban-analysis components and creative-movement elements. Students will be assigned a variety of out-of-class observations, class presentations and written assignments.

THEA 87. Theatre Internship (2)
Work experience off-campus, under supervision of non-Pacific managers/supervisors, in any theatrical field: film/television/ stage; acting, administration, management, design, or construction; for a specific production, a specified time length, or a summer season. *Pass/No Credit only.*

THEA 89 A,B,C,D. Practicum: Performance (2)
Students who are assigned a performance task which is judged by the faculty to be of suitable scope or difficulty will be enrolled in this course. Assignments may include a role or multiple roles, dance, combat, choreography assistance, etc. Pass/No Credit only. *Prerequisites: THEA 05 A,B,C,D,E,F,G,H and permission of the instructor.*

THEA 89 E,F,G,H. Practicum: Production (2)
Students who are assigned a production task which is judged by the faculty to be of suitable scope or difficulty will be enrolled in this course. Students will have some background in production and will assume positions with staff-like responsibilities. *Prerequisites: THEA 05 I,J,K,L,M, N, O, or P and permission of the instructor.*

THEA 100 A,B,C,D.Theatre Tour (2)
Attendance of theatre in a major center of theatre activity in the U.S. or abroad, on site seminars, lectures, and tours will be included. Written journals and plan reviews are required.

THEA 105. Career Workshop (2)
In this course, Theatre Arts students are guided to transition into a competitive environment in a variety of theatre related opportunities such as: acting auditions, graduate schools, professional training programs, commercial interviews, etc. Projects may include acting auditions, design portfolios, interview simulations for technicians, theatre management prospectuses, etc. Class members will also prepare resumes, headshots, and portfolios as part of the course work. *Prerequisites: THEA 33, 35, 71, senior standing, and/or permission of the instructor.*

THEA 109. Theatre Arts Capstone (2)
A student-developed and Faculty coordinated learning experience, which may involve performance or portfolio development and display, design or directing. All majors will create a specific project which will demonstrate a synthesis of the training received and an originality of perspective. Project proposals are reviewed and approved by a faculty committee. *Prerequisites: senior standing, and/or permission of the instructor.*

THEA 111. Script Analysis (3)
Script analysis for the director, actor, or designer through lecture and discussion. In addition to script analysis, emphasis is given to the basic skills of character analysis, casting, staging, production concept, and production requirements (scenery, lighting, costumes and sound) and in the production-audience relationship. *Prerequisites: THEA 11 or equivalent courses or permission of the instructor.*

THEA 112. Playwriting (3)
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 ENGL 175, and permission of instructor.*

THEA 113. Theatre Heritage I (4)
This course studies theatre history and dramatic literature from the classical era to the latter Renaissance. Students study the development of the physical theater, genres and styles of drama and their relationships to historical and cultural contexts. This is a lecture and discussion course in which students will prepare scholarly papers. *Prerequisites: THEA 11, or equivalent course and/or permission of instructor.*

THEA 115. Theatre Heritage II (4)
This course studies theatre history and dramatic literature from the Neoclassic to the modern era. Students study the development of the physical theater, genres, and styles of drama and their relationships to historical and cultural contexts. This is a lecture and discussion course in which students will prepare scholarly papers. *Prerequisites: THEA 11, 113, or equivalent course and/or permission of instructor.*

THEA 130. Puppetry and Mask-Making (2)
The study of construction and maintenance of puppets and masks, and their creative use in theatrical production. This course is also potentially relevant in education, therapy, and recreation. Students will develop creative presentations in particular aspects of the art and craft of puppetry and masks.

THEA 170. Storytelling and Creative Drama (3)
Principles and practice in selecting, preparing and telling stories for children to stimulate exploration and discovery through creative dramatic experiences.

THEA 171. Intermediate Acting (3)
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. Final projects will include formal written analyses, solo and ensemble presentations. *Prerequisites: a "B" or better in THEA 71 or permission of the instructor.*

THEA 172. Directing (4)
A study of the theories, principles, and practice of directing for the stage through directing projects for classroom presentation. *Prerequisites: THEA 11, 33, 71, 111, junior standing, and permission of the instructor.*

THEA 173A. Advanced Acting: Classical Styles (3)
An intensive course designed to prepare the actor for classical works. Period styles, and classical text will be approached through movement, dance, textual analysis and performance. Elizabethan, Baroque, Restoration, and Edwardian playwrights will be explored. *Prerequisites: a "B" or better in THEA 171 and permission of the instructor.*

THEA 173B. Advanced Acting: Actor's Repertoire (3)
The actor will create a portfolio of work consisting of classical and contemporary monologues and/or songs. Performance ready material will help facilitate the actor's transition from academic theatre to professional theatre. *Prerequisites: a "B" or better in THEA 171 and permission of the instructor.*

THEA 187. Theatre Internship (2)
Work experience off-campus, under supervision of non-Pacific managers/supervisors, in any theatrical field: film/television/stage; acting, administration, management, design or construction; for a specific production, a specified time length, or a summer season. *Pass/No Credit only. Prerequisite: junior or senior standing.*

THEA 189 A,B,C,D.Practicum: Performance (2)
Students who are assigned a performance task which is judged by the faculty to be of suitable scope or difficulty will be enrolled in this course. Assignments may included a role or multiple roles, dance or combat choreography, musical or vocal coaching, dance captain in musicals, etc. *Pass/No Credit only. Prerequisites: permission of the instructor and junior or senior standing.*

THEA 189 E,F,G,H. Practicum: Production (2)
Students who are assigned production support/technical crew roles judged by the faculty to be of suitable scope or difficulty will be enrolled in this class. Assignments may include: director, assistant director, production stage manager, designer (costumes, lights, sets, sound, etc.). *Pass/No Credit only. Prerequisites: permission of the instructor and junior or senior standing.*

THEA 191. Independent Study (2-4)

THEA 193. Special Topics (2-4)

Visual Arts

Professors: D. Kasser (Chair), Schleier

Associate Professors: DeBoer, Flaherty, L. Kasser, Wenzel

Assistant Professors: Burkett, Little

Visiting Lecturers: Kakuda, Oudegeest

Department Phone: (209) 946-2241

Website: www1.uop.edu/cop/art

The study of art involves learning about the cultural and historical significance of the visual arts and the development of visual literacy. This involves a personal engagement in the creative process and acquiring a more profound understanding of human expression. The department provides an undergraduate curriculum that is appropriate for students that plan careers in the field of studio art or graphic design and is responsive to liberal arts students seeking to expand their knowledge and understanding of the visual arts.

Degrees in Studio Art and Graphic Design

The department offers two accredited degree programs. These programs lead to a Bachelor of Arts degree in Studio Art or a Bachelor of Fine Arts degree in Graphic Design or Studio Art. A self-designed major in Art History is available. Admission into the BA or BFA degree programs requires the filing of a declaration of major form and consultation with a department adviser.

BA Degree in Studio Art

The Bachelor's degree is a liberal arts degree that expands perception and the many directions an artist may take in her/his career. It also enhances the inter-relationship of the study of the visual arts with other academic disciplines. Majors in the BA degree program must complete 124 units of course work from the three items below.

1. Successfully complete 42 or more units from the general education program within the College of the Pacific.
2. Successfully complete 24 - 26 units of selected University electives in an area other than art.
3. Successfully complete 56-60 units of the art degree major requirements.

Coursework for BA Degree in Studio Art (124 units)

Students are required to complete a minimum of 56 units in art history/studio practice to meet the BA degree requirements.

Foundations Program (36 units)

Freshman Year (20 Units)

ARTH 7	Survey of World Art to 1400
ARTS 5	Drawing
ARTS 7	Principles of Two-Dimensional Design
ARTS 9	Principles of Three-Dimensional Design
ARTH 9	Survey of World Art after 1400
ARTS 11	Photography I **OR**
	ARTS 45 Digital Photography

Sophomore Year plus (16 Units)

ARTH 116	Contemporary World Art
ARTS 23	Painting I
ARTS 43	Digital Media Survey
ARTS 35	Ceramics **OR**
	ARTS 37 Sculpture
	ARTS 59 Printmaking I

Concentrations in Studio Practice (12-16 Units)*

Junior/Senior Years

Following the completion of the foundations program students must select and fulfill the requirements of two 6-unit discipline concentrations and an additional 8 units of Studio Art Seminar. *Students wishing to pursue the Visual Arts Teaching Credential must complete the 16 units from Teaching Concentration.

Concentration in Drawing

ARTS 21	Life Drawing I
ARTS 121	Life Drawing II **OR**
	ARTS 127 Illustration

Concentration in Painting

ARTS 57	Watercolor Painting
ARTS 123	Painting II **OR**
	ARTS 127 Illustration

Concentration in Photography

ARTS 141	Photography II
ARTS 143	Photography III

Concentration in Printmaking

ARTS 151 Printmaking II
ARTS 153 Printmaking III

Concentration in Three Dimensional Media

ARTS 35 Ceramics **OR**
ARTS 37 Sculpture
ARTS 133 Three-Dimensional Studio I

Concentration in Visual Arts Teaching Credential

ARTS 131 Visual Arts in Education
ARTS 21 Life Drawing I
ARTS 57 Watercolor Painting **OR**
ARTS123 Painting II
ARTS 35 Ceramics **OR**
ARTS 37 Sculpture
ARTS 141 Photography II **OR**
ARTS 151 Printmaking II

Studio Art Seminars

ARTS 183, Studio Art Seminar II
ARTS 185, Studio Art Seminar III

BFA in Studio Art (136 units)

The Bachelor of Fine Arts in Studio Arts is an initial professional degree in the general fine arts. The goal of this degree is the development of skills, concepts and professional practice essential to a professional artist. Grounded in fundamental principles and techniques the BFA path provides students with opportunities to conduct meaningful undergraduate research and develop advanced studio work in two specific fine arts disciplines. This degree is designed for students committed to a rigorous undergraduate program that provides preparation for the fine arts field at the internship, graduate school or entry-level position. To complete a BFA degree in eight semesters a student should complete 17 units each semester to accrue 136 units from the three items below.

1. 42 or more units from the General Education Program within the College of the Pacific.
2. Successfully complete 11 or more units of selected University electives in an area other than art. Double majors are encouraged.
3. Successfully complete the department's foundations program, two self-selected disciplinary concentrations and advanced practice courses – not to exceed 83 units.

Coursework for BFA in Studio Art

Foundations Program (45 units)

Freshman Year (20 Units)

ARTH 7 Survey of World Art to 1400
ARTH 9 Survey of World Art after 1400
ARTS 5 Drawing
ARTS 7 Principles of Two-Dimensional Design and Color
ARTS 11 Photography I
ARTS 9 Principles of Three-Dimensional Design

Sophomore Year plus (25 units)

ARTS 21 Life Drawing I
ARTS 23 Painting I
ARTS 35 Ceramics
ARTS 37 Sculpture
ARTS 45 Digital Photography
ARTS 47 Digital Media Survey
ARTS 59 Printmaking I
ARTS 116 Contemporary Art History

Studio Art Concentrations

Junior/Senior (18 units)

Students must coordinate and complete two 9-unit discipline-specific concentration paths.

Concentration in Photography

ARTS 141 Photography II
ARTS 143 Photography III
ARTS 95 Computer Graphic Design I: Time-Based Media **OR**
ARTS 89,189 Practicum
ARTS 197 Undergraduate Research

Concentration in Printmaking

ARTS 151 Printmaking II
ARTS 153 Printmaking III
ARTS 197 Undergraduate Research **OR**
ARTS 89,189 Practicum

Concentration in Drawing

ARTS 121 Life Drawing II
ARTS 127 Illustration
ARTS 197 Undergraduate Research **OR**
ARTS 89,189 Practicum

Concentration in Painting

ARTS 57 Watercolor Painting
ARTS 123 Painting II
ARTS 125 Painting III **OR**
ARTS 127 Illustration
ARTS 197 Undergraduate Research
ARTS 89,189 Practicum

Concentration in Three Dimensional Media

ARTS133 Three Dimensional Studio I
ARTS 135 Three Dimensional Studio II
ARTS 197 Undergraduate Research **OR**
ARTS 89,189 Practicum
ARTS 191 Independent Study

Concentration in Visual Arts Teaching Credential

ARTS 131 Visual Arts in Education
ARTS21 Life Drawing I
ARTS 57 Watercolor Painting **OR**
ARTS123 Painting II
ARTS 35 Ceramics **OR**
ARTS 37 Sculpture
ARTS 141 Photography II **OR**
ARTS 151 Printmaking II

Advanced Practice (9-10 Units*)

Three courses (9-10 units minimum*) must be completed from the following list.

ARTS 87,187 Internship
ARTS 89,189 Practicum
ARTS 75 Graphic Design I
ARTS 91 Computer Graphic Design I: Print Media
ARTS 95 Computer Graphic Design I: Time-Based Media
ARTS 101 Graphic Design History
ARTS 123 Painting II
ARTS 125 Painting III
ARTS 127 Illustration
ARTS 131 Visual Arts in Education
ARTS 133 Three Dimensional Studio I
ARTS 135 Three Dimensional Studio II
ARTS 141 Photography II
ARTS 143 Photography III
ARTS 151 Printmaking II
ARTS 153 Printmaking III
ARTS 191 Independent Study
ARTS 193 Special Topics
ARTS 197 Undergraduate Research
ARTH 112 19th Century European Art
ARTH 114 20th Century Art and Film
ARTH 118 Art in the United States: 1865 – 1945
ARTH 124 Sex, Gender and the Arts
THEA 33 Theatrical Design Fundamentals
THEA 37A Costume Construction and Technology
THEA 37B Light and Sound Technology
THEA 37C Scenery

** The 83-unit rule should be consulted when advising advanced practice courses.*

Studio Art Seminars

Junior Year (2nd. Semester)/Senior Year (10 Units)

Studio Arts students must complete a capstone sequence of three seminars (11 Units) beginning in their second semester of the Junior year.

ARTS 181 Studio Art Seminar I
ARTS 183 Studio Art Seminar II
ARTS 185 Studio Art Seminar III

Coursework for BFA in Graphic Design (136 Units)

Freshman Year (13 units)

ARTS 5 Drawing
ARTS 7 Principles of Two-Dimensional Design and Color
ARTS 9 Principles of Three-Dimensional Design
ARTH 9 Survey of World Art after 1400

Sophomore Year (22 units)

ARTS 45 Digital Photography
ARTS 21 Life Drawing
ARTS 23 Painting I **OR**
ARTS 57 Watercolor Painting
ARTS 141 Photography II **OR**
ARTS 47 Digital Media Survey
ARTS 75 Graphic Design I
ARTS 91 Computer Graphic Design I: Print Media
ARTH 114 20th Century European Art

Junior Year (25 units)

ARTS 77 Graphic Design 2
ARTS 79 Typography
ARTS 95 Computer Graphic Design: Time-Based Media
ARTS 103 Graphic Production
ARTS 171 Graphic Design 3
ARTS 101 Graphic Design History
ARTS 127 Illustration **OR**

ARTS 59 Printmaking I
ARTS 121 Life Drawing II **OR**

ARTS 151 Printmaking II

Senior Year (23 units)

ARTS 173 Graphic Design Seminar
ARTS 175 Senior Graphic Design Seminar
ARTH 116 Contemporary World Art **OR**
ARTH 124 Sex, Gender and the Arts

Advanced Practice

Twelve units minimum*(three-four courses) must be completed from the following list.

ARTS 87,187 Internship
ARTS 89,189 Practicum
ARTS 75 Graphic Design I
ARTS 91 Computer Graphic Design I: Print Media
ARTS 95 Computer Graphic Design I: Time-Based Media
ARTS 101 Graphic Design History
ARTS 123 Painting II
ARTS 125 Painting III
ARTS 127 Illustration
ARTS 131 Visual Arts in Education
ARTS 141 Photography II
ARTS 143 Photography III
ARTS 151 Printmaking II
ARTS 153 Printmaking III
ARTS 191 Independent Study
ARTS 193 Special Topics
ARTS 197 Undergraduate Research
ARTH 112 19th Century European Art
ARTH 114 20th Century Art and Film
ARTH 118 Art in the United States: 1865 – 1945
ARTH 124 Sex, Gender and the Arts

** The 83-unit rule should be consulted when advising advanced practice courses.*

Minor in Studio Art, Graphic Design, Art History

The department of Art offers minor programs in Art History, Studio Art and Graphic Design. Each minor degree requires a minimum of 20 units. No more than 10 transfer units will count toward a minor degree. Students interested in completing a minor degree should contact the Chair of the Department of Visual Arts.

Transfer Requirements

The Department of Visual Arts requires a portfolio with twenty (20) examples of foundational level art works from all students with 10 or more units of transferable art units applying to the Studio Art and Graphic Design programs. Portfolios should be sent directly to the department for review when you send your application to the Office of Admissions. Contact the department Chair or see the department website for portfolio submission criteria and instructions: http://www.pacific.edu/cop/art.

Course Offerings

** Some courses require a studio materials fee.*

Art History

ARTH 7. Survey of World Art to 1400 (4)
A foundational level art history course that surveys the major periods of world art from the Stone Age to onset of the Renaissance in the West during the 14th. Century. This is a lecture-based course using visual images to examine the characteristics and styles of each period.

ARTH 9. Survey of World Art After 1400 (4)
A continuation of ARTH 7, examining painting, sculpture, architecture and the artistic directions in world art from 1400 to the present. Areas to be covered include Renaissance, Baroque, Neoclassicism, Impressionism, Abstract Expressionism, Pop Art and Conceptual Art.

ARTH 108. Renaissance Art and Architecture (4)
The examination of the art (painting, sculpture and architecture of the 16th century in Italy and Northern Europe, focusing on the major artist of the period including Leonardo, Michelangelo, Raphael, Bramante and Titian. The works of art will be discussed in the contexts of their artistic, historical and cultural milieu.

ARTH 110. 17th Century Art - Age of Rembrandt (4)
This course examines the art of the 17th Century, focusing on the masters, including Rembrandt, Vermeer, Hals, Rubens, Valasquez, Caravaggio and Bernini. The central concepts of the period will be introduced: the development of naturalism; new interest in space, time and light; the relationship to tradition examined in the context of the historical and cultural milieu of the period.

ARTH 112. 19th Century European Art (4)
Major artists and artistic movements of the period will be explored including Neoclassicism, Romanticism, Realism and Impressionism. We will analyze the effects of gender upon representation and artistic practice, the effects of politics and class upon visual representation and the impact of urbanization. Painting, sculpture, photography, and architecture will be considered. Art historical methods including formalism, psychoanalysis, Marxism, and gender theory will be explored in our analyses.

ARTH 114. 20th Century Art and Film (4)
Major styles of the 20th century including Fauvism, Cubism, Expressionism, Surrealism, etc., and their appearance in the visual arts, theater design, and film will be explored. We will also evaluate how Western European artists borrowed imagery from other cultures and their relationship to colonialist concerns. We will also consider representations of the body and how this imagery relates to gender constructions. The effects of urbanization upon the artistic enterprise and the development of abstract and non-objective art will also be considered. This course satisfies a requirement of the Film Studies minor.

ARTH 116. Contemporary World Art (4)
This course will explore major artists, styles and movements in world art from 1945 to the present. Gestural abstraction, Pop, Photo Realism,

Happenings, Video, Performance, Conceptual and Political art as well as film are a few of the tends that will be considered. Ever-expanding notions of what constitutes art in this pluralistic era will be examined. This course satisfies a requirement of the Film Studies minor.

ARTH 118. Art in the United States: 1865 – 1945 (4)
This course will explore major painters, sculptors and architects and filmmakers in the U.S. from 1865 – 1945. Topics such as depictions of race and immigration, the impact of technology upon visual perception, art and politics and the impact of gender upon art will be discussed. Expatriate art, the Ash Can School, the Stieglitz Group, The New Deal art projects and other significant styles and trends will also be examined.

ARTH 124. Sex, Gender and the Arts (4)
We will explore the construction of masculinity and femininity in Western art from the Renaissance to the present. The art will be analyzed in the contest of literary, philosophical, medical and legal discourses. We will examine how gender is encoded in visual representation, and often serves as prescriptions rather than descriptions of human behavior.

ARTH 130. Greek Art and Architecture (4)
This course offers an introductory survey of the art and architecture of ancient Greece from the Bronze Age to the Hellenistic period. While exploring the stylistic development of Greek sculpture, painting and architecture, we will examine what this art can tell us about the ancient Greeks and how extensively it has influenced our modern world. This course is offered in alternate years.

ARTH 132. Roman Art and Architecture (4)
An introductory survey of the art and architecture of ancient Etruria and Rome from 600 B.C. to the 4th century A.D. We will explore the role of Roman art and architecture and its Etruscan influences in Roman life and history. Attention will be given to examples of Roman influence that surround us today. Offered in alternate years.

ARTH 87, 187. Internship (2-4)
Off-campus, non-classroom experiences/projects related to art history.

ARTH 89, 189. Practicum (2-4)
Off-campus, non-classroom experiences/projects related to art history.

ARTH 191. Independent Study (2-4)
Enrollment by permission of faculty. Unless indicated, independent study courses may be counted only as electives.

Studio Art

ARTS 3. Visual Arts Exploration (4)
This course is designed as a studio-discussion experience with emphasis upon providing an opportunity to understand the practical as well as the theoretical aspects of the creative process. This course emphasizes a hands-on experience in two-dimensional and three-dimensional activities such as drawing, painting, printmaking sculpture and ceramics.

ARTS 5. Drawing (3)
This course provides an opportunity for the student to attain through intensive involvement a level of competence in drawing. Both visual and conceptual possibilities of drawing will be addressed. Through a variety of materials and exercises students will explore a range of expressive possibilities and learn from traditional approaches.

ARTS 7. Principles of 2-D Design and Color (3)
A foundation course focused upon the understanding and creative use of the elements and principles of design and practical color theory. It aims to build both a working and a conceptual understanding of the ways in which an artist organizes or designs two-dimensional visual artwork. Exercises in visual thinking and the use of traditional principles of composition and two-dimensional media are emphasized.

ARTS 9. Principles of 3-D Design (3)
Through exercises, projects and lectures, this class will identify the principles that underlie the structure of three-dimensional design. Utilizing traditional and non-traditional materials, students will learn the technical skills, vocabulary and critical thinking required to interpret, analyze, evaluate and create in the three dimensional world.

ARTS 11. Photography I (3)
This is an experiential course designed to provide an introduction to photography's technological and aesthetic history providing practical experience in Black and White photography and a working context for understanding 19th Century, Modern and Post-modern photographic theory and aesthetics. This course requires the completion of five assignments that incorporate reflective evaluations of the photographs that you make for the course and see daily. Each assignment is issued through introductory lecture/field demonstrations and completed in the field, studio and darkroom.

ARTS 21. Life Drawing I (3)
The primary emphasis is placed on the development of visual and perceptual skills relative to drawing the human body. Structural, anatomical, formal and expressive factors of the figure are covered in this course. *Prerequisites: ARTS 5.*

ARTS 23. Painting I (3)
This course introduces the concepts, methods and materials of oil painting. Emphasis is on development of personal imagery and parallel with development of skills and conceptual structures of painting. Prerequisites: ARTS 5 Drawing I, ARTS 7 Principles of 2-D Design and Color.

ARTS 35. Ceramics (3)
An introduction to the ceramic process: clay, glaze and firing. Students will explore a variety of problems using the potter's wheel and hand-building techniques to discover the expressive potential of clay.

ARTS 37. Sculpture (3)
An introduction to the concepts and creative methodologies of sculpture applied through a series of assignments. A variety of sculptural media will be explored (clay, wood, plaster, metal, etc.) Students will learn to use media and appropriate tools necessary for the assigned projects. *Prerequisites: ARTS 9 Principles of 3-D Design*

ARTS 45. Digital Photography (3)
This course provides a foundation for the historical, technical and aesthetics of digitally based photography through a series of applied assignments. Included are practical assignments for working with digital cameras, scanners and a selection of software for image editing and printing.

ARTS 47. Digital Media Survey (3)
This course introduces students to the digital tools used by artists. In lecture/discussion the historical and theoretical aspects of the genre are explored. In the studio/lab the basics of several computer applications are taught (Mac Platform.) Aesthetic and conceptual concerns are incorporated into the projects that teach students skill in the medium.

ARTS 57. Watercolor Painting (3)
Through demonstrations, readings, discussions and studio work this course introduces students to the materials, techniques, traditions and contemporary uses of transparent watercolor painting. Aesthetic and conceptual concerns are incorporated into the projects that facilitate the development of skill with the media and the creative exploration of visual ideas. *Prerequisite: ARTS 5.*

ARTS 59. Printmaking I (3)
An exploratory course designed to introduce the history, processes and techniques of basic relief and intaglio printmaking. The aim is to facilitate and demystify the technical nature of the processes and focus on using the techniques for artistic ends. *Prerequisites: ARTS 5,7.*

ARTS 121. Life Drawing II (3)
This course is designed to provide the student an opportunity to build upon the experiences gained

in Figure Drawing I. This course emphasizes personal expression and advanced drawing from the nude figure. *Prerequisite: ARTS 21.*

ARTS 123. Painting II (3)
This is a studio course designed to build upon the experiences gained in beginning drawing and painting. Instruction will focus upon problem solving using traditional and contemporary media and solutions. Added emphasis will be placed upon the development of personal style and expression. *Prerequisites: ARTS 5, ARTS 23.*

ARTS 125. Painting III (3)
Open to the advanced painting student with the added emphasis placed upon the student setting and accomplishing personal goals. Emphasis is placed upon portfolio development and exhibition. *Prerequisites: ARTS 123.*

ARTS 127. Illustration (3)
Designed to expose the student to illustration as applied to the commercial field. A variety of media will be employed to render specific assignments. *Prerequisite: ARTS 21,23.*

ARTS 131. Visual Art in Education (3)
This course is designed to assist the student in developing an understanding of the visual arts and how they interface with children's development through age 14. Assignments, readings and discussion related to concepts and processes, aesthetic perception, creative perception, visual arts heritage and aesthetic valuing will be given. Junior standing is recommended.

ARTS 133. 3-D Studio I (3)
Designed to afford students the opportunity to build on the principles introduced from ARTS 35 and ARTS 37. Students will be challenged with additional methods and materials applicable to 3-D studio practice. Students will explore contemporary trends in art with an emphasis on the interaction between concept and technique. Prerequisite: ARTS 35, ARTS 37. *Prerequisite: ARTS 133*

ARTS 135. 3-D Studio II (3)
Open the advanced Studio Art major for the development of a portfolio of three-dimensional artworks. Students will be encouraged to further define their artistic concepts, goals and intentions in addition to taking part in studio management.

ARTS 141. Photography II (3)
This is an experiential course designed to provide quality contact with professional resources (human and material) and involve photographers in a selection of assignments exemplary of the larger field of professional photography. This class will undertake five assignments that involve studio visits, extensive fieldwork and in class activities that provide publication experience through the creation of press ready and web ready photographic materials. *Prerequisite: ARTS 11.*

ARTS 143. Photography III (3)
Designed to provide students with foundational work necessary for graduate studies in photography or entry level positions in the field. Emphasis will be placed upon studio management and portfolio development. *Prerequisite: ARTS 141.*

ARTS 151. Printmaking II (3)
An intermediate level course designed to select and focus upon one process introduced in Printmaking I. The student is encouraged to conduct historical, technical and aesthetic research to provide rigor to their investigation and completed work. *Prerequisite: ARTS 150.*

ARTS 153. Printmaking III (3)
This course is designed to provide foundational work for students considering graduate studies in printmaking and related processes. Emphasis will be placed upon working closely with faculty and studio management and portfolio development. *Prerequisites: ARTS 150,151,153.*

ARTS 181. Studio Art Seminar I (3)
This is the first of three studio art seminars preparing art students for graduate study or a professional art career. The course provides a variety of experiences for the advanced studio art student. Intensive studio work in several areas including readings/discussions, writing, critiques and field trips make up the conceptual/theoretical and studio components of the course. Students learn about the professional practice of the artist and are guided through the development of a professional portfolio and self-promotional materials. *Prerequisite: The completion of all Level Two coursework.*

ARTS 183. Studio Art Seminar II (3)
This is the second of three courses preparing Studio Art BFA candidates for graduate study or for a professional art career. The course provides a variety of experiences for the advanced studio art student including self-directed studio work, intensive critique, theory readings/discussions, independent research and field trips and updating self-promotional materials and presenting a junior exhibition. *Prerequisites: Studio Art Seminar I ARTS 181.*

ARTS 185. Studio Art Seminar III (4)
This is the capstone studio seminar course preparing BA and BFA candidates for graduate study or for a professional art career. Intensive studio work in the student's concentration, research, readings, writing, discussion/critiques and field trips define the activities undertaken through this course. Emphasis will be placed upon preparing a senior thesis, refining a professional portfolio and updating self-promotional materials and presenting a senior exhibition. *Prerequisites: ARTS 183 Studio Art Seminar II.*

ARTS 87, 187. Internship (2-4)
Off-campus, non-classroom experience applying the studio arts in a professional context.

ARTS 89, 189. Practicum (2-4)
On-campus, non-classroom experiences/projects related to discipline-specific studio arts.

ARTS 191. Independent Study (2-4)
Enrolled by permission of the faculty only. Unless indicated, independent study courses may be counted only as electives. IS Contracts must be completed by student and faculty and approved by the department Chair.

ARTS 193. Special Topics (3-4)

Graphic Design

ARTS 75. Graphic Design I (3)
Designed as a beginning course introducing a broad and thorough exposure to the graphic design field. *Prerequisite: ARTS 5,7.*

ARTS 77. Graphic Design II (3)
Designed to further and expand the skills and knowledge incorporated in Graphic Design I. More advanced problems with the attendant upgrading of professional competency and solutions. *Prerequisites: ARTS 75.*

ARTS 79. Typography (3)
Designed to facilitate a deeper understanding of the art of typography and extend a students knowledge of its application in graphic design and as a creative, illustrative tool. *Prerequisite: ARTS 7.*

ARTS 91. Computer Graphic Design I: Print Media (3)
This course will explore computer-assisted graphic design and publication. Students will be encouraged to examine and develop creative solutions for problems in graphic design and methods of publishing in print utilizing software applications pertinent to graphic design and contemporary publishing. *Prerequisites: May be taken concurrent with ARTS 75*

ARTS 95. Computer Graphic Design II: Time Based Media (3)
This course will examine and develop projects using computer-generated imagery and time-based software applications. Applications include, but are not limited to digital video editing, interactive multi-media and the World Wide Web. *Prerequisite: ARTS 75,95 or permission from Professor.*

ARTS 101. History of Graphic Design (4)
This course is a survey of graphic communication introduced by formal analysis of major works of graphic design and their impact upon and influence by, the major events of the time. This course will survey the significant events in communication and graphic design from Gutenberg to the present. This course will require

the participation in lecture/presentation, research, writing and studio projects.

ARTS 103. 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 will be explored. Prerequisite: ARTS 7.

ARTS 171. Graphic Design III (3)
This course is designed as an intensive studio involvement. Full concentration is brought to bear on the design processes, concepts and professional presentation of work. *Prerequisite: ARTS 77.*

ARTS 173. Graphic Design Seminar (3)
Designed to provide a variety of in depth experiences for students who are pursuing the BFA degree in the area of graphic design. Open only to BFA majors in graphic design with junior standing.

ARTS 175. Senior Graphic Design Seminar (4)
The culminating experience for all graphic design majors, this course is designed as an intensive investigation focused upon selected graphic design problems, professional portfolio preparation and research of the graphic design field. Students will be encouraged to build upon and further explore previous experiences and areas of interest. *Prerequisite: ARTS 173.*

ARTS 191. Independent Study (2-4)
Enrolled by permission of the faculty only. Unless indicated, independent study courses may be counted only as electives. IS Contracts must be completed by student and faculty and approved by the department Chair.

ARTS 87, 187. Internship (2-4)
Off-campus, non-classroom experience applying graphic design in a professional context.

ARTS 89, 189. Practicum (2-4)
On-campus, non-classroom experiences/projects related to graphic design.

ARTS 193. Special Topics (3-4)

The Department of Visual Arts reserves the right to copy, document or hold student work in its archives for future program accreditation reviews. Student property left on the premises after the semester's end will be subject to disposal.

Cross-Disciplinary Majors and Programs

The College of the Pacific offers a variety of cross-disciplinary majors in which two areas of study are combined. The College also offers multi-disciplinary majors such as liberal studies which draw upon the resources of several departments and programs. The cross-disciplinary programs are directed by faculty members from the cooperating 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, Geosciences, 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.

Environmental Studies Major (B.A.)

Director: Lydia Fox (Geosciences)

The environmental studies major is a liberal arts degree program that provides a multi-disciplinary approach to the environmental issues and concerns that are a hallmark of the late 20th century. It may be especially useful to students who are already pursuing a major in one of the contribution fields, but it may also appeal to students who simply wish to consider the environment and its problems from a variety of perspectives.

The major will normally consist of an 11-course distribution requirement plus a five-course concentration in one of the contributing fields, for example, biology, geosciences or economics. This concentration must be approved by the student's adviser. Depending on the field chosen, the concentration may add three or four courses to the major, which would bring the total to 14 or 15 courses. Instead of a concentration, the student may pursue a second major in one of the contributing fields. The 11-course distribution requirement is as follows:

Area I: Natural Sciences

One course in chemistry: CHEM 23 (4) or CHEM 25 (5).

Two courses in biological sciences from the following:

BIOL 35	Environment: Concepts and Issues
BIOL 41	Introduction to Biology (4)
BIOL 51	Principles of Biology (4)
BIOL 61	Principles of Biology (4)
BIOL 77	Marine Birds and Mammals (4)
BIOL 79	California Flora (4)
BIOL 130	Plant Kingdom (4)

Two courses in earth sciences from the following:

GEOS 41	Environmental Geology (4)
GEOS 43	Environmental Science for Informed Citizens (4)
GEOS 51	Physical Geology (4)
GEOS 53	Geologic Evolution of the Earth (4)
GEOS 55	Physical Geography (4)
GEOS 61	Geology of California (4)
GEOS 144	Geomorphology (4)
GEOS 145	Engineering Geology (4)

Area II: Policy and Resource Management

Three courses from the following:

CIVL 171	Water and Environmental Policy (3)
ECON 157	Environmental and Natural Resource Economics (requires ECON 53) (4)
ECON 171	Political Economy (requires ECON 51 or 55) (4)
GEOS 45	Soil, Water and War (4)
INTL 174	Global Environmental Policy* (4)

**No Prerequisite of POLS 51 required*

Area III: Humanities

Two courses from the following:

ENGL 153	Topics in American Literature after 1865 (Nature Writing) (4)
HIST 52	John Muir's World (4)
HIST 136	American Environmental History (4)
PHIL 35	Environmental Ethics (4)

Area IV: Practicum

An internship with a company or agency dealing with environmental affairs or a senior research paper to be arranged in conjunction with a committee of environmental studies advisers (4).

Independent Study and Independent Research may be conducted under supervision of appropriate faculty. (2-4 credits)

The best approach for students who wish to pursue this major during their freshman year is to choose, in conjunction with an environmental studies adviser, one or two courses from the 11-course distribution requirement and one or two courses from a field in which they might wish to take a concentration or a second major.

Environmental Studies - Minor

Students seeking a minor in environmental studies must complete five courses from the following listing:

Area I: Natural Science

Two courses which are not part of one's major, selected from the following. At least one of the courses needs to be a lab course (L): GEOS 41, GEOS 43, GEOS 61(L), BIOL 35, BIOL 79(L), CHEM 23(L), or CHEM 25(L).

Area II: Policy and Resource Management

Two courses from the following: ECON 157, GEOS 45, INTL 174, CIVL 171.

Area III: Humanities

One of the following: ENGL 153 (Nature Writing), PHIL 35, HIST 52, HIST 136

Chemistry - Biology Major

Directors: Gregg Jongeward (Biology), Patrick Jones (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, seven courses in chemistry, a year of physics and a year of calculus.

Area I: Biological Sciences (seven courses)

BIOL 51	Principles of Biology
BIOL 61	Principles of Biology
BIOL 101	Genetics
BIOL 175	Ecology or
BIOL 179	Evolution

Three approved electives, excluding BIOL 191 and BIOL 197.

Area II: Chemistry (seven courses)

CHEM 25	General Chemistry
CHEM 27	General Chemistry
CHEM 121	Organic Chemistry
CHEM 123	Organic Chemistry
CHEM 161	Physical Chemistry I or
CHEM 169	Elements of Physical Chemistry

Two approved electives, excluding CHEM 191 and CHEM 197.

Area III: Physics (one year of course work)

PHYS 23 and 25-General Physics or PHYS 53 and 55-Principles of Physics

Area IV: Mathematics (one year of course work in calculus, MATH 51 and 53).

Area V:

Research experience in biology or chemistry is also recommended.

For students pursuing this major during their freshman year, it is recommended that they take basic courses in biology, chemistry and mathematics as well as general education Pacific Seminar courses.

Gender Studies

The Gender Studies Program at Pacific is a thriving interdisciplinary consortium of faculty and students committed to both a curricular and cultural environment supportive of the study of gender. We are interested in how gender intersects with definitions of nationality, race, ethnicity, and class; and how gender identities are constantly redefined over time. By exploring the relationship between gender identity and cultural meaning, we prepare students to think comparatively, structurally and critically about their experiences and impact on the world. The dialogue we foster among the liberal arts, natural sciences and the professions enriches the intellectual life of Pacific's students and faculty, as well as our surrounding community.

Gender Studies includes a minor which is comprised of five courses (20 units). The student must take the core course, GEND 11 – Introduction to Gender Studies. The program requires that each of the remaining four courses, only two can be from the same department. The Director of the Gender Studies Program serves as the adviser for all minors.

Currently, Gender Studies courses include the following:

GEND 11. Introduction to Gender Studies

This course explores the social construction of masculinities and femininities throughout history and in the contemporary world. Students will learn about the differences between sex and gender, the relationship of gender to power, and the ways in which gender is inscribed in various cultural discourses and practices. A multi-disciplinary analysis will be incorporated throughout the course.

Please see the appropriate departments for course descriptions of the following:

ARTH 112	19th Century European Art
ARTH 124	Sex, Gender, and the Arts
CLAS 120	Sexuality in Greek Society
CLAS 122	Sexuality in Roman Society
ENGL 25	Desire/Power/Gender
ENGL 125	Critical Colloquium
ENGL 127	Contemporary Critical Issues
GEND 191	Independent Study
HIST 135	Women in Time and Place
HIST 133	Women in United States History
PSYC 66	Human Sexuality
SOCI 123	Sex and Gender
SPTS 141	Sports in America
RELI 44	Sex, Sin, and Salvation

There are special topics courses, frequently offered, which may be included toward the minor requirement.

Geophysics Major

Directors: James Hetrick, Curtis Kramer

The Department of Physics and the Department of Geosciences 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, five courses in geosciences, as well as course work in mathematics, chemistry, civil engineering and computer science.

Area I: Physics (six courses)

PHYS 53	Principles of Physics I
PHYS 55	Principles of Physics II
PHYS 101	Electricity and Magnetism
PHYS 161	Thermal Physics
PHYS 181	Classical Mechanics

Area II: Geology (five courses)

GEOS 51	Physical Geology
GEOS 100	Mineralogy
GEOS 110	Igneous and Metamorphic Petrology, or
GEOS 112	Sedimentary Petrology
GEOS 114	Structural Geology
GEOS 161	Geologic Field Methods

Area III: Additional required course work

CHEM 25	General Chemistry
CHEM 27	General Chemistry
CIVL 130	Fluid Mechanics
MATH 37	Probability and Statistics
MATH 51	Calculus I
MATH 53	Calculus II

MATH 55	Calculus III
MATH 57	Ordinary Differential Equations

One semester of course work of computer programming

For students pursuing this major during their freshman year, it is recommended that they take GEOS 51, calculus courses, general chemistry and Pacific Seminars I and II.

Liberal Studies Major

Director: Martha Bowsky

The Department of Religious and Classical Studies offers the Liberal Studies major, which is designed for students seeking a diversified major program within College of the Pacific. It includes a breadth requirement, core major requirements, and a disciplinary or interdisciplinary concentration.

There is no typical first-year program, but all fresh(wo)men who are eligible must take Pacific Seminars I and II.

The Liberal Studies major requires a minimum of twelve courses that fulfill the requirements of the general education program, and eleven courses that satisfy core major requirements and those of a disciplinary or interdisciplinary concentration, for a total of twenty-three courses and eighty-two units.

Contact the Director for information on courses which meet the following requirements. The most recent worksheet is posted on the web, at uop.blackboard.com.

Area I: Language Arts
(five courses, minimum 18 units)

1. A course in composition or Pacific 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

Area II: 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

Area III: Humanities/Social Studies
(seven courses, minimum 23 units)

10. A course in the development of civilization
11. A course in American history and institutions
12. A course in global/intercultural studies or Pacific Seminar II
13. A course in multicultural/ethnic/ gender studies
14. A humanities elective or course in intercultural/international studies
15. A course in individual/interpersonal behavior
16. A humanities/social science elective

Area IV: Performing Arts
(three courses, minimum 11 units)

17. A course in visual arts
18. A course in music
19. A course in performing arts

Area V: Pacific Seminar
(one course, minimum 3 units)

20. Pacific Seminar III

Area VI: Concentration (three or more courses, minimum 11 units)

Concentrations are currently available in: Anthropology, Art (History), Art (Studio), , Classics, Communication, Computer Science, French, General Science, German, Health Science, History, Japanese, Language Arts, Life Science, Literature, Mathematics, Philosophy, Physical Science, Religious Studies, Social Science, Sociology, Spanish, Theatre Arts.

B.S. Chemistry, Emphasis in Medicinal Chemistry

Director: Jianhua Ren

The Bachelor of Science in Medicinal Chemistry is offered with the cooperation and support of the School of Pharmacy and Health Sciences and is designed to prepare the student for employment in the pharmaceutical industry or for graduate studies in health science and related fields.

Pre-Law Program

Director: Cynthia Ostberg

The Political Science Department offers a Pre-Law Program to assist students preparing for law school. The program includes a Pre-Law minor, meetings and programs to provide information about applying to law schools and the Law School Admissions Test, and an adviser for all students preparing for law school. Since law schools prefer that students major in a regular field, the Pre-Law minor is designed to complement the student's major with coursework that helps prepare for the law school admissions testing, and which also strengthens students' skills in areas they will need in law school. The Pre-Law minor is expected to complete six courses for a minimum of 21 units, of which 12 must be taken at Pacific. Required courses for the Pre-Law minor are listed below.

Area I: Law
(two courses required from the following)

BUSI 53	The Legal and Ethical Environment of Business
POLS 122	Constitutional Law
POLS 124	Constitutional Law: American Civil Liberties
POLS 126	Criminal Law

Area II: Communications
(one course required from the following)

COMM 27	Public Speaking
COMM 114	Argumentation and Advocacy

Area III: Philosophy
(one course required from the following)

PHIL 21	Moral Problems
PHIL 27	Fundamentals of Ethics
PHIL 37	Introduction to Logic
PHIL 106	Philosophy of Law

Area IV: Business Administration/ Statistics (one course required from the following)

BUSI 31	Principles of Financial Accounting
MATH 35	Elementary Statistical Inference
SOCI 171/ POLS 133	Quantitative Methods in Social Science

Area V: Social Sciences (one course required from the following)

BUSI 157	Commercial Law
POLS 41	U.S. Government and Politics
PSYC 31	Introduction to Psychology
PSYC 111	Abnormal Psychology
PSYC 167	Psychology and the Law
SOCI 131	Deviant Behavior
SOCI 133	Criminology
SOCI 139	Corrections
SPTS 165	Sports Law

For further information about the Pre-Law Program, the Pre-Law minor, or Law School in general, please feel free to contact Professor Cynthia Ostberg.

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 (i.e., a Commission on Teacher Credentialing approved subject matter program) or passage of a state examination (CSET examinations); a course or successful test on the Constitution of the United States; and specified professional preparation courses offered by the School of Education. The California Basic Educational Skills Test

(CBEST) must be passed before a candidate may student teach. 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 2.5 in the subject matter program, the University of the Pacific GPA, and cumulative GPA.

A student in the college seeking a credential may complete any major program. However, the College offers specified baccalaureate degree programs which fulfill the degree requirements and the subject matter credential requirements simultaneously, if an approved CCTC subject matter program were offered. They are described as "Major Programs for the Single Subject Credential."

Required professional coursework and its prerequisites are:

1. Prerequisites

CURR 134x	Introduction to Educational Computing (2)
CURR 105x	Introduction to Education (3)
EPSY 121x	Learner-Centered Concerns (3)
CURR 130x	Teaching and Assessment (3)
CURR 137x	Teaching English Learners (2)

2. Professional Coursework

Multiple Subject

CURR 131x	Teaching Social Studies (2)
CURR 132x	Teaching Science (2)
CURR 133x	Teaching Mathematics (2)
CURR 135x	Teaching Reading/ Language Arts (MS) (3)
CURR 136x	Literacy Assessment (2)
CURR 158x	Directed Teaching (MS) (10)
CURR 195x	Seminar: Directed Teaching (2)
SPED 125x	Teaching Exceptional Learners (2)

Single Subject

CURR 175	Reading/Language Arts Development (SS) (3)
CURR 179x	Teaching in the Content Areas (4)
CURR 178x	Directed Teaching (SS) (10)
CURR 195x	Seminar: Directed Teaching (2)
SPED 125x	Teaching Exceptional Learners (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. Several approved subject matter programs are no longer available to Freshman students entering Fall 2006.

The following major programs in the College of the Pacific are recommended for students seeking a teaching credential. Some programs are in the process of obtaining approval from the CCTC for their subject matter programs. Please check with the School of Education Curriculum and Instruction Department for current information on subject matter programs.

Major Programs for Single Subject Credential

Details of credential programs may be obtained from the Department of Curriculum and Instruction in the School of Education. Students can pursue single subject credentialing for Art; English; Mathematics; Sciences; Spanish; Physical Education; and Music Education. CSET examinations in these fields will be required, unless students matriculated to Pacific prior to state timelines for eligibility to complete specific subject matter programs based on 1994-95 standards. Some programs are in the process of obtaining approval from CCTC for subject matter programs based on 2003-04 standards.

Single Subject Area Recommended Major Program as of Fall 2005

Foreign Languages	Spanish (B.A.)
Music	Music Education (B.M.) in the Conservatory
Physical Education	Physical Education (B.A.)

The department major programs recommended for the Single Subject areas are described in the departmental sections of this catalog. Students are advised to check with the Department of Curriculum and Instruction, Education Building Room 102, about current subject matter programs. State-approved examinations (CSET) are needed for Single Subject credentialing. Information is available in the School of Education Room 102 or 108.

Social Sciences Major (B.A.)

Adviser: E. Sparks

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*

C. Vierra (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, or physical therapy programs, or medical technology to which they plan to apply.

The University does not list a premedical, predental, 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: D. Maxwell (Biology), C. Vierra (Biology), A. Franz (Chemistry)

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 each of calculus and statistics; and additional coursework in English (one year), behavioral and social sciences and humanities.

*Pre-Dental Program**

Advisers: G. Jongeward (Biology), L. Spreer (Chemistry), M. McCallum (Chemistry), L. Christianson (Biology), D. Maxwell (Biology), L. Wrischnik (Biology), E. Thomas (Biology), G. Lin-Cereghino (Biology), C. Vierra (Biology).

The following courses are suggested as only a minimum preparation for most dental schools: one year of general chemistry; one year of organic chemistry; four semesters of biology; one year of general physics; and one year of English, including one course in composition. Note: One year in English requirement can be met by Pacific Seminar I and II.

Pre-Nursing Program

Adviser: D. Maxwell (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 two sociology courses.

Pre-Physical Therapy Program

Advisers: D. Maxwell (Biology), Margaret Ciccolella (Sport Sciences), Gary Howells (Psychology)

The following courses are suggested as only a minimum preparation for a physical therapist professional education program: 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 one year of English including 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; microbiology; 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.

Medical Technology Program

Adviser: D. Maxwell (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, 1625 Massachusetts Avenue, N.W., Washington, D.C. 20036-2212.

** 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 D. Maxwell, Department of Biological Sciences. Correspondence regarding the other programs in the Pre-Health Professions should be directed to D. Maxwell, Department of Biological Sciences.*

College of the Pacific Faculty

Biological Sciences

Gregg D. Jongeward, 1996, Associate Professor and Chair, B.S., University of Minnesota, 1986; Ph.D., California Institute of Technology, 1993.

Craig A. Vierra, 1995, Associate Professor and Assistant Chair, B.S., University of California, Davis, 1990; Ph.D., University of California, Riverside, 1994.

C. Gregory Anderson, 2002, Assistant Professor, B.A., University of Missouri, Columbia, 1990; Ph.D., University of Tennessee, 2001.

Steven C. Anderson, 1970, Professor Emeritus, B.A., University of California, Riverside, 1957; M.A., San Francisco State College, 1961; Ph.D., Stanford University, 1966.

Mark S. Brunell, 2002, Assistant Professor, B.A., California State University, Fullerton, 1988, M.A., 1991; Ph.D., University of Arizona, 1967.

Lee Christianson, 1967, Professor, B.S., University of North Dakota, 1963; M.A., Southern Illinois University, 1965; Ph.D., University of Arizona, 1967.

Alice S. Hunter, 1970, Professor Emeritus, B.S., Queens College, New York, 1944; M.S., Columbia University, 1946; Ph.D., 1951.

Kirkwood Land, 2004, Assistant Professor, B.S., University of California, Davis, 1992; M.A., University of California, Riverside, 1995; Ph.D., University of California, Los Angeles, 2001.

Geoffrey Lin Cereghino, 2000, Assistant Professor, B.S., University of California, Davis, 1989; Ph.D., University of California, San Diego, 1995.

Joan Lin Cereghino, 2000, Assistant Professor, A.B., Princeton University, 1987; Ph.D., University of California, San Diego, 1992.

W. Desmond Maxwell, 1999, Associate Professor, B.Sc., The Queen's University of Belfast, 1986; Ph.D., 1991.

Dale W. McNeal, 1969, Professor Emeritus, B.A. Colorado College, 1962; M.S., New York Sate College of Forestry at Syracuse University, 1964; Ph.D., Washington State University, 1969.

Anne M. F. Moore, 1998, Associate Professor, B.S., Bates College, 1984; Ph.D., Duke University, 1990.

Richard Tenaza, 1975, Professor, B.A., San Francisco State College, 1964; Ph.D., University of California, Davis, 1974.

Eric O. Thomas, 1993, Associate Professor, B.S., University of California, Riverside, 1984; M.A., 1987; Ph.D., University of California, Berkeley, 1991.

Lisa A. Wrischnik, 2002, Assistant Professor, B.A., University of California, Berkeley, 1986; Ph.D., University of California, San Francisco, 1995.

Chemistry

Elfi Kraka, 2005, Professor and Chair, B.S., University of Cologne, 1981; Ph.D., University of Cologne, 1984.

Patrick R. Jones, 1974, Professor, B.A., University of Texas, 1966; B.S., 1966; Ph.D., Stanford University, 1971.

Elizabeth F. Day, 2000, Assistant Professor, B.S., Seattle Pacific University, 1992; Ph.D., Indiana University, 1997.

Andreas Franz, 2002, Assistant Professor, B.S., Universitaet-Gesamthochachule Siegen, 1994; M.S., University of the Pacific, 1997; Ph.D., University of the Pacific, 2000.

Uta Hellman-Blumberg, 2001, Assistant Professor, "Diplom Ingenieur, Fresenius College Wiesbaden, 1986; M.S., California State University, Long Beach, 1989; Ph.D., University of California, Davis, 1994.

C. Michael McCallum, 1994, Associate Professor, B.S., Michigan State University, 1988; Ph.D., University of California, Berkeley, 1993.

Jianhua Ren, 2002, Assistant Professor, B.S., Beijing Normal University, 1986; M.S., Auburn University, 1994; Ph.D., Purdue University, 1999.

Silvio Rodriguez, 1978, Professor, M.S., University of California, Santa Barbara, 1970; Ph.D., 1978.

Vyacheslav V. Samoshin, 1999, Professor, M.S., Lomonsov Moscow State University, USSR, 1974; Ph.D., Lomonsov Moscow State University, 1982; D.Sci., Lomonsovo Moscow State University, 1991.

Larry O. Spreer, 1970, Professor, B.S., University of Kansas, 1965; Ph.D., University of Colorado, 1969.

Communication

Qingwen Dong, 1996, Associate Professor and Chair, B.A., Beijing Second Foreign Language Institute, 1983; M.A., University of Missouri-Columbia, 1990; Ph.D., Washington State University, 1995.

Marlin Bates, 2005, Assistant Professor, B.A., University of the Pacific, 1996; M.A., University of the Pacific, 1999; Ph.D., Pennsylvania State University, 2004.

Kenneth D. Day, 1987, Professor, College of the Pacific, B.S., Indiana University, 1970; M.A., 1975; M.S., 1976; Ph.D., 1980.

Carol Ann Hackley, 1985, Professor, B.A., California State University, Sacramento, 1961; M.A., The Ohio State University, 1984; Ph.D., 1985.

Randall J. Koper, 1985, Professor, B.A., Michigan State University, 1974; M.A., 1984; 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.

Economics

Peter J. Meyer, 1985, Associate Professor, and Chair, A.B., Harvard University, 1972; Ph.D., University of California, Berkeley, 1979.

Benjamin N. Dennis, 1996, Associate Professor, B.A., Michigan State University, 1990; Ph.D., Harvard University, 1996.

Dennis O. Flynn, 1979, Professor, B.S., University of Nevada, 1968; M.S., 1972; Ph.D., University of Utah, 1977.

William E. Herrin, 1985, 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.

Sharmila K. King, 2001. Assistant Professor, B.A., University of York, England, 1992; M.A., San Francisco State University, 1996; Ph.D., University of California, Davis, 2001.

J. Farley Ordovensky Staniec, 1993, Associate Professor, B.S., University of Delaware, 1986; M.A., Duke University, 1988; Ph.D., Duke University, 1992.

Lori D. Warner, 1987, Associate Professor, B.S., University of Nevada, Reno, 1975; Ph.D., University of Utah, 1986.

English

Diane M. Borden, 1971, Professor and Chair, 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, Interim Dean, Professor Emeritus, B.A., Northern Arizona University, 1959: Ph.D., Indiana University, 1965.

Gregg Camfield, 1996, Professor, A.B., Brown University, 1980; Ph.D., University of California, Berkeley, 1989.

Cynthia Dobbs, 1998, Associate Professor, B.A., Pomona College, 1987; Ph.D., University of California, Berkeley, 1998.

Courtney Lehmann, 1998, Associate Professor, B.A., University of North Carolina at Chapel Hill, 1991; M.A., Indiana University, 1994; Ph.D., 1998.

Camille Norton, 1994, Associate Professor, B.A., University of Massachusetts, 1983; A.M., Harvard University, 1987; Ph.D., 1992.

Gilbert W. Schedler, 1967, Professor Emeritus, B.A., Concordia College, 1957; B.D., Concordia Seminar, 1960; M.A., Washington University, 1963; Ph.D., University of Chicago, 1970.

Amy Elizabeth Smith, 1999, Associate Professor, B.A., West Virginia University, 1986; M.A., The Pennsylvania State University, 1991; Ph.D., 1998.

Eric A. Sonstroem, 2001, Assistant Professor, B.A., Westeyan University, 1988; M.A., Indiana University, 1990; Ph.D., 1999.

Douglas Tedards, 1982, Assistant Dean, Associate Professor, B.A., Vanderbilt University, 1966; M.A., University of Florida, 1968; D.A., University of the Pacific, 1976.

Xiaojing Zhou, 2002, Associate Professor, B.A., Department of English Language and Literature, College of Foreign Languages and Literature, Shandong University, China, 1974; M.A., Department of English, University of Regina, Saskatchewan, Canada, 1989; Ph.D., Department of English, Memorial University of Newfoundland, St. John's, Canada, 1995.

Film Studies

Diane M. Borden, 1971, Professor and Chair, B.A., Lone Mountain College, 1964; M.A., San Francisco State University, 1966; Ph.D., University of California, Santa Cruz, 1971.

Katherine Golsan, 1994, Professor, B.A., Colgate University, 1976; M.A., University of North Carolina, 1980; Ph.D. University of Michigan, 1988.

Courtney Lehmann, 1998, Associate Professor, B.A., University of North Carolina at Chapel Hill, 1991; M.A., Indiana University, 1994; Ph.D., 1998.

Jie Lu, 1996, Assistant Professor, B.A., Beijing Second Foreign Language Institute, Beijing, 1982; M.A. in English and American Literature, University of Massachusetts, Amherst, 1990; Ph.D. in Chinese Literature, Stanford University, 1996.

Merrill Schleier, 1982, Professor, B.A., The City College of New York, 1973; M.A., University of California, Berkeley, 1976; Ph.D., 1983.

Geosciences

Lydia K. Fox, 1990, Associate Professor and Chair, BSE, Princeton University, 1981; Ph.D., University of California, Santa Barbara, 1989.

Kurtis Burmeister, 2005, Assistant Professor, B.A., University of California at Santa Barbara, 1996; M.A., 2000; Ph.D., University of Illinois, 2005.

J. Curtis Kramer, 1975, Professor Emeritus, B.S., University of California, Davis, 1968; Ph.D., 1976.

Eugene Pearson, 1971, Professor, B.A., Pomona College, 1967; Ph.D., University of Wyoming, 1972.

Laura Rademacher, 2005, Assistant Professor, B.S., University of Wisconsin, Madison; Ph.D., University of California, Santa Barbara, 2002.

History

Kenneth Albala, 1994, Associate Professor and Chair, B.A., George Washington University, 1986; M.A., Yale University, 1987; M. Phil., Columbia University, 1990; Ph.D., 1993.

Caroline H. Cox, 1998, Associate Professor, B.A., University of California, Berkeley, 1990; M.A., 1993, Ph.D., 1997.

Gesine Gerhard, 1999, Assistant Professor, B.A., Free University of Berlin, 1991; M.A., Technical University of Berlin, 1994; Ph.D., University of Iowa, 1999.

Gregg Rohlf, Assistant Professor, 2001, B.A. Luther college, 1988; M.A., University of Michigan, 1993; Ph.D., University of Iowa, 1999.

Edith E. Sparks, 1999, Senior Associate Dean, Assistant Professor, B.A., University of California, Berkeley, 1991; M.A., University of California, Los Angeles, 1996; Ph.D., 1999.

William Swaggerty, 2001, Professor, B.A., The Colorado College, 1973; Ph.D., University of California at Santa Barbara, 1981.

Mathematics

Aleksei I. Beltukov, 2004, Assistant Professor, B.S., Mendeleyev University, 1994; M.S., Mendeleyev University, 1996; M.S., Tufts University, 1996; Ph.D., Tufts University, 2004.

Deann J. Christianson, 1967, Professor and Chair, B.A., University of North Dakota, 1963; M.S., University of Arizona, 1967; Ed.D., University of the Pacific, 1983.

Mouchumi Bhattacharyya, 2000, Assistant Professor, B.S., Cotton College, 1988; M.S., Delhi University, 1990; M.Phil., 1992; Ph.D., University of Wisconsin, Milwaukee, 1999.

Christopher Goff, 20002, Assistant Professor, B.S., B.A., University of Texas, Austin, 1993, M.A., UC, Santa Cruz, 1995, Ph.D., UC Santa Cruz, 1999.

Larry Langley, 2001, Assistant Professor, B.S., U.C. Santa Cruz, 1988, A.M. Dartmouth College, 1990, Ph.D., Dartmouth College, 1993.

Sarah Merz, 1995, Associate Professor, B.A., Whitman College, 1991, M.S., University of Colorado at Denver, 1994; Ph.D., 1995.

Dennis K. Parker, 1985, Associate Professor, BSE, University of Oklahoma, 1974; MNS, 1978; Ph.D., 1985.

Keith E. Whittington, 1987, Professor, B.S., University of California, Riverside, 1975; Ph.D., University of Texas, 1980.

Walter S. Zimmermann, 1970, Professor, B.A., University of California, Los Angeles, 1960; Ph.D., University Ph.D., University of California, Berkeley, 1966.

Modern Language and Literature

Katherine Golsan, 1994, Professor and Chair, B.A., Colgate University, 1976; M.A., University of North Carolina, 1980; Ph.D. University of Michigan, 1988.

Martin Camps, 2005, Assistant Professor, B.A., Instituto de Comunicacion y Filosofia, Mexico City, 1997; M.F.A., University of Texas, El Paso, 1999; Ph.D., University of California, Riverside, 2003.

Zeljko Cipris, 2000, Assistant Professor, M.A., Columbia University, 1987; M.Phil., 1987; Ph.D., 1994.

Arturo Giraldez, 1990, Professor, B.A., Universidad Com-plutense de Madrid, 1976; M.A., 1979; Ph.D., University of California, Santa Barbara, 1990.

Susan C. Giraldez, 1994, Associate Professor, B.A., University of the Pacific, 1980; M.A., Middlebury College, 1982; Ph.D., University of California, Santa Barbara, 1992.

Christophe Ippolito, 2003, Assistant Professor, M.A. in Philosophy and French 1995, PhD. In Philosophy, Columbia University, 1998.

Jie Lu, 1996, Associate Professor of Chinese, B.A., Beijing Second Foreign Language Institute, Beijing, 1982; M.A. in English and American Literature, University of Massachusetts, Amherst, 1990; Ph.D. in Chinese Literature, Stanford University, 1996.

Traci Roberts-Camp, 2005, Assistant Professor, B.A., Willamette University, 1999; M.A., University of California, Riverside, 2001; Ph.D., 2004.

Francis M. Sharp, 1979, Professor, B.A., University of Missouri, 1964; M.A., University of California, Berkeley, 1969; Ph.D., 1974.

Philosophy

Lou J. Matz, 1999, Associate Professor and Chair, B.A., University of the Redlands, 1984; M.A., University of California, San Diego, 1987; Ph.D., 1992.

James D. Heffernan, 1972, Professor, B.A., Fordham University, 1964; M.A., 1967; Ph.D., University of Notre Dame, 1976.

Ray Rennard, 2005, Assistant Professor, B.A., University of Pittsburgh, 1992; Ph.D., Johns Hopkins University, 2003.

Eleanor E. Wittrup, 1996, Assistant Professor, B.A., Wellesley College, 1986; MTS, Harvard University Divinity School, 1989; Ph.D., University of California, San Diego, 1994.

Physics

James E. Hetrick, 1997, Associate Professor and Chair, B.S., Case Western Reserve University, 1982; Ph.D., University of Minnesota, 1990.

Joseph F. Alward, 1979, Assistant Professor, B.A., Sacramento State College, 1968; M.A., University of California, Davis, 1973; Ph.D., 1976.

Daniel Birmingham, 2005, Assistant Professor, B.A., Trinity College, Dublin, 1998; Ph.D., 1985.

Political Science

Brian E. Klunk, 1987, Associate Professor and Chair, B.A., Pennsylvania State University, 1977; M.A., University of Virginia, 1980; Ph.D., 1985.

Cynthia Ostberg, 1994, Associate Professor, B.A., University of California, Berkeley, 1985; M.A., Northern Illinois University, 1991; Ph.D., 1995.

Susan Sample, 1999, Associate Professor, B.A., University of Missouri, 1991; Ph.D., Vanderbilt University, 1996.

Dari Sylvester, 2005, Assistant Professor, B.A., Trinity College, 1998; M.A., State University of New York, Stony Brook, 2002; Ph.D., 2005.

Psychology

Roseann Hannon, 1970, Professor and Chair, B.S., Frostburg State College, 1965; M.S., Pennsylvania State University, 1967; Ph.D., University of South Dakota, 1970.

Kenneth L. Beauchamp, Professor, 1969, Professor, B.A., Whitman College, 1962; M.A., Claremont Graduate School, 1965; Ph.D., 1968.

John C. Borrero, 2004, Assistant Professor, B.S., Louisiana State University, 1997; M.S., University of Florida, 2001; Ph.D., University of Florida, 2004.

Gary N. Howells, 1971, Professor, B.A., Oregon State University, 1964; M.A., University of Utah, 1970; Ph.D., 1971.

Carolynn S. Kohn, 2004, Assistant Professor, B.A., University of California at Santa Barbara, 1991; M.A., Hahnemann University, 1996; Ph.D., Hahnemann University, 2000.

Douglas W. Matheson, 1968, Professor, B.A., Whitman College, 1961; M.A., Claremont Graduate School, 1966; Ph.D., 1967.

Religious and Classical Studies

Lynn Kraynak, 1987, Associate Professor and Chair, B.A., University of California, Berkeley, 1973; M.A., 1976; Ph.D., 1984.

George Randels, Jr., 1996, Associate Professor and Chair, B.A., University of Iowa, 1984; MAR, Yale University, 1987; Ph.D., University of Virginia, 1994.

Martha W. Bowsky, 1984, Professor, B.A., University of North Carolina, 1972; M.A., 1974; Ph.D, University of Michigan, 1983.

Dayna Kalleres, 2005, Assistant Professor, B.A., Indiana University, 1993; M.A., Brown University, 1999; Ph.D., 2002.

Tanya Storch, 2000, Associate Professor, B.A., M.A., University of St. Petersburg, 1988; Ph.D., University of Pennsylvania, 1995.

Sociology

George H. Lewis, 1970, Professor and Chair, B.A., Bowdoin College, 1965; M.A., University of Oregon, 1968; Ph.D., 1970.

Roy Childs, 1973, Professor, B.S., University of Denver, 1963; MBA, 1964; M.A., Stanford University, 1970; Ph.D., 1973.

Mamie Darlington, 1992, Associate Professor Emeritus, B.A., Spelman College; MSW, Atlanta University, 1960; Ph.D., Georgia State University, 1986.

Marcia Hernandez, 2005, B.A., University of California, Santa Barbara, 1994; Ph.D., State University of New York, Albany, 2005.

John C. Phillips, 1976, Professor, B.A., San Jose State College, 1963; M.A., 1965; Ph.D., University of Oregon, 1974.

Sport Sciences

Christopher Snell, 1990, Professor and Chair, B.A., Bedford College, England, 1987; M.S., University of Oregon, 1990.; Ph.D., 1993.

Becky Beal, 1995, Professor, B.A., Pomona College, 1985; M.A., University of Northern Colorado, 1987; Ed.D., 1992

John G. Boelter, 1989, Associate Professor, B.A., University of Southern California, 1969; Ph.D., 1974.

Margaret E. Ciccolella, 1985, Professor, B.S., University of Colorado, 1970; M.S., Brigham Young University, 1972; Ed.D., 1978; J.D., Humphreys College of Law, 1993.

Virgil Kitchen, 2005, Assistant Professor, B.A., California State University, Chico, 1996; M.A., 1997; Ed.D., University of the Pacific, 2005.

Linda Koehler, 1989, Associate Professor, B.A., Purdue University, 1971; M.S., University of New Mexico, 1975; Ph.D., University of Illinois, 1982.

Linda D. Lyman, 2000, Assistant Professor, B.A., University of California, San Diego, 1985; M.A., Michigan State University, 1991; Ph.D., 1996.

Chris Pond, 1990, Instructor, B.S., Utah State, 1988; M.S., University of Arizona, 1990.

J. Mark VanNess, 1999, Associate Professor, B.S., Wheaton College, 1990; M.S., California State University, Sacramento, 1993; Ph.D., Florida State University, 1997.

Sharon A. West, 1998, Associate Professor, B.A., Fresno State, 1992; M.A., University of the Pacific, 1994; Ph.D., University of Miami, 1999.

Theatre Arts

Gary Armagnac, 2001, Associate Professor and Chair (Producer, Artistic Director), B.A., Speech and Theatre, Iona College, 1974; M.F.A., Acting and Directing, California State University, Long Beach, 1993.

Randall A. Enlow, 2003, Assistant Professor, B.A. University of Akron 1987, MFA Case Western Reserve University, 1993.

Cathie McClellan, 2002, Assistant Professor, B.A., Brigham Young University, 1975; M.F.A., University of Arizona, 1989.

Lisa Tromovitch, 2005, Assistant Professor, B.A., Dartmouth College, 1983; M.F.A., Southern Methodist University.

William J. Wolak, 1975, Professor, B.S., Central Connecticut State College, 1959; M.A., St. Louis University, 1961; Ph.D., Tulane University, 1967.

Visual Arts

Daniel Kasser, 1984, Professor and Chair, B.A., Humboldt State University, 1980; MFA, University of New Mexico, 1991.

Trent Burkett, 2002, Assistant Professor, B.A., California State University, Sacramento 1998; M.F.A. University of Minnesota, Twin Cities, MN, 2000.S.

Brett DeBoer, 1999, Associate Professor, BFA, University of Northern Colorado, 1977; M.S., Parsons School of Design, 1985; MFA, Rochester Institute of Technology, 1989.

Barbara Flaherty, 1988, Associate Professor, B.A., Hamline University, 1962; M.A., University of California, Davis, 1966.

Lucinda Kasser, 1995, Associate Professor, B.A., Humboldt State University, 1979; M.A., California State University, Sacramento, 1989.

Jennifer Little, 2005, Assistant Professor, B.F.A., Washington University, 2001; M.F.A., University of Texas, Austin, 2005.

Merrill Schleier, 1982, Professor, B.A., The City College of New York, 1973; M.A., University of California, Berkeley, 1976; Ph.D., 1983.

George Wenzel, 1991, Associate Professor, B.A., University of Florida, 1978; MFA, Rochester Institute of Technology, 1989.

conservatory of music

Dean
Stephen C. Anderson
School Telephone
209.946.2415
Website
www.pacific.edu/conservatory

Contents

A professional school educating and training musicians for the highest levels of artistic performance, creative endeavor, and intellectual inquiry.

Mission

The mission of the Conservatory of Music is to provide superior educational opportunities in music so students can prepare for successful professional careers and to become artistic leaders of the future, to be a significant musical resource for the University and the community by presenting high quality and diverse forms of the musical arts, and to have a significant impact on the future of music by doing research, creating new music, and being of service to the music profession.

Vision

The Conservatory of Music will be the finest music school possible, one which sustains and communicates traditional musical and educational values through its curricular programs. Simultaneously, the Conservatory will explore, develop, and employ new and innovative means of communicating those values, and will create and present new music in both traditional and developing forms.

Degrees Offered

The Conservatory of Music offers the following degrees and majors: Bachelor of Music in performance, music education, music therapy, music composition, music history, and music management; Bachelor of Arts in music; Master of Arts in music therapy; and Master of Music in music education. Minors in Music Theory and Music History are offered to music majors. A minor in music is available to University students in other majors.

The Master of Education with a concentration in music education is offered through the Gladys L. Benerd School of Education and the Graduate School.

Bachelor of Music

Six areas of professional study are available in the Bachelor of Music degree.

Performance Studies provide students a foundation for pursuing careers as instrumentalists in symphony orchestras, bands, 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, mental health and rehabilitation centers, convalescent homes, correctional facilities, development centers and in the community on contract as specialists in music therapy.

Music Composition provides students with both a strong understanding and a working knowledge of the creative and technical aspects of music. Composition majors go on to a variety of careers including composing, sound design and sound for film, music technology development, conducting, and teaching at the college/university level. The Bachelor of Music in Composition usually leads to graduate study in composition or a related area.

Music History is an academic major within the Conservatory of Music. It has a strong core in the humanities and languages combined with intensive Conservatory training. Students are exposed to a wide range of courses in music history, music theory and the liberal arts. Graduates often go on to graduate school to pursue master's and doctoral degrees which enable them to teach at the university level. Other career options include using a music history specialty as preparation for study as a conductor or music critic; combining music history with performance skills to make a career in the performance of early music; or combining music history with librarianship.

Music Management prepares qualified students for a wide array of career options in recording production and promotion, music products management, 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. 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 oppor-

tunity for students to enroll in a broader spectrum of courses selected from academic areas throughout the University. The Bachelor of Arts in Music degree prepares students for many opportunities including graduate study and various careers in music.

Bachelor of Arts in Music with an Emphasis in Music Management

The Bachelor of Arts in Music with an Emphasis in Music Management offers students the option of pursuing a degree that will prepare them for a range of contemporary music careers in the areas of record company operations, music products management, arts administration, and recording technology. Students pursuing the B.A. in Music with an Emphasis in Music Management also choose a number of elective courses to complement their music studies.

Bachelor of Science in Business Administration with an Emphasis in Arts and Entertainment Management

In addition to and in cooperation with the Conservatory of Music, the Eberhardt School of Business offers options for students interested in careers in a management position in the arts and entertainment industry. Students selecting one of these options study toward 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, visual arts management or theatre arts management. Curricula in these options include courses of study in general education, Business Administration, and Arts and Entertainment Management.

Music History Minor for Music Majors

The Music History minor for music majors is designed for students who wish to pursue additional coursework in the field of music history. It is open to students pursing any music major. Composition, Performance, and Music Education majors can explore more research-oriented courses through the music history minor. The requirements include four upper-division music history courses, two semesters of a foreign language, and a semester of individualized research.

Music Theory Minor for Music Majors

The minor in music theory is available only to music majors. The intent is to offer significant study in music theory as a secondary area for a student already involved in the study of music. It can be combined with any music area except composition, but is particularly useful for majors in performance who are interested in extending their knowledge of music theory to support their performance activities or in expanding their compositional interests. It consists of seven courses including upper division study in music analysis, counterpoint, orchestration and computer 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 perform 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 300, Conservatory Building.

Graduate Study

The Conservatory of Music, through the Graduate School of University of the Pacific, offers the Master of Music in Music Education and the Master of Arts degree in Music Therapy. It also cooperates with the Benerd School of Education and the Graduate School in offering the Master of Education leading to a graduate degree and teaching credential in music. Complete information on these degrees is available in the Graduate School Catalog and from the Conservatory of Music.

The Brubeck Institute

The Brubeck Institute is named for the legendary musician and University of the Pacific alumnus, Dave Brubeck, and is a component of the Conservatory of Music. The mission of the Institute is to build on Dave Brubeck's legacy – quintessentially American in origin, international in scope, and unique in its breadth. Its philosophy of musical styles is inclusive, reflecting the exploratory spirit and social values of the Institute's namesake, involving jazz, contemporary classical music, and interdisciplinary education in subject areas such as ethnic studies, philosophy, and sociology. At the heart of it all is a leaven of the humanities, civil rights, and social justice, values to which Dave Brubeck has dedicated his life.

The Brubeck Institute Fellowship Program is a one-year to two-year performance program for exceptional jazz performers, ages 18-19, who comprise the Brubeck Institute Ensemble. Enrollment is limited to 5 to 7 students, admitted by audition and interview. Internationally known jazz artists and clinicians serve as the faculty for the Institute. The program is designed to provide intensive instruction in jazz performance with numerous performance opportunities in Northern California and beyond. For more information, contact the Institute at 209.946.3970 or visit http://www.pacific.edu/brubeck.

The University is also home to the Brubeck Collection, one of the largest jazz collections in the world. Held in the Holt-Atherton Special Collections Department of the University of the Pacific Library, it contains hundreds of compositions, manuscripts, recordings, photos, writings, and memorabilia. This collection is available for study by students and scholars.

Pacific Music Camp / Brubeck Institute Jazz Camp

Pacific Music Camp and the Brubeck Institute Jazz Camp are summer programs of musical study and performance for junior and senior high school musicians. Daily activities include concert band, orchestra, chorus and piano along with master classes, electives and chamber ensembles. Students have the opportunity to work with top music educators, professional musicians and Conservatory faculty. One-week sessions are offered in the summer for junior high school band and orchestra and senior high school band, orchestra, chorus, jazz and piano. Each week concludes with public performances in the Faye Spanos Concert Hall. For more information, contact Pacific Music Camp, Conservatory of Music, University of the Pacific, 3601 Pacific Ave, Stockton, CA 95211. 209/946-2416. www.pacific.edu/conservatory

Accreditation

The Conservatory is accredited by the National Association of Schools of Music and the American Music Therapy Association. 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 Benerd School of Education.

Pacific's Conservatory of Music and Eberhardt School of Business are designated as Affiliates of the International Music Products Association, otherwise known as NAMM. As a NAMM-Affiliated Music Business Institution (NAMBI), Pacific students are eligible for a range of benefits including admission to the twice-a-year NAMM Convention, annual NAMM student scholarships, and the NAMBI job bank. Pacific is the first school to be designated as a NAMBI Affiliate in the state of California.

Facilities and Equipment

The Conservatory of Music occupies a complex of five buildings. The landmark Conservatory Building, renovated in 1987, houses the 946-seat Faye Spanos Concert Hall, the 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,

master classes 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 and offices, a conference room, student commons and study areas. Owen Hall houses additional classrooms, teaching laboratories, chamber ensemble rehearsal studios and 30 student practice rooms.

The Conservatory Computer Studio for Music Composition features a fully digital environment for the composition of music using computers and new technology. Centered around a digital audio workstation running a Pro Tools HD2 system, the facility includes modular digital multi-track recording, extensive software sound design, detailed audio editing capabilities, fully digital automated mixing, and CD mastering/burning.

The Instructional Media Library is integrated with the William Knox Holt Memorial Library adjacent to the Conservatory complex. It houses state-of-the-art audiovisual equipment for students, faculty and community use. Materials in the library include music books, scores, video tapes and recordings.

Conservatory instruments include Steinway, Bosendorfer, Baldwin, Yamaha and Kawai pianos; a four manual concert pipe organ, a 1991 J. W. Walker tracker-action pipe organ, a Wm. Dowd Harpsichord; and a collection of wind, percussion and orchestral string instruments for student use.

Baccalaureate Degrees

General Requirements

1. All baccalaureate degrees require a minimum of 124 units.
2. All music majors except those in the Bachelor of Arts program are required to satisfy a piano proficiency level 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.
3. Lessons in applied music (principal instrument or voice) must be taken according to 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.
4. All students are required to participate for credit in one major ensemble according to major field specifications. In addition, instrumentalists are required to participate in a major choral ensemble for two semesters.
5. All undergraduate music majors must enroll in Solo Class and remain enrolled according to major field specifications.
6. The Conservatory Academic Regulations Committee must approve any waiver, challenge, substitute or other deviation regarding any curricular requirements of Conservatory of Music degrees. Once a student has matriculated at the University, she or he may not take a core music history or theory course for credit at a junior college. (Core music theory courses are defined as MCOM 10-17 inclusive. Core music history courses are defined as MHIS 11-13 inclusive.) Independent studies in the music history and music theory core curriculum are not permitted.
7. The number of times a student may take a music theory or music history core course is limited to two. Should a student fail to pass a core course after a second attempt, disqualification from the Conservatory will result. Independent studies in the music history and music theory core curriculum are not permitted.

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 Science with a concentration in Arts and Entertainment Management is awarded by the Eberhardt School of Business. A Music Education degree (M.Ed.) is offered in conjunction with the Gladys L. Benerd School of Education.

Admission Requirements

In addition to the academic requirements for admission to the University, Conservatory applicants must perform an audition in their principal performing medium and take a general musicianship and music theory assessment, and composition applicants must submit original compositions. Academic departments may ask prospective students to appear for an interview as part of the admissions process when such an interview appears appropriate and would assist in determining the applicant's qualifications for admission. Auditions are held throughout the academic year. Students unable to appear in person may substitute a recorded audition. Audition information and arrangements should be requested from the Conservatory Office of Student Services.

General Education Requirement

Conservatory of Music students must complete the requirements of the University-wide general education program. Entering freshmen must take Pacific Seminars I, II and III. All students must meet the requirements of the breadth program. Breadth courses are chosen by the student and approved by her or his faculty adviser. Please see the general education section of this catalog for complete details.

Placement Examinations on Entrance

Music majors with a concentration in piano or voice must perform a teacher placement audition. This will also determine the applied level of study. A placement examination in performance will be given to all transfer students, and coursework in other areas of music will be evaluated by the appropriate department for articulation to Conservatory degree programs.

Course Numbering

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.

Courses numbered from 201 through 299 are graduate courses.

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 the Conservatory

The Conservatory adheres to the "letter" grading system as described elsewhere in this catalog with the following exceptions:

1. Pass/No Credit (P/NC) is used only in MPER 50, MEDU 113, MMGT 187 and MMGT 199.
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 MCOM 2, MHIS 5, and MEDU 100, which are not available to

Bachelor of Music or Bachelor of Arts in Music degree students.

3. A maximum of three non-Conservatory courses may be taken by music majors on a pass/no credit basis.

Class Attendance

Students are expected to attend all classes, rehearsals, lessons and other specified assignments. At the beginning of each term, the instructor will distribute a syllabus explaining attendance and grading policies and containing any other information pertinent to the class.

Bachelor of Arts Degree

All candidates for the Bachelor of Arts degree with a major in music must complete a minimum of 48 units in music. The total number of music units counted toward the Bachelor of Arts may not exceed 60 units. Bachelor of Arts students must complete eight units in applied music and eight units in ensembles. The Bachelor of Arts adviser in the Conservatory of Music must approve all course lists for registration. The core music courses in the Bachelor of Arts degree are as follows:

Courses		Units
MCOM 10	Music Theory and Aural Perception I	4
MCOM 11	Music Theory and Aural Perception II	4
MCOM 12	Music Theory III: Chromaticism	2
MCOM 13	Aural Perception III	1
MCOM 14	Introduction to Orchestration	2
MCOM 15	Music Theory IV: 20th Century	2
MCOM 16	Aural Perception IV	1
MCOM 17	Form and Process in Music	2
MHIS 11	Survey of Music History I	3
MHIS 12	Survey of Music History II	3
MHIS 13	Survey of Music History III	3
MAPP 10	Applied Music Principal Instrument	8
MPER 50	Solo Class (required each semester)	0
MPER 70-84	Major Ensemble	8
MPER 80-84	Choral Ensemble/ Instrumentalists	2
MCOM or MHIS	Electives	3
Total Units		**46-48**

Bachelor of Arts with an Emphasis in Jazz Studies

The Bachelor of Arts in Jazz Studies provides students a foundation in both traditional and innovative approaches to development as a jazz artist or composer. Courses in jazz history, theory, improvisation, and composition are combined with solo performance, small ensemble and large ensemble experiences. The curriculum culminates in a four-semester sequence of research based seminars investigating the performance techniques and historical development of jazz. In consultation with the program director, students will select additional coursework from a broad range of disciplines in the arts and sciences.

MAPP 10	Applied Music Principal Instrument	8
MCOM 010	Music Theory & Aural Perception I	4
MCOM 011	Music Theory & Aural Perception II	4
MCOM 030	Jazz Theory & Aural Training	3
MCOM 040	Jazz Improvisation I	2
MCOM 041	Jazz Improvisation II	2
MCOM 050	Jazz Style and Analysis	3
MCOM 120	Advanced Improvisation	2
MCOM 121	Jazz Arranging and Composition	3
MEDU 130	Jazz Pedagogy	2
MHIS 008	History of Jazz	3
MHIS 011	Survey of Music History I	3
MHIS 012	Survey of Music History II	3
MHIS 013	Survey of Music History III	3
MHIS 120 - 123	Jazz Seminar & Perspectives I-IV (Upper Division)	12
MPER 030	Jazz Piano I	1
MPER 031	Jazz Piano II	1
MPER 50	Solo Class	0
MPER 66 or 67	Jazz Ensemble/ Jazz Combo	8
MPER 80-84	Choral Ensemble/ Instrumentalists	2

Bachelor of Arts with an Emphasis in Music Management

The Bachelor of Arts with an Emphasis in Music Management provides students with three vital components of a music industry pre-professional curriculum. These are: broad studies in music including performance, musicianship, repertoire, and music management; a grounding in key business theory and practice; and exploration of an intended area of interest in the music industry.

Courses		Units
MAPP 1	or MAPP 5 Piano	4
MAPP 10	Applied Music Principal Instrument	6
MCOM 10	Music Theory and Aural Perception I	4
MCOM 11	Music Theory and Aural Perception II	4
MCOM	Electives	7-8
MHIS	Courses in music history, repertoire, or literature*	9
MMGT 10	Freshman Seminar -Music Management	1
MMGT 11	Music, Entertainment in U.S. Society	4
MMGT 96	Sound Recording Fundamentals	3
MMGT 111	Music Industry Analysis	4
MMGT 153	Entertainment Law	4
MMGT 187	Music Industry Internship	2-4
MMGT 196	Senior Seminar	2
MMGT 199	Exit Examination	0
	Electives in MMGT	6
MPER 50	Solo Class (required 4 semesters)	0
MPER 70-84	Major Ensemble	8
BUSI 31	Principles of Financial Accounting	4
BUSI 53	The Legal and Ethical Environment of Business	4
BUSI 107	Marketing Management	4
BUSI 109	Management and Organizational Behavior	4
ENGL 109	Writing in the Workplace	4
ECON 53	Introductory Microeconomics	4
MATH 35	Elementary Statistical Inference	4

**MHIS 5 does not count toward this requirement.*

Students elect courses in art and culture, non-western cultures, and music as part of their curriculum.

Students may elect additional courses in Music Management; each student's degree plan is devised in consultation with the Music Management academic adviser.

Bachelor of Music Degree

The University of the Pacific confers the Bachelor of Music degree upon students who satisfactorily complete the core courses in music, courses within the major and the General Education program. All baccalaureate degrees require a minimum of 124 units with the exception of Music Management (128). Major fields are performance (Brass, Percussion, Piano, Strings, Voice, Woodwinds), music composition, music education, music history, music management and music therapy.

Major in Performance – Piano

Courses		Units
MAPP 12	Applied Piano	8
MAPP 112	Advanced Applied Piano	16
MCOM 10	Music Theory and Aural Perception I	4

MCOM 11	Music Theory and Aural Perception II	4
MCOM 12	Music Theory III: Chromaticism	2
MCOM 13	Aural Perception III	1
MCOM 14	Introduction to Orchestration	2
MCOM 15	Music Theory IV: 20th Century	2
MCOM 16	Aural Perception IV	1
MCOM 17	Form and Process in Music	2
MHIS 11	Survey of Music History I	3
MHIS 12	Survey of Music History II	3
MHIS 13	Survey of Music History III	3
MHIS 142	Chamber Music Literature	3
MHIS 143a	Keyboard Literature I	3
MHIS 143b	Keyboard Literature II	3
MCOM or MHIS	Electives	6
MPER 50	Solo Class (required each semester)	0
MPER 60	Chamber Ensemble	4
MPER 70-84	Major Ensemble (required each semester)	8
MPER 80-84	Choral Ensemble/ Instrumentalists	2
MPER 130	Accompanying	4
MPER 140	Pedagogy of Piano	2
MPER 151	Principles of Conducting	2
MPER 152 or MPER 153	Choral or Instrumental Conducting	2

A half recital in the junior year and a full recital in the senior year are required.

Major in Performance – Voice

Courses		Units
MAPP 1	or MAPP 5 Piano*	4-8
MAPP 12	Applied Voice	8
MAPP 112	Advanced Applied Voice	12
MCOM 10	Music Theory and Aural Perception I	4
MCOM 11	Music Theory and Aural Perception II	4
MCOM 12	Music Theory III: Chromaticism	2
MCOM 13	Aural Perception III	1
MCOM 14	Introduction to Orchestration	2
MCOM 15	Music Theory IV: 20th Century	2
MCOM 16	Aural Perception IV	1
MCOM 17	Form and Process in Music	2
MHIS 11	Survey of Music History I	3
MHIS 12	Survey of Music History II	3
MHIS 13	Survey of Music History III	3
MPER 20, 21	Introduction to Lyric Diction	4
MPER 50	Solo Class (required each semester)	0
MPER 80-84	Major Ensemble (required each semester)	8
MPER 120, 121	Lyric Diction	4
MPER 151	Principles of Conducting	2
MPER 152	Choral Conducting	2
MPER 141	Pedagogy of Voice	2
MPER 69	Drama/Opera Workshop elective	1
MHIS 144	Vocal Literature	3
MCOM or MHIS	Electives	3-6
FREN	Language Requirement	8
GERM	Language Requirement	8

** All voice performance majors are required to study piano for a minimum of four semesters unless they pass a freshman piano concentration examination. After four semesters of study, voice majors will be required to continue piano study each semester until the piano skills have been completed.*

During junior and senior years, each voice major must have two semesters of Opera Production and two semesters of a major choral ensemble.

Voice Performance Majors must perform a half junior recital and a full senior recital. A senior examination during the final year is also required.

Major in Performance - Strings

Courses		Units
MAPP 1 or 5	Piano	4
MAPP 12	Applied Music	8
MAPP 112	Applied Music	16
MCOM 10	Music Theory and Aural Perception I	4
MCOM 11	Music Theory and Aural Perception II	4
MCOM 12	Music Theory III: Chromaticism	2
MCOM 13	Aural Perception III	1
MCOM 14	Introduction to Orchestration	2
MCOM 15	Music Theory IV: 20th Century	2
MCOM 16	Aural Perception IV	1
MCOM 17	Form and Process in Music	2
MCOM 108	Counterpoint	3
MCOM 113	Advanced Analysis	3
MHIS 11	Survey of Music History I	3
MHIS 12	Survey of Music History II	3
MHIS 13	Survey of Music History III	3
MHIS 140	Symphonic Literature	3
MHIS 142	Chamber Music Literature	3
MHIS 150-154	(from period courses)	3
MPER 50	Solo Class (required each semester)	0
MPER 60	Chamber Ensemble	8
MPER 70	University Symphony Orchestra	8
MPER 80-84	Choral Ensemble/ Instrumentalists	2
MPER 151	Principles of Conducting	2
MPER 153	Instrumental Conducting	2

A half recital in the junior year and a full recital in the senior year are required.

Major in Performance –Woodwinds, Brass or Percussion

Courses		Units
MAPP 1 or 5	Piano	4
MAPP 12	Applied Music	8
MAPP 112	Applied Music	16
MCOM 10	Music Theory and Aural Perception I	4
MCOM 11	Music Theory and Aural Perception II	4
MCOM 12	Music Theory III: Chromaticism	2
MCOM 13	Aural Perception III	1
MCOM 14	Introduction to Orchestration	2
MCOM 15	Music Theory IV: 20th Century	2
MCOM 16	Aural Perception IV	1
MCOM 17	Form and Process in Music	2
MCOM 108	Counterpoint	3
MCOM 113	Advanced Analysis	3
MHIS 11	Survey of Music History I	3
MHIS 12	Survey of Music History II	3
MHIS 13	Survey of Music History III	3
MHIS 140	Symphonic Literature	3
MHIS 142	Chamber Music Literature	3
MHIS 150-154	(from period courses)	3
MPER 50	Solo Class (required each semester)	0
MPER 60	Chamber Ensemble	8
MPER 70-73	Major Ensemble (required each semester)	8
MPER 80-84	Choral Ensemble/ Instrumentalists	2
MPER 151	Principles of Conducting	2
MPER 153	Instrumental Conducting	2

A half recital in the junior year and a full recital in the senior year are required.

Major in Music Composition

Courses		Units
MAPP 1 or 5	Piano*	4
MAPP 10	Applied Music	8
MCOM 10	Music Theory and Aural Perception I	4
MCOM 11	Music Theory and Aural Perception II	4
MCOM 12	Music Theory III: Chromaticism	2
MCOM 13	Aural Perception III	1
MCOM 14	Introduction to Orchestration	2
MCOM 15	Music Theory IV: 20th Century	2
MCOM 16	Aural Perception IV	1
MCOM 17	Form and Process in Music	2
MCOM 19	Music and Computer Technology	3
MCOM 24	Composition, Lower Division	8
MCOM 25	Composition Seminar, Lower Division	2
MCOM 108	Counterpoint	3
MCOM 109	Advanced Orchestration	3

MCOM 113	Advanced Analysis	3
MCOM 111	Advanced Computer Music	3
MCOM 124	Composition, Upper Division	8
MCOM 125	Composition Seminar, Upper Division	4
MHIS 6	Music of the World's Peoples	3
MHIS 11	Survey of Music History I	3
MHIS 12	Survey of Music History II	3
MHIS 13	Survey of Music History III	3
MPER 151	Principles of Conducting	2
MPER 50	Solo Class (required each semester)	0
MPER 70-84	Major Ensemble (required each semester)	8
MPER 80-84	Choral Ensemble/ Instrumentalists	2
PHYS 39	Physics of Music	4
ARTH 114/116/118		4

**Piano concentration students may elect other course in music.*

An end of the year advisory portfolio review is required of all composition majors. Admission to the upper division is based on a review of the student's work at the end of the second year. A senior composition project and a half-recital of the student's compositions are required in the senior year.

Major in Music History

Courses		Units
MAPP 1 or 5	Piano*	4
MAPP 10	Applied Music	8
MCOM 10	Music Theory and Aural Perception I	4
MCOM 11	Music Theory and Aural Perception II	4
MCOM 12	Music Theory III: Chromaticism	2
MCOM 13	Aural Perception III	1
MCOM 14	Introduction to Orchestration	2
MCOM 15	Music Theory IV: 20th Century	2
MCOM 16	Aural Perception IV	1
MCOM 17	Form and Process in Music	2
MCOM 108	Counterpoint	3
MCOM 113	Advanced Analysis	3
MHIS 11	Survey of Music History I	3
MHIS 12	Survey of Music History II	3
MHIS 13	Survey of Music History III	3
MHIS 140-154	Electives in Music History**	18
MHIS 197	Research in Music History	4
MPER 151	Principles of Conducting	2
MPER 50	Solo Class (required each semester)	0
MPER 70-84	Major Ensemble (required each semester)	8
MPER 80-84	Choral Ensemble/ Instrumentalists	2
MPER 152 or 153	Conducting	2
FREN	Language Requirement	8
GERM	Language Requirement	16

**Piano concentration students may elect another course in music.*
*** Special Topics courses may be substituted with departmental permission.*

Major in Management

Courses		Units
BUSI 31	Principles of Financial Accounting	4
BUSI 53	The Legal and Ethical Environment of Business	4
BUSI 107	Marketing Management	4
BUSI 109	Management and Organizational Behavior	4
ECON 53	Introductory Microeconomics	4
MATH 35	Elemental Statistical Inference	4
MAPP 1 or 5	Piano	4
MAPP 10	Applied Music	12
MCOM 10	Music Theory and Aural Perception I	4
MCOM 11	Music Theory and Aural Perception II	4
MCOM 12	Music Theory III: Chromaticism	2
MCOM 13	Aural Perception III	1
MCOM 14	Introduction to Orchestration	2
MCOM 15	Music Theory IV: 20th Century	2
MCOM 16	Aural Perception IV	1
MCOM 17	Form and Process in Music	2
MHIS 11	Survey of Music History I	3
MHIS 12	Survey of Music History II	3
MHIS 13	Survey of Music History III	3
MMGT 11	Music, Entertainment in U.S. Society	4
MMGT 96	Sound Recording Fundamentals	3
MMGT 111	Music Industry Analysis	4
MMGT 153	Entertainment Law	4
MMGT 198	Music Management Internship or Business Elective*	2-4
MPER 50	Solo Class (required each semester)	0
MPER 70-84	Major Ensemble (required each semester)	8
MPER 80-84	Choral Ensemble/ Instrumentalists	2
MPER 151	Principles of Conducting	2

**Students are strongly encouraged to pursue an internship in the music business. Those who do not are required to take business or music management elective totaling 4 units.*

Major in Music Education

The Conservatory of Music offers two degree plans for a major in Music Education, one with a concentration in instrumental music, 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 plan which requires one semester of student teaching (eight units plus two of seminar) during the fourth year plus a summer course of Video-Microrehearsal and field teaching (six units).
2. A Video-Microrehearsal/Internship plan in which selected students participate in the summer Video-Microrehearsal/field teaching program and then teach under contract in neighboring school districts during the fifth year.
3. A plan which requires one full-time semester of student teaching.

All music education majors must pass a minimum proficiency examination in piano and in functional guitar. They must also demonstrate basic vocal proficiency. One hundred hours of laboratory teaching/observation in elementary and secondary schools are required. Courses in Music Education and professional education that are part of the Music Education major must be passed with at least a C grade, and courses in music must receive an average of C within each music discipline.

Instrumental Concentration

Courses		Units
CURR 135x or CURR 175	Reading/Language Arts Development: Multiple Subjects or Reading/Language Arts Development Single Subject	3
CURR 178	Directed Teaching: Single Subject	10
SPED 125x	Teaching Exceptional Learners	2
CURR 195x	Seminar: Directed Teaching	2
CURR 105x	Introduction to Education	3
EPSY 121x	Learner-Centered Concerns	3
MAPP 1	Functional Guitar	1
CURR 137x	Teaching English Language Learners	2
CURR 134x	Educational Computing	2
MAPP 1 or 5	Piano	4
MAPP 11	Applied Music Principal Instrument	8
MAPP 111	Applied Music Principal Instrument	8
MCOM 10	Music Theory and Aural Perception I	4
MCOM 11	Music Theory and Aural Perception II	4

MCOM 12	Music Theory III: Chromaticism	2
MCOM 13	Aural Perception III	1
MCOM 14	Introduction to Orchestration	2
MCOM 15	Music Theory IV: 20th Century	2
MCOM 16	Aural Perception IV	1
MCOM 17	Form and Process in Music	2
MCOM 121	Jazz Scoring/Jazz Elective	2
MEDU 101 -108	Instrumental Methods	6
MEDU 110 or MEDU 112	Band or Orchestra Development	2
MEDU 111	Choral Development	2
MEDU 113	Lab Ensemble	2
MEDU 114	Music in Elementary School	2
MEDU 115	Music Experiences, K-6	2
MEDU 116	Music in Secondary School	2
MEDU 117	Music Experiences, 7-12	2
MHIS 6	Music of the World's Peoples	3
MHIS 11	Survey of Music History I	3
MHIS 12	Survey of Music History II	3
MHIS 13	Survey of Music History III	3
MPER 50	Solo Class (required each semester)	0
MPER 70-84	Major Ensemble (required each semester)	8
MPER 80-84	Choral Ensemble/ Instrumentalists	2
MPER 151	Principles of Conducting	2
MPER 153	Instrumental Conducting	2

Choral Concentration

Courses		Units
MAPP 1	Functional Guitar	1
MAPP 1 or 5	Piano or Voice*	4
MAPP 11	Applied Music Principal Instrument	8
MAPP 111	Applied Music Principal Instrument	8
CURR 179x	Curriculum and Instruction: Instructional Strategies	3
CURR 135x or 175	Reading/Language Arts Development: Multiple Subjects or Reading/Language Arts Development Single Subject	3
CURR 178	Directed Teaching: Single Subject	10
CURR 195x	Seminar: Directed Teaching	2
CURR 105x	Introduction to Education	3
EPSY 121x	Learner-Centered Concerns	3
MCOM 10	Music Theory and Aural Perception I	4
MCOM 11	Music Theory and Aural Perception II	4
MCOM 12	Music Theory III: Chromaticism	2
MCOM 13	Aural Perception III	1
MCOM 14	Introduction to Orchestration	2
MCOM 15	Music Theory IV: 20th Century	2
MCOM 16	Aural Perception IV	1
MCOM 17	Form and Process in Music	2
MCOM 121	Jazz Scoring/Jazz Elective	2
MEDU 101	Instrumental Methods	5
CURR 137x	Teaching English Language Learners	2
CURR 134x	Educational Computing	2
MEDU 111	Choral Development	2
MEDU 113	Lab Ensemble	2
MEDU 114	Music in Elementary School	2
MEDU 115	Music Experiences, K-6	2
MEDU 116	Music in Secondary School	2
MEDU 117	Music Experiences, 7-12	2
MHIS 6	Music of the World's Peoples	3
MHIS 11	Survey of Music History I	3
MHIS 12	Survey of Music History II	3
MHIS 13	Survey of Music History III	3
MPER 20, 21	Introduction to Lyric Diction	4
MPER 50	Solo Class (required each semester)	0
MPER 70-84 (required each semester)	Major Ensemble	8
MPER 151	Principles of Conducting	2
MPER 152	Choral Conducting	2
MPER 169	Opera Workshop	1
SPED 125x	Teaching Exceptional Learners	2

**Students with keyboard as principal instrument are required to take four semesters of applied voice. Students with other principal instruments are required to enroll in piano until the piano proficiency examination for Music Education is passed.*

Music Education majors must present a half recital, usually in their senior year.

Music Education majors with voice as a principal instrument are required to complete a senior examination during the final year.

Teaching 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.

Music Education majors not working toward a teaching credential may substitute free elective courses to complete the required 124 units for the Bachelor of Music degree.

Students who become interns may substitute electives for the student teaching in the fourth year.

Major Ensembles must relate to the student's proposed teaching area as specified by advisers.

Residency requirements in Solo Class, Major Ensemble and Lab Ensemble may be waived when in conflict with student teaching.

Major in Music Therapy

Courses		Units
MAPP 1	Applied Class Voice	1
MAPP 1	Functional Guitar	1-2
MAPP 1 or 5	Piano	4-8
MAPP 10	Principal Instrument	8
MCOM 10	Music Theory and Aural Perception I	4
MCOM 11	Music Theory and Aural Perception II	4
MCOM 12	Music Theory III: Chromaticism	2
MCOM 13	Aural Perception III	1
MCOM 14	Introduction to Orchestration	2
MCOM 15	Music Theory IV: 20th Century	2
MCOM 16	Aural Perception IV	1
MCOM 17	Form and Process in Music	2
MEDU 105	Inst Methods: Percussion	1
MHIS 11	Survey of Music History I	3
MHIS 12	Survey of Music History II	3
MHIS 13	Survey of Music History III	3
MPER 151	Principles of Conducting	2
MPER 50	Solo Class (required each semester)	0
MPER 70-84	Major Ensemble (required each semester)	8
MPER 80-84	Choral Ensemble/ Instrumentalists	2
MTHR 11	Music as Therapy: A Survey of Clinical Applications	3
MTHR 18	Basic Skills for Music Therapists and Allied Professionals	3
MTHR 20	Observation and Assessment in Music Therapy	2
MTHR 135	Music Therapy with Children in Inclusive Settings: Therapeutic and Educational Applications	3
MTHR 140	Psychology of Music	3
MTHR 141	Music Therapy in Mental Health and Social Services	3
MTHR 142	Music Therapy in Medicine and Health Care	3
MTHR 187	Internship in Music Therapy	2
MTHR 150	Fieldwork in Music Therapy	4-8
BIOL 11	Human Anatomy and Physiology	4
PSYC 111	Abnormal Psychology	4
SPED 123	The Exceptional Child	3

The Music Therapy program is approved by the American Music Therapy Association. The Bachelor of Music degree is earned at the completion of four years of coursework. One is eligible for the Board Certification Examination upon the completion of a six-month internship at an approved clinical facility. Students must be enrolled for at least one unit of MTHR 187 during the semesters covering the start and completion dates of the internship. Final grade for all sections of MTHR 187 will be given only upon receipt of the final internship evaluation.

In order to complete the Music Therapy degree, students must obtain a grade of B- or better in Music Therapy courses and demonstrate interpersonal and professional skills appropriate to the clinical profession as evaluated by the Music Therapy Department.

A student receiving a grade of less than B- in either MTHR 11 or MTHR 18 may not enroll in upper-division Music Therapy core courses until a B- grade or better is obtained in each of these lower-division courses.

Each core course (MTHR 11-141) must be passed with at least a B- grade. If a student does not receive such a grade following the second attempt through a particular course, the student will be disqualified from the Music Therapy major.

All Music Therapy majors are required to demonstrate functional proficiencies on piano, guitar, and voice before enrolling in the senior level capstone course MTHR 141, 142, and 150 section 02. Voice competencies are assessed in the mandatory MAPP 001E voice class and during fieldwork. All students, regardless of major instrument, must complete the voice class, pass all parts of the piano functional examination, and both beginning and advanced level functional guitar examinations. These examinations are given within the functional courses, but may also be passed at the examination time offered at the end of each semester.

Music History Minor for Music Majors

The Music History minor for music majors is designed for students who wish to pursue additional coursework in the field of music history. It is open to students pursing any music major. Composition, Performance, and Music Education majors can explore more research-oriented courses through the music history minor. The requirements include four upper-division music history courses, two semesters of a foreign language, and a semester of individualized research for a total of 22 units.

Music History electives-upper division*	12 Units
Foreign Language**	8 Units
MHIS 197 Research in Music History	2 Units

**From MHIS 150-154. Special Topics courses with the consent of the Music History adviser.*

***In consultation with the Music History Adviser.*

Music Theory Minor for Music Majors

The minor in music theory is available only to music majors. The intent is to offer a significant study in music theory as a secondary area for a student already involved in the study of music. It can be combined with any music area except composition, but is particularly useful for majors in performance who are interested in extending their knowledge of music theory to support their performance activities or in expanding their compositional interests.

Music Theory Minor

MCOM 19	Music and Computer Technology	3
MCOM 108*	Counterpoint	3
MCOM 109*	Advanced Orchestration	3
MCOM 111*	Advanced Computer Music	3
MCOM 113*	Advanced Analysis	3
MHIS 150 -154*	One Music History Course	3
PHYS 39	Physics of Music	4
Total Units		**22**

**Must be taken at University of the Pacific.*

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 curriculum

MCOM 10	Music Theory and Aural Perception I	4
MHIS 5	Music Appreciation	4

Select one course from the following:

a. MCOM 11 Music Theory and Aural Perception II 4

b. MHIS 11 or 12 or 13 Music History Survey 3

B. Applied Music, Instrument or Voice

MAPP 10. The minimum requirement is two semesters of study 2

ENSEMBLE. The minimum requirement is two semesters of participation in any ensemble 1-2

MPER 50-SOLO CLASS. The minimum requirement is two semesters of enrollment 0

C. Electives**

With the approval of the Music Minor faculty adviser, students will select five to seven units of music courses to complete a minimum of 21 units 5-7

** A qualified student may pass out of MCOM 10/11, then elect to take MCOM 12/13 or one semester of MHIS 11 or 12 or 13.*

***MCOM 2-Fundamental Structures of Music is not an eligible elective course for the Music Minor program.*

Course Offerings

Music Composition Department

MCOM 2. Fundamental Structures, Section 1 (3)

Music fundamentals, music reading and harmonization of simple melodies. All theoretical skills will be applied at the piano keyboard.

MCOM 10. Music Theory and Aural Perception I (4)

Primary concepts of music: rhythm, meter, pitch, scale degree, triads, seventh chords and their inversions, tonal function, and diatonic chord progression through harmonic expansions accomplished through the development of aural and sight singing skills, and the completion of written exercises.

MCOM 11. Music Theory and Aural Perception II (4)

Diatonic and chromatic harmony covering non-harmonic tones, tonicization, modulation, cadence, phrase structure and simple forms accomplished through the development of aural and sight singing skills, the completion of written exercises, and the analysis of musical scores. *Prerequisite: MCOM 10.*

MCOM 12. Music Theory III: Chromaticism (2)

The study of chromatic harmony and its use through written and analytical exercises encompassing secondary dominants, modulation, borrowed chords, chords of the augmented 6th, the Neapolitan 6th, and extended chromaticism through enharmonic reinterpretation. *Corequisites: MCOM 13 and 14. Prerequisite: MCOM 11.*

MCOM 13. Aural Perception III (1)

The training of musicianship skills related to the chromatic harmony studied in MCOM 12. Includes the development of expertise through the dictation of 3 part exercises, harmonic progressions, and extended rhythmic lines. *Corequisite: MCOM 12. Prerequisite: MCOM 11.*

MCOM 14. Introduction to Orchestration (2)

Fundamentals of orchestration: characteristics of instruments, transposition, score layout. Orchestral analysis with definition of material in terms of Foreground-Middleground-Background. *Prerequisite: MCOM 11.*

MCOM 15. Music Theory IV: Twentieth Century (2)

The study of twentieth century music through the analysis and composition of a variety of theoretical approaches including Impressionism, Expressionism, 12-tone composition, the rhythmic developments of Stravinsky, Carter, and Messiaen, durational structures and indeterminancy of John Cage, modality and spectral music, minimalism, and computer music. *Corequisite: MCOM 17. Prerequisites: MCOM 12 and 14.*

MCOM 16. Aural Perception IV (1)
The training of musicianship skills related to the further study of chromatic harmony. Includes the development of expertise through the dictation of 4 part exercises, harmonic progressions, and extended rhythmic exercises. *Prerequisite: MCOM 13.*

MCOM 17. Form and Process in Music (2)
A study of how music moves through time. Exploration of structural levels from motive to macro-rhythm, components of design, basic forms and concepts of analysis. *Corequisite: MCOM 15. Prerequisites: MCOM 12 and 14.*

MCOM 19. Music and Computer Technology (3)
This course provides a basic introduction to the use of computers for the creation and production of music. During this study students will develop a working knowledge of the MIDI studio as well as fundamental information on analog synthesis and music hardware and software. Software used in this course includes: Logic Audio Gold with EXS24 and Peak. As a project oriented study students will be required to schedule individual time each week to work in the studio. The course is taught in Studio 12 in the Conservatory of Music. *Prerequisite: MCOM 2.*

MCOM 24. Composition, Lower-Division (2)
Composition involves the writing of original works under the guidance of faculty composers. *Prerequisite: non-music majors require permission of the instructor.*

MCOM 25. Composition Seminar, Lower-Division (1)
The study of special topics pertinent to composing in the late 20th/early 21st Century. These topics cycle through a six semester sequence and include: New Pitch Materials, New Rhythmic Materials, Sound and Film, New Formal Structures, Non-Western Compositional Resources, and Experimental Music and Improvisation. *Corequisite: MCOM 24.*

MCOM 30. Jazz Theory & Aural Training (3)
Technical aspects of jazz improvisation including harmonic substitutions, chord/scale relationships, analysis of harmonic progressions and solos, forms, and ear training. Class examples and exercises will be written for piano. Emphasis will be placed on students studying the materials at the piano and their individual instruments. *Prerequisite: MCOM 10 and 11 or permission of the instructor.*

MCOM 40. Jazz Improvisation I (2)
Study of the essential elements utilized in jazz performance. Students participate on their individual instruments in the playing of patterns, scales, and compositions that aid in the development of improvisational skills. Course includes both written and performance exams. *Prerequisites: MCOM 10 and 11, or equivalent or permission of the instructor.*

MCOM 41. Jazz Improvisation II (2)
Study of the essential elements utilized in jazz performance. Students participate on their individual instruments in the application of advanced patterns and scales. Additional components involve jazz improvisation instruction for contemporary compositions, ballad performance, and free form vehicles. Course includes both written and performance exams. *Prerequisites: MCOM 10, 11, and 40, or equivalent or permission of the instructor.*

MCOM 50. Jazz Style & Analysis (3)
This course will explore jazz style through the analysis of historically significant transcribed solos of jazz masters. The course will focus on the development of harmonic and melodic vocabulary, and will involve student transcriptions. *Prerequisites: MCOM 10, 11, and 40, or equivalent, or permission of the instructor.*

MCOM 108. Counterpoint (3)
Study of Palestrina's and Lassus' contrapuntal techniques accomplished through written exercises and analysis. *Prerequisites: MCOM 10-17.*

MCOM 109. Advanced Orchestration (3)
Focus on orchestration techniques from the first half of the 20th Century, and new performance practices. This study is accomplished through orchestra analysis and writing exercises including a reading session with the orchestra. *Prerequisites: MCOM 10-17.*

MCOM 111. Advanced Computer Music (3)
A course taught in the Conservatory Computer Studio for Music Composition which focuses on the use of sampling/sound design, digital audio recording and editing, automated mixing, and computer manipulation as resources for music composition. *Prerequisites: MCOM 10-19.*

MCOM 112. Composition - Computer Music (2)
Private composition study in computer music within the Conservatory Computer Studio for Music Composition.

MCOM 113. Advanced Analysis (3)
Advanced topics in music analysis including extensive study of Schenkerian analysis. *Prerequisites: MCOM 10-17.*

MCOM 120. Advanced Improvisation (2)
Advanced techniques and practices of jazz improvisation. Includes tune analysis and develops a more definitive concept of chord/scale relationships. Examination of contemporary performance practices including the use of synthetic scales and free improvisation. *Prerequisites: MCOM 10, 11, 40, 41, or equivalent or permission of the instructor.*

MCOM 121. Jazz Arranging & Composition (3)
This course will focus will focus on familiarizing students with jazz composition and arranging techniques for the small jazz ensemble. Two and three part writing techniques associated with the jazz tradition will be the focus. *Prerequisites: MCOM 10, 11, 40, 41, MPER 30, 31, or equivalent or permission of the instructor.*

MCOM 124. Composition, Upper-Division (2)
Free composition for experienced students. May be repeated for credit. Admission to upper division based on review of student's work at end of second year. *Corequisite: MCOM 125.*

MCOM 125. Composition Seminar, Upper-Division (1)
The study of special topics pertinent to composing in the late 20th/early 21st Century. These topics cycle through a six-semester sequence and include: New Pitch Materials, New Rhythmic Materials, Sound and Film, New Formal Structures, Non-Western Compositional Resources, and Experimental Music and Improvisation.

MCOM 191. Independent Study (1-2)

MCOM 193. Special Topics (1-2)

MCOM 208. Counterpoint (3)
Study of Palestrina's and Lassus' contrapuntal techniques accomplished through written exercises and analysis. *Prerequisites: MCOM 10-17.*

MCOM 209. Advanced Orchestration (3)
Focus on orchestration techniques from the first half of the 20th Century, and new performance practices. This study is accomplished through orchestral analysis and writing exercises including a reading session with the orchestra. *Prerequisites: MCOM 10-17.*

MCOM 211. Advanced Computer Music (3)
A course taught in the Conservatory Computer Studio for Music Composition which focuses on the use of sampling/sound design, digital audio recording and editing, automated mixing, and computer manipulation as resources for music composition. An additional project will be assigned for those wishing graduate credit. *Prerequisites: MCOM 10-17, MCOM 19 or equivalent.*

MCOM 212. Composition – Computer Music (2)
Private composition study in computer music within the Conservatory Computer Studio for Music Composition.

MCOM 213. Advanced Analysis (3)
Advanced topics in music analysis including the extensive study of Schenkerian analysis. An additional project will be assigned for those wishing graduate credit. *Prerequisites: MCOM 10-17.*

MCOM 291. Independent Study (1-4)

MCOM 293. Special Topics (1-2)

MCOM 299. Thesis (3)

Music Education Department

MEDU 100. Music for Children (3)
Music fundamentals resources, concepts and activities for the pre-adolescent child. Open to non-music majors only. Required for multiple subjects credential candidates.

MEDU 101. Woodwind Instruments (1)
Study of flute and clarinet.

MEDU 102. Woodwind Instruments (1)
Study of oboe, bassoon and saxophone.

MEDU 103. Brass Instruments (1)
Principles for teaching and playing brass instruments.

MEDU 104. Brass Instruments (1)
Advanced principles of brass instrument teaching.

MEDU 105. Percussion Instruments (1)
Pedagogical principles related to playing percussion instruments.

MEDU 107. String Instruments (1)
Introductory study of string playing and teaching techniques.

MEDU 108. String Instruments (1)
Advanced string technique and pedagogy.

MEDU 110. Band Development (2)
Study of teacher's role in bands, including concert, marching, and jazz bands in public schools.

MEDU 111. Choral Development (2)
Concepts and techniques for choral ensembles. Includes choral field observation.

MEDU 112. Orchestra Development (2)
Study of teacher's role in orchestras in public schools.

MEDU 113. Laboratory Ensemble (.5)
Laboratory practice of rehearsal teaching skills, secondary instruments and vocal ensemble techniques.

MEDU 114. Music in Elementary School (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 MEDU 115.

MEDU 115. Music Experiences, K-6 (2)
Music specialist approach to materials and techniques for developing music experiences for elementary school children. Must be taken with MEDU 114. Open to music majors only.

MEDU 116. Music in Secondary School (2)
Role of school music, grades 7-12. Includes 50 hours of laboratory observation/teaching. Must be taken in conjunction with MEDU 117. Open to music majors only.

MEDU 117. Music Experiences, 7-12 (2)
Music specialist approach to materials and techniques for developing music experiences in secondary school. Must be taken with MEDU 116. Open to music majors only.

MEDU 118. Advanced Teaching Practicum (1-3)
Supervised practical observation/teaching experiences in both public and private schools. *Prerequisites: MEDU 114 and 116.*

MEDU 130. Jazz Pedagogy (2)
The study of jazz education materials and performance techniques designed for the student who may teach jazz ensembles or design curriculum. *Prerequisites: MCOM 10, 11, 40, 41*

MEDU 191. Independent Study (1-2)

MEDU 193. Special Topics (1-2)

MEDU 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.*

MEDU 201. Video Microrehearsal for Experienced Music Teachers (1-4)
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.*

MEDU 202. Fieldwork in Music Education (3)
Advanced work in schools. May include music drama, small ensembles, unique curriculum design as well as large ensembles and class instruction.

MEDU 210. Seminar in Music Education (2)
Discussion, research and writing related to music education.

MEDU 220. Instrumental Organization, Conducting and Literature (3)

MEDU 221. Choral Organization, Conducting and Literature (3)

MEDU 222. Issues in Elementary Music Education (3)

MEDU 291. Independent Study (1-4)

MEDU 293. Special Topics (1-2)

MEDU 299. Thesis (3)

MEDU 301. Video Microrehearsal for Experienced Music Teachers (4)
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. Research component is required.*

MEDU 310. Seminar in Music Education (2)
Discussion, research and writing related to music education.

MEDU 311. Philosophy of Music Education (3)
Development of individual music education philosophy through study of history, aesthetics, sociology, psychology and school practice.

MEDU 312, 313. Graduate Research in Music Education (1-3, 1-3)

MEDU 322. Issues in Elementary Music Teaching (3)

MEDU 391. Independent Graduate Study (1-3)

MEDU 393. Special Topics (1-2)

General Music

MUSC 202. Introduction to Research in Music (3)
Designed for the graduate level student in developing music research skills.

MUSC 203. Contemporary Issues in Music Education and Music Therapy (3)
Graduate students will research, analyze, and reflect on current values, philosophical issues, and contemporary trends in the professions of music education and music therapy.

Music History Department

MHIS 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.

MHIS 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.

MHIS 8. History of Jazz (3)
Comprehensive study of jazz styles and performers through intelligent listening and historical research. Realizing jazz as an art form created by African-Americans, this course investigates issues concerning race, ethnicity, and social justice. Course content involves connections to slavery, Civil and World Wars, segregation, and the musical response of African-Americans. Course will

include writing a live performance critique, album reviews, artist papers, and a research paper. No previous study of music is required.

MHIS 11. Survey of Music History I (3)
Survey of music history and style from Greek music through music of the Renaissance.

MHIS 12. Survey of Music History II (3)
Survey of music history and style from the Baroque era through Beethoven. *Prerequisite: MHIS 11.*

MHIS 13. Survey of Music History III (3)
Survey of music history and style of the Romantic and Modern eras. *Prerequisites: MHIS 11 and 12.*

MHIS 120. Jazz Seminar & Perspectives I (4)
Jazz Seminar & Perspectives I comprises two major components involving Undergraduate Research and Performance Perspectives.

- Research Component: Jazz and the Harlem Renaissance
- Performance Perspectives Component: Form and Variations of the Blues

Subject matter involves jazz performance issues, stylistic comparisons of artists, works of major composers, and jazz historical perspectives. Students will be involved with in-class performances, research papers, and music transcriptions. Research topic involves the various cultural, economic, historical, and social aspects of jazz and its relevance to the Harlem Renaissance. Assembly of a portfolio serves as a key component of this course. *Prerequisites: MCOM 30, 40, 41, 50, MHIS 8, MPER 30, 31*

MHIS 121. Jazz Seminar & Perspectives II (4)
Jazz Seminar & Perspectives II comprises two major components involving Undergraduate Research and Performance Perspectives.

- Research Component: Jazz and the world stage – Although born in America, is jazz more respected abroad?
- Performance Perspectives Component: Form and Variations on the Rhythm Changes Vehicle

Subject matter involves jazz performance issues, stylistic comparisons of artists, works of major composers, and jazz historical perspectives. Students will be involved with in-class performances, research papers, and music transcriptions. Research topic involves the various cultural, economic, historical, and social aspects of jazz and its relevance to the exodus of jazz musicians into European countries. Assembly of a portfolio serves as a key component of this course. *Prerequisites: MHIS 8, 120, MCOM 30, 40, 41, MPER 30, 31*

MHIS 122. Jazz Seminar & Perspectives III (4)
Jazz Seminar & Perspectives III comprises two major components involving Undergraduate Research and Performance Perspectives.

- Research Component: Afro-Cuban Jazz Tradition
- Performance Perspectives Component: Jazz Interpretations of Broadway Show Tunes

Subject matter involves jazz performance issues, stylistic comparisons of artists, works of major composers, and jazz historical perspectives. Students will be involved with in-class performances, research papers, and music transcriptions. Research topic involves the various cultural, economic, historical, and social aspects of jazz and its relevance to Afro-Cuban music and its blending with jazz styles. Assembly of a portfolio serves as a key component of this course. *Prerequisites: MHIS 8, 120, 121, MCOM 30, 40, 41, MPER 30, 31*

MHIS 123. Jazz Seminar & Perspectives IV (4)
Jazz Seminar & Perspectives IV comprises two major components involving Undergraduate Research and Performance Perspectives.

- Research Component: Women in Jazz
- Performance Perspectives Component: Expression of the Ballad Style

Subject matter involves jazz performance issues, stylistic comparisons of artists, works of major composers, and jazz historical perspectives. Students will be involved with in-class performances, research papers, and music transcriptions. Research topic involves the various cultural, economic, historical, and social aspects of jazz and its relevance to female artists and their contributions within a male dominated field. Assembly of a portfolio serves as a key component of this course. *Prerequisites: MHIS 8, 120, 121, 122, MCOM 30, 40, 41, MPER 30, 31*

MHIS 140. Symphonic Literature (3)
History of the symphony from Baroque antecedents to contemporary examples. *Prerequisites: MCOM 10-17, MHIS 11, 12, 13 or permission of the instructor.*

MHIS 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. *Prerequisites: MCOM 10-17, MHIS 11, 12, 13 or permission of the instructor.*

MHIS 142. Chamber Music Literature (3)
Formal and stylistic study of chamber music literature. Analysis of specific works. *Prerequisites: MCOM 10-17, MHIS 11, 12, 13 or permission of the instructor.*

MHIS 143a. Keyboard Literature I (3)
Historical, formal and stylistic study of keyboard literature from 1450 through 1825. *Prerequisites: MCOM 10-17, MHIS 11, 12, 13 or permission of the instructor.*

MHIS 143b. Keyboard Literature II (3)
Keyboard music from 1825 to present. *Prerequisites: MCOM 10-17, MHIS 11, 12, 13 or permission of the instructor.*

MHIS 144. Vocal Literature (3)
Survey of vocal compositions of major composers with emphasis on 19th and 20th century French and German repertoire. The relationship of poetry and music in the melody and Lied is stressed. *Prerequisites: MCOM 10-17, MHIS 11, 12, 13, or permission of the instructor.*

MHIS 150. Medieval Music (3)
Topics in music history to c. 1450. *Prerequisites: MCOM 10-17, MHIS 11, 12, 13, or permission of the instructor.*

MHIS 151. Music in the Renaissance (3)
Topics in the history of the music of the 15th and 16th centuries. *Prerequisites: MCOM 10-17, MHIS 11, 12, 13, or permission of the instructor.*

MHIS 152. Music in the Baroque (3)
Topics in music history from c. 1580 to c. 1750. *Prerequisites: MCOM 10-17, MHIS 11, 12, 13, or permission of the instructor.*

MHIS 153. Classical Studies (3)
Study of music from c. 1750-1810 with stress on evolution of style and historical factors which relate to this evolution. *Prerequisites: MCOM 10-17, MHIS 11, 12, 13, or permission of the instructor.*

MHIS 154. Romantic Studies (3)
Study of music of the 19th century and its relationship to other art forms and historical developments. *Prerequisites: MCOM 10-17, MHIS 11, 12, 13, or permission of the instructor.*

MHIS 191. Independent Study (3)

MHIS 193. Special Topics (3)

MHIS 197 Research in Music History (1-4)
Prerequisite: Permission of the instructor.

MHIS 250. Medieval Music (3)
Topics in music history to c. 1450. Emphasis will be on research methodology. *Prerequisites: MCOM 10-17, MHIS 11, 12, 13, or permission of the instructor.*

MHIS 251. Music in the Renaissance (3)
Topics in the history of the music of the 15th and 16th centuries. *Prerequisites: MCOM 10-17, MHIS 11, 12, 13, or permission of the instructor.*

MHIS 252. Music in the Baroque (3)
Topics in music history from c. 1580-1750. *Prerequisites: MCOM 10-17, MHIS 11, 12, 13, or permission of the instructor.*

MHIS 253. Classical Studies (3)
Study of music from c. 1750-1810 with stress on evolution of style and historical factors which relate to this evolution. *Prerequisites: MCOM 10-17, MHIS 11, 12, 13, or permission of the instructor.*

MHIS 291. Independent Study (1-3)

MHIS 293. Special Topics (3)

MHIS 254. Romantic Studies (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: MCOM 10-17, MHIS 11, 12, 13, or permission of the instructor.*

Music Management Department

MMGT 10. Freshman Seminar – Music Management (1)
A general introduction to making a successful transition to college. Areas covered include understanding department and University procedures and regulations, developing a four-year academic plan, professional orientation and career planning, writing and research, styles of learning, computer skills assessment, and beginning a student portfolio. Required of all freshman in Music Management.

MMGT 11. Music, Entertainment in U.S. Society (4)
Introductory course covering the business, financial, and legal parameters of the music industry. Special emphasis is given to understanding recording contracts, artist management, royalty earnings, copyright issues and motion picture music.

MMGT 96. Sound Recording Fundamentals (3)
An introduction to basic audio techniques applicable to recording and live sound. A combination of lecture, lab sessions and independent studio projects will provide a basic understanding of how audio is captured, stored and manipulated in the recording industry.

MMGT 97. Performing Arts Administration (3)
A practical approach to management and business issues affecting arts organizations, including program planning, budget development, fund-raising, community relationships and concert promotion and production.

MMGT 111. Music Industry Analysis (4)
Using reading, research, and discussion, students investigate the evolution of the American popular music industry during the last century. Social, cultural, business and technological changes are considered. Emphasis is placed on critical thinking, forming and defending opinions, and clearly presenting written and oral arguments supporting student-development theses relating to a variety of eras and themes. *Prerequisite: MMGT 11.*

MMGT 140. Music Products Management (3)
This course introduces students to the inner workings of the operations, sales and financial aspects of the music products industry. Course work includes case studies, lab sessions at a music retailer, development of a retail store start-up plan and site visits to leading regional music products firms. *Prerequisites: MMGT 11, ECON 53 and MATH 35.*

MMGT 141. Music Products Practicum (2-4)
This course provides students with a laboratory learning experience in the music products industry. Typically, students will perform their practicum in this area during their sophomore or junior year. minimum requirement is 80 hours on-site, plus time required for meetings with faculty adviser and preparing journals and other written assignments. *Prerequisite: MMGT 140, faculty adviser recommendation.*

MMGT 153. Entertainment Law (4)
All aspects of legal relationships and rights problems in films, television, music and records. Normally taken during the student's final semester on campus *Prerequisites: MMGT 11 and BUSI 53.*

MMGT 187. Music Industry Internship (2-4)
An opportunity for qualifying students to work in an area of the music industry that interests them. Coordinated with the Pacific Career Resource Center. *Prerequisite: Successful completion of two courses in Music Management, approval of faculty adviser.*

MMGT 191. Independent Study (1-2)

MMGT 193. Special Topics (1-4)

MMGT 195. Music Industry Analysis (0-4)
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: MMGT 011*

MMGT 196. Senior Seminar (2)
MMGT 196 is a launch pad for seniors about to enter the music industry. Students will assess current career trends, meet with leading practitioners, perform research in their specific field of interest and fine-tune their professional portfolio. Professional skill development in interviewing and organizational behavior is included along with field trips to visit regional music industry firms. *Prerequisite: Senior standing in MMGT of School of Business Arts & Entertainment emphasis.*

MMGT 197. Undergraduate Research (1-4)

MMGT 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 Pacific Office of Cooperative Education.

MMGT 199. Exit Examination (0)
This course is an exit examination that provides assessment at the completion of all relevant coursework in Music Management. Students demonstrate mastery of skills required of professional music business practitioners. Test measures performance in the areas of critical thinking, music industry analysis, and written expression. A passing grade is required for all graduates in Music Management.

Music Performance Department: Applied

MAPP 1. Applied Music, Class Lessons (1)
Enrollment in applied music classes requires an applied music fee per unit.

MAPP 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.

MAPP 10. Applied Music (1-2)
For music majors in music 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.

MAPP 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.

MAPP 12. Applied Music (1-2)
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.

MAPP 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.

MAPP 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.

MAPP 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.*

MAPP 191. Independent Study (1-2)

MAPP 210. Graduate Applied Music for Non-performance Majors (1-2)
By audition only.

Music Performance Department: Ensembles

Ensembles are open to all students by audition and/or permission of the instructor.

MPER 60. Chamber Ensemble (1)
Enrollment by permission of the instructor.

MPER 66. Jazz Ensemble (1)
Study and performance of music designed for the large jazz ensemble. Open to all students by audition.

MPER 67. Jazz Combo (1)
Study and performance of music designed for the small jazz combo. Emphasis placed on jazz improvisation, and performance of a wide variety of styles for this medium. Open to all students by audition.

MPER 69. Opera Theatre Workshop (1)

MPER 70. University Symphony Orchestra (1)
Open to all students by audition. Major ensemble.

MPER 72. Symphonic Wind Ensemble (1)
Open to all students by audition. Major ensemble.

MPER 73. Concert Band (1)
Open to all students. Major ensemble.

MPER 80. Opera Production (1)
Major ensemble. By audition only.

MPER 82. The Oriana Choir (Women's Chorus) (1)
Open to all students by audition. Major ensemble. Average of two concerts per semester.

MPER 83. University Chorus (1)
Open to all students by audition. Major ensemble. Average of two concerts per semester.

MPER 84. Pacific Singers (1)
Audition required for enrollment. Average of three concerts per semester. Major ensemble.

MPER 140. Pedagogy of Piano (2)
Study of teaching methods and materials for elementary, intermediate and advanced piano students. *Prerequisite: permission of the instructor.*

MPER 141. Pedagogy of Voice (2)
Overview of the anatomy and physiology of the singing voice with an emphasis on respiration, phonation, resonation, and articulation. Examination of various methods of the teaching singing based on current scientific discoveries as well as important classical treatises. *Prerequisite: permission of the instructor.*

MPER 169. Advanced Opera Theatre Workshop (1)

Music Performance Department: Supportive Courses

MPER 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; rules of pronunciation in English, Italian, German and French. 20 is prerequisite to 21.

MPER 30. Jazz Piano I (1)
Jazz piano instruction geared toward the non-pianist. This course will provide a foundation of skills that will be built upon in the second semester. Students will acquire the ability to perform standard jazz compositions with minimal right-hand improvisation and sight-read chord changes.

MPER 31. Jazz Piano II (2)
Jazz piano instruction geared toward the non-pianist. This course provides more advanced study of jazz progressions and skills acquired from the first semester. Students will acquire the ability to perform standard jazz compositions utilizing rootless and quartal voicings, contemporary harmonies, and sight-read advanced chord changes. *Prerequisite: MPER 30*

MPER 50. Solo Class (0)
Weekly performance recital for all music majors.

MPER 69. Opera Workshop (1)
The purpose of this course is to explore acting techniques (Yakim, Chekhov) that will address the demands unique to the performance preparation of the singing actor. By exercising the basic tools of acting - the body and the imagination - training for work on the stage begins.

MPER 80. Opera Production (1)
This course allows students to receive credit for applied work on the main stage opera (rehearsal and performance) or in the Opera Studio; participation is by audition only.

MPER 120, 121. Lyric Diction (2, 2)
Theory and practice of singing Italian, German, English and French. Translation and declamation of texts. *Prerequisites: MPER 20, 21.*

MPER 130. Accompanying (1)
Practical training in vocal and instrumental piano accompaniments. (Two units by instructor's permission).

MPER 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.

MPER 140. Pedagogy of Piano (2)
Study of teaching methods and materials for elementary, intermediate and advanced piano students. *Prerequisite: permission of the instructor.*

MPER 141. Pedagogy of Voice (2)
Overview of the anatomy and physiology of the singing voice with an emphasis on respiration, phonation, resonation and articulation. Examination of various methods of the teaching of singing based on current scientific discoveries as well as important classical treatises. *Prerequisite: permission of the instructor.*

MPER 151. Principles of Conducting (2)
Basic techniques of the baton, score reading and interpretation. *Prerequisite: MCOM 11-14.*

MPER 152. Choral Conducting (2)
Principles of conducting applied to choral rehearsals and repertoire. *Prerequisite: MPER 151.*

MPER 153. Instrumental Conducting (2)
Principles of conducting applied to band and orchestra rehearsal and repertoire. *Prerequisite: MPER 151.*

MPER 169. Advanced Opera Workshop (1)
This course affords singers the opportunity to practice performance techniques learned in Opera Workshop. The first term is dedicated to repertoire and audition technique (Craig), while the second term focuses on scene study (Meisner, Felsenstein).

MPER 191. Independent Study (1-2)

MPER 291. Graduate Independent Study (1-4)

Music Therapy Department

MTHR 11. Music as Therapy: A Survey of Clinical Applications (3)
This course introduces the uses of music as a creative arts therapy, including an overview of the history, theory, and clinical practice of music therapy across a broad range of settings. Classroom experiences, readings, films, and field observations introduce the student to various uses of music in the treatment of children and adults; a foundation for the sequence of music therapy courses which together support development of required AMTA competencies for the professional music therapist. This course also offers an introduction to music therapy for interested persons in other health and pre-professional programs. OPEN TO NON-MAJORS.

MTHR 18. Basic Skills for Music Therapists and Allied Professionals (3)
This course supports the development of applied/basic music skills necessary for implementing therapeutic music interventions with children and adults. Students will increase performance competencies in the areas of singing and accompanying, and will explore improvising/composing/arranging with instruments such as autoharp, omnichord, Orff and other rhythmic/ethnic instruments. Includes development of song repertoire commonly used across various therapeutic settings. OPEN TO NON-MAJORS. *Prerequisites: MCOM 2.*

MTHR 20. Observation and Assessment in Music Therapy (2)
This course will focus on developing observation skills and assessment competencies. Students practice implementation of standardized and therapist-constructed assessments to appropriately measure and monitor progress and evaluate effectiveness of music therapy interventions for children and adults. Includes fieldwork assignments in observation, data collection, and assessment. *Prerequisites: MTHR 11 and 18.*

MTHR 135. Music with Children in Inclusive Settings: Therapeutic and Educational Applications (3)
This course will present specific music therapy techniques and skills for the development of programs for children's successful integration within home/school/community environments. Students will identify and create therapeutic music strategies to effect changes in children's academic, social, motor, and leisure skills development. This course will also acquaint students with relevant music therapy/education research and current legislation regarding children within inclusive settings. OPEN TO NON-MAJORS. *Prerequisites: SPED 123 and either MTHR 18 or MCOM 2; or with instructor permission.*

MTHR 140. Psychology of Music (3)
Psychological foundations of music. Includes the study of acoustics, perception of sound, and physical and psychosocial responses to music. Students survey current research in music/music therapy and develop skills in applied research methodology. *Prerequisite: Fundamentals of Music (MCOM 2) or permission of the instructor. OPEN TO NON-MAJORS.*

MTHR 141. Music Therapy in Mental Health and Social Services (3)
This course contains theory, research, and clinical skills related to music therapy for adults, children, and adolescents in various mental health and social service treatment settings. It also includes an introduction to DSM IV criteria for mental disorders commonly encountered by music therapists, and an overview of major theories of psychotherapy as they relate to music therapy. Introduction to music therapy techniques for group treatment, including music improvisation, songwriting, and basic relaxation methods are taught. For music therapy majors only. Must be taken concurrently with Fieldwork in Music Therapy. *Prerequisites: MTHR 11, 18, 135, & 140, Abnormal Psychology (PSYC 111) and completion of Voice, Guitar, and Piano competencies.*

MTHR 142. Music Therapy in Medicine and Health Care (3)
This course provides an overview of music therapy with children, adults, and older adults in medical settings. Students survey theories, methods, and empirically supported treatments in settings such as acute care, physical rehabilitation, gerontology, palliative care, preventative medicine, and health maintenance. It also includes study of physical and psychosocial processes natural to aging and end of life, and assists students in developing skills in improvised music for relaxation and palliative care. For music therapy majors only. *Prerequisites: MTHR 11, 18, 135, & 140, 141, Human Anatomy and Physiology (BIOL 11) and completion of Voice, Guitar, and Piano competencies.*

MTHR 143. Supervisory Techniques (1-2)
Techniques in the supervision of music therapy fieldwork. Course open to music therapy majors by permission of the instructor only. *Prerequisites: MTHR 11, 18, 20, 135, 140 and 150.*

MTHR 150. Fieldwork in Music Therapy (1-2)
Fieldwork provides students with structured clinical experiences in music therapy under the supervision of a music therapist in varying community settings. This course is repeated for credit and taken concurrently each semester students are enrolled in MTHR 135, 140, 141, and 142. *Prerequisites: MTHR 11, 18; open only to music therapy majors. A minimum of 4 units of Fieldwork (MTHR 150) is required for completion of the music therapy degree program.*

MTHR 187. Internship in Music Therapy (1)
This course consists of clinical training experience at an internship site approved by the AMTA. Successful completion of required hours and competencies allows students to sit for the Music Therapy Board Certification Examination. *Prerequisites: Successful completion of all coursework and functional music skills.*

MTHR 191. Independent Study (1-2)

MTHR 193. Special Topics (1-2)

MTHR 235. Music in Special Settings (3)
Music learning with special populations in the inclusive classroom. Students will learn to set appropriate music objectives and design teaching strategies utilizing music for the disabled child in the public school. Open to non-majors.

MTHR 244. Community Approaches to Music Therapy (3)
Exploration of changing mental health practice, private practice, specialization, community health centers and the team approach.

MTHR 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.

MTHR 291. Independent Study (1-4)

MTHR 293. Special Topics (1-2)

MTHR 299. Thesis (1-4)
Option A: an original monograph embodying original research. Option B: approved clinical clerkship in lieu of written thesis.

Conservatory of Music Faculty

Stephen C. Anderson, Dean, Conservatory of Music, Professor of Music, 2000, B.M., Southwestern College (KS), 1967; M.S., Louisiana State University, 1968; D.M.A., University of Oklahoma, 1977.

Jennie Blomster, Lecturer in Horn, B. M. University of Denver. Studied with Thomas Hiebert, Richard Seraphinoff, David Krehbiel, David Kappy, John Keene, and David Kaslow. Performances with the Gold Country Chamber Orchestra, Merced Symphony Orchestra, Moment Musical Chamber Ensemble, Fresno Brass Quintet, Fresno Philharmonic Orchestra, and the Fresno Philharmonic Woodwind Quintet.

C. Michael Brae, Lecturer in Music Management, B.A., University of San Francisco, BFA, The Academy of Art College, San Francisco; CEO of Hitman Records, Author, "Music Distribution: Selling Music in the New Entertainment Marketplace" (2002).

Ruth V. Brittin, Professor of Music Education, Chair, Department of Music Education, 1997, Ph.D., Florida State University, 1989; M.M.E., Texas Tech University, 1985; B.M.E., Texas Tech University, 1983. Editor, Update: Applications of Research in Music Education, publishes and presents research for the International Society for Music Education, Music Educators National Conference, and state music education organizations. Active music education clinician, brass adjudicator, and performer on French horn. Division representative for California Music Educators Association. Former Chair of Music Education at Syracuse University, 1989-1997.

K. Allen Brown,* Visiting Lecturer of Percussion, 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.

Edward Cetto, Assistant Professor of Music, Director of Choral Activities, 1994, M.M., Boston Conservatory of Music, 1992; B.Mus. Ed., Hart School of Music (U. of Hartford), 1981; Certificate, Kodaly Musical Training Institute (Hungary), 1980.

David Chase, Assistant Dean, Instructor in Music Management, 2001, B.M., Trumpet Performance, University of the Pacific, 1994, M.A. 2001.

Robert Coburn, Professor of Music Composition and Theory, Director, Conservatory Computer Studio for Music Composition. Artistic Director, Ensemble 20/21, Chair, Department of Music Studies, 1993, Ph.D., University of Victoria (Canada), 1995; M.A., University of California, Berkeley, 1974; B.M., University of the Pacific, 1972. Selected Commissions and Performances: Sunriver Music Festival, San Francisco New Music Ensemble; Royal Conservatory of Music (Stockholm, Sweden), Victoria International Festival (Victoria, B.C., Canada), Electronic Music Plus Festival (N.C.), Roulette Festival of New Music (N.Y.). Permanent Sound Environment Installations: 39 Bells (Philadelphia), 1996; Bell Circles II (Oregon Convention Center, Oregon Public Art Program), 1991.

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.

John Cozza, Visiting Lecturer, Applied Piano and Accompanying, 2004. B.M., M.M., University of Southern California, diploma in piano performance and in chamber music from the Hochschule fur Musik in Vienna, Austria, D.M. in solo performance, chamber music and accompanying from Northwestern University. Studied with Daniel Pollack in Los Angeles, David Kaiserman in Chicago, and Hans Graf and George Ebert in Vienna. Member of Pi Kappa Lambda, Phi Mu Alpha, Amercan Liszt Society, and the Franz Schmidt Society in Austria.

Donald DaGrade,* Professor of Bassoon and Saxophone, 1970, B.S., Brigham Young University, 1959; M.M., Indiana University, 1965; Mus.D., 1969; Student of Leonard Sharrow, Simon Kovar, Eugene Rousseau, Earl Bates, Harry Houdeshel; Member, Pacific Arts Woodwind Quintet; Principal bassoon with the Stockton Symphony; Former principal bassoon with the Sacramento Symphony and Indiana University Philharmonic Orchestra. Bassoon coach for the Asian Youth Orchestra.

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.

Daniel Ebbers, Assistant Professor of Voice, 2004. B.M. University of Wisconsin-Stevens Point, M.M. University of Southern California, artist training at Universita per Stranieri, Italy, Utah Festival Opera Young Artist Program, Glimmerglass Opera Young American Artists Program, Britten-Pears School for Advanced Musical Studies, resident artist, Los Angeles Music Center Opera.

Nina Flyer, Lecturer in Cello, 1997, B.M., University of Southern California, 1973. Principal cellist, Women's Philharmonic and Classical Philharmonic. Has performed with San Diego Symphony, San Francisco Symphony, Jerusalem Symphony, Iceland Symphony. Recordings: cello/piano and cello/harp suites by Lou Harrison, to be released in 1998; Cello concerto by Shulamit Ran with ECO, on KOCH International, 1995 (nominated for 2 Grammys).

James Haffner, Assistant Professor of Voice and Director of Opera, 1999. B.A. degree in theatre from Baldwin-Wallace College, an Artists' Diploma in opera stage directing and a Master of Fine Arts in directing from the University of Cincinnati College-Conservatory of Music. Member of the Lincoln Center Theatre Directors' Lab and National Opera Association Board of Directors, consultant with Opera America. He has taught at the Hochschule der Kunste, Berlin and Die Technische Universitat, Berlin; stateside, he has served on the faculties of the University of Kentucky, Miami University of Ohio, Webster University and Cal State Fullerton.

Eric Hammer, Professor of Music, Director of Band Activities, Professor of Music Education, 1993; B.M., University of the Pacific, 1973; M.M., University of Oregon, 1990; D.M.A., University of Oregon, 1994.

Keith N. Hatschek, Assistant Professor of Music Management; Director, Department of Music Management Program. B.A. University of California Berkeley, 1973; Certificate in Marketing, University of California Berkeley, 1993. Principal and founder of Keith Hatschek & Associates, consultant to the recording technology and entertainment industries. Author, "How to Get a Job in the Music and Recording Industry" (2001) Berklee Press, "The Golden Moment: Great Engineers and Producers Share Their Secrets" (2005) Backbeat Books, regular contributor to various print and online music industry journals. Voting member National Academy of Recording Arts and Sciences, Associate Member-Audio Engineering Society, Faculty adviser-NAMM-Affiliated Music Business Institutions (NAMBI), member, Music and Entertainment Industry Educators Association (MEIEA).

William Douglas Hunt, Lecturer in Tuba, 1989, B.M., University of the Pacific, 1966; M.A., 1991. Studied with Arnold Jacobs and William Bell. Public school teacher, instructor, San Joaquin Delta College. Former tubist with U.S. Naval Academy Band, Annapolis Symphony and currently with the Tower Brass Quintet and the Stockton Symphony.

Mathew T. Krejci, Lecturer in Flute, 1989, M.M., Indiana University, 1978; B.M.Ed., Indiana University, 1973. Principal Flutist in the Festival Orchestra, 1978-83. Presently performs as a member of the Sacramento Philharmonic. Performed with Music Now, President of the Board of the Chamber Music Society of Sacramento. Principal Flute of the Bear Valley Music Festival, recordings with the VUTAE, Albion, and Klavier labels.

Patrick Langham, Associate Professor and Director of Jazz Studies, 2003. Holds both the Bachelor of Music with a concentration in jazz studies and the Master of Music with a concentration in jazz studies from the University of Tennessee in Knoxville. He has taught at the University of South Carolina – Spartanburg and Tusculum College in Knoxville. As a saxophonist and director Professor Langham has performed with distinguished jazz artists and on numerous jazz festivals throughout the southern United States. He has developed and taught courses in jazz history, theory, improvisation, and performance, and has created and operated a highly successful jazz camp at USC Spartanburg.

Sonia Leong, Lecturer in Piano, 2001, B.M., University of British Columbia, 1992; M.M., Peabody Conservatory of Music, 1994; Concert Recital Diploma, Guildhall School of Music, 1995; D.Mus., University of Montreal, 1998. Member of New Pacific Trio. Concerto performances with Filarmonica de Stat Dinu Lipatti (Romania) and Banff Festival Chamber Orchestra (Canada). Performances in Canada, the US, England, Romania, Switzerland, and Hong Kong. Former faculty member of the University of Puget Sound.

Terry Mills, Visiting lecturer in Guitar, 1971. B.M. University of the Pacific, graduate studies in guitar performance at CSU Sacramento with Richard Savino, master classes with Oscar Ghiglia at the Aspen Music Festival, and has had private studies with Philip deFremery, George Sakallariou, and David Tannenbaum. He has studied Renaissance and Baroque lute and guitar with Donna Curry, Eugen M. Dompois, Toyohiko Sato, Robert Strizich, and Anthony Rooley. Past director of The Woods So Wylde, an early music consort, the Pacific Guitar Ensemble, and is a member of the Sakakeeny-Mills Flute and Guitar Duo.

Thomas F. Nugent, Lecturer in Oboe, 1990, B.M., San Francisco Conservatory of Music, 1984. Student of Marc Lifschey. Attended Tanglewood, Spoleto and Colorado Philharmonic Music Festivals. Has performed with San Francisco Symphony, Opera and Ballet Orchestras. Also performs with the California Symphony, San Francisco Contemporary Music Players, Sierra Chamber Society and Sonus Imaginorem. Member, Pacific Arts Woodwind Quintet.

Leonard Ott, Lecturer in Trumpet, 1998, B.A. in Music, California State University, Hayward, 1987. Advanced study at California State University, Northridge. Principal Trumpet with the Oakland Ballet Orchestra, the Sacramento Symphony, Modesto Symphony and the European Tour of "A Chorus Line." Private trumpet instructor in orchestra, band, and jazz.

Stephen Perdicaris, Lecturer in Trombone/ Euphonium, Director, Pacific Music Camp, Director, Brubeck Institute Jazz Camp, Operations Manager, Conservatory of Music, 1993, B.M., University of North Texas, 1981, Associate with Honors, Royal College of Music, London, 1990. Numerous recordings with Sir Simon Rattle and the City of Birmingham Symphony (England) on EMI. Currently a member of the Sacramento Philharmonic. Clinician, Selmer Corporation.

Margaret Perry, Lecturer in Class Piano and Piano Pedagogy, 2004. B.M., M.M. Bringham Young University, D.M.A. University of Arizona. Ensemble Artist Pianist with the Utah Symphony and Opera. Member, Music Teachers National Association, College Music Society, and Phi Kappa Phi.

Jean Purnell, Dean of Libraries, 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.

Camille Reed, Lecturer in Music Management, B.A. Music, Rhode Island College, 1982; Masters, Non Profit Administration, Alfred University, 1990; former Executive Director of New York Chamber Symphony, Long Island Philharmonic, Allegany Arts Association, Modesto Symphony Orchestra. Past employment with Detroit Symphony, Rhode Island Civic Chorale and Orchestra, Alfred University Division of Performing Arts. Board or panel service with Association of California Symphony Orchestras, Massachusetts Cultural Council, New York State Council of the Arts. Previous teaching at Roger Williams College and NATO, Europe.

François Rose, Associate Professor of Composition and Theory, 1997, B.M., McGill University, 1986; M.M., 1991; Certificate from the Institut de Recherche et de Coordination Acoustique et Musique (IRCAM), 1991; Ph.D., University of California San Diego, 1997. Instructor at McGill University and at the University of San Diego. Guest lecturer at the Conservatoire Suprieur de Musique de Paris, Institute de Recherche et de Coordination Acoustique et Musique (IRCAM), Warsaw Music Academy, Darmstdt Summer Course for New Music. Award winner in the 3rd International Composers' Competition "Kazimieri Serocki" in Poland, 1990; and in the SDE/PRO Canada Composers' Competition in 1986, 1987 and 1988.

Patricia Shands,* Associate Professor of Clarinet, Chair, Department of Applied Music, Coordinator of Chamber Music. 1995. D.M.A. Rice University, 2001, M.M., University of Southern California, 1985, B.M. Peabody Conservatory of Music, 1981. Student of David Shifrin, Mitchel Lurie, and David Peck. Prizewinner in the International Concert Artist Guild competition. Featured at music festivals of Spoleto, Chautauqua, Round Top, Tucson Winter Chamber Music Festival and frequent live performances nationally on NPR "Performance Today". Solo and chamber music recordings on Round Top and Alpine labels. Current member of the Brooke Ensemble, Ariel Ensemble, Stockton Symphony, Sacramento Philharmonic, Music Now and the Pacific Arts Woodwind Quintet. Active solo and chamber music performer, recording and doing performance tours throughout the United States, Canada, South America and Europe.

Michael Sokol, Assistant Professor of Voice. B.M. Arizona State University; M.M. University of Cincinnati-College Conservatory of Music; M.A. Theatre, Performance Certificate in directing from Northwestern University. Training at the Tanglewood Institute, Music Academy of the West, Santa Fe Opera, and the Chautauqua Institute. Studied with Marlena Malas, Gary Kendall, Jerry Doan, and Richard Dales. Performances with the Metropolitan Opera, Nashville Opera, Nederlands Opera Zuid, Nevada Opera, Kentucky Opera, Portland Opera, Brooklyn Academy of Music, Atlanta Opera, Chicago Opera Theater, Augusta Opera, Opera Omaha, Boston Opera, Long Beach Opera, Glimmerglass Opera, Steppenwolf Opera Company, Eugene Opera, Skylight Opera, Philadelphia Orchestra, St. Louis Symphony, Los Angeles Chamber Orchestra, Santa Barbara Symphony, Phoenix Symphony, and the Cincinnati Chamber Orchestra.

Monica Swope, Lecturer in Voice and Staff Accompanist. Monica Swope is currently lecturer in voice and serves as a staff accompanist. She holds the B.M. in vocal performance from the University of the Pacific, where she studied piano with Frank Wiens, voice with William Whitesides, George Buckbee, and John DeHaan, and conducting with William Dehning and Robert Halseth. Ms. Swope has performed with the Stockton Symphony Orchestra. She has performed the roles of Eliza Doolittle in My Fair Lady, Cherubino in Le Nozze di Figaro, Old Maid in Old Maid and the Thief, and has served as musical director for Pajama Game and Paint Your Wagon, Oliver, and You're a Good Man Charlie Brown. At Pacific Ms. Swope teaches voice and vocal repertory and serves as an accompanist for vocal students.

Nicholas Waldvogel, Associate Professor of Orchestra; Director - University Symphony Orchestra. B.A. in Music, Harvard, 1989; M.A. in Music, Harvard, 1989; M.M. in Conducting, Peabody Conservatory of Music, 1993; Graduate Performance Diploma in Conducting, Peabody Conservatory, 1994; Ph.D. in Music History, Yale University, 1992. Formerly with the Orchestre de la Suisse-Romande (Switzerland), and the State Philharmonic "Dinu Lipatti" (Romania).

Frank H. Wiens,* Professor of Piano, 1976, B.M., University of Michigan, 1970; M.M., 1970; Student of Benning Dexter, Gyorgy Sandor, Harald Logan and John Perry. New York recitals at Carnegie Recital Hall in 1984 and 1991; London recital at Purcell Room, 1986; soloist with Atlanta, Denver and Detroit Symphonies and Yaroslavl Philharmonic in Soviet Union; concert tours in Asia and Europe, and annually in the United States; compact disc recording of Rachmaninoff Third Piano Concerto with Slovakia National Orchestra released in 1995 on Fanfare-Intersound label. Eberhardt Teacher-Scholar Award, Faculty Research-Lecturer Award, Distinguished Faculty Award.

Linda Wang, Assistant Professor of Violin, 2003. She holds the B.M., Artist's Diploma, M.M., University Southern California, Fulbright Grant for studies at the Salzburg Mozarteum. Major teachers include Dorothy DeLay (Juilliard), Alice Schoenfeld (USC), and Ruggiero Ricci (Mozarteum). First prize, International Markneukirchen Competition, Young Artist Award of the National Federation of Music Clubs, International Kingsville Competition in Texas, scholarship prize in the International Geneva Music Competition in Switzerland. Member, National Federation of Music Clubs, Music Teachers Association, College Music Society, Chamber Music America, and the American String Teachers Association.

Lynelle Frankforter Wiens, Professor of Voice, 1978, B.M., University of Nebraska, 1975 (Phi Beta Kappa); M.M. with Distinction, Indiana University, 1978; Mus. D. with High Distinction, Indiana University, 1988. Student of Eileen Farrell, Margaret Harshaw, Lynn Wickham. MTNA National Winner, 1971; Van Lawrence Fellow (awarded by National NATS and the Voice Foundation), 1993. Served as a faculty member at the Symposium on the Care of the Professional Voice (Philadelphia) and the Pacific Voice Conference (San Francisco.)

Therese West, Assistant Professor of Music Therapy and Music Education, 2002. Chair, Department of Music Therapy. B.A., University of California, 1976; Music Therapy Equivalency, Willamette University, 1984; M.M., Music Therapy, University of Miami, (FL), 1999; Ph.D. Interdepartmental Studies; Music Therapy and Health Psychology, University of Miami, (FL), 2003; Board-Certified in Music Therapy, 1989; Fellow, Association for Music and Imagery (AMI), 2002. Conducts supervision and training in the Bonny Method of Guided Imagery and Music (GIM), on training staff of Therapeutic Arts Training Institute, San Francisco. Editorial Board of Music Therapy Perspectives.

David E. Wolfe, Professor of Music Therapy, Coordinator of Graduate Studies, Conservatory, 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. Listed among the 25 most eminent music researchers in the United States, past Editor of the Journal of Music Therapy, Eberhardt Teacher-Scholar Award, recipient of the American Music Therapy Association Publications Award, serves on the Scientific Committee, Revista Espanola de Musicoterapia, and Scientific Committee for the World Congress of Music Therapy. Frequent presenter at national and international conferences, symposia, workshops, and seminars.

Eric Wood, Lecturer in Music Composition and Theory, 1998, D.M.A., Boston University, 1994; M.M., University of Oregon, 1986; B.M., 1984. Numerous commissions and performances, several published articles and lectures. Studied with Lukas Foss, Monte Tubb, Charles Fussell and Derek Healey.

**Members of Resident Artist Series*

eberhardt school of business

Dean
Charles Williams

School Telephone
209.946.2476

Website
www.pacific.edu/esb

Contents

A professional school offering graduate and undergraduate programs providing the educational breadth and depth for tomorrow's leaders of business, government, and not-for-profit organizations.

Mission

The Eberhardt School of Business's mission is to prepare students for successful careers as leaders of business, government, and not-for-profit organizations by integrating a broad-based educational foundation with business principles in a personalized learning environment that emphasizes small classes and opportunities for extensive interaction between students, faculty and practitioners. To support this mission, the School is committed to the continued professional growth of faculty and staff through scholarship and other professional development, and to the integration of the School into the broader community. For its students the School strives to:

- Develop skills in leadership and innovation;
- Develop technical and analytical competence;
- Develop an understanding of the global business environment;
- Instill concern for issues of ethics and social responsibility;
- Encourage community service.

The degree programs in business administration are designed to fulfill this mission and to provide the educational breadth and depth tomorrow's leaders will need.

The Eberhardt School of Business was established in 1977 to fulfill the need for small, high quality management programs that could nurture the personal, professional and overall intellectual growth and development of talented men and women. The school currently has 27 full-time faculty and an enrollment of over 600 graduate and undergraduate students.

Small classes and excellent instructional facilities reinforce a highly personalized learning environment that encourages one-on-one interactions between students and faculty. Faculty and administrators are committed to making teaching the most important activity in the School. Outside the classroom, students choose from a wide variety of activities, including internships, student clubs and student government 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 graduates.

For most business students, a major objective of their college education is to prepare for a successful career. Surveys of successful executives suggest that in order to meet the challenges and opportunities of the future, tomorrow's managers will need 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. The academic programs of the Eberhardt School of Business have been designed to address these objectives.

Accreditation

The School is accredited by AACSB International - The Association to Advance Collegiate Schools of Business.

Degrees in Business Administration

The School of Business offers the Masters of Business Administration (MBA), Bachelor of Science degree in Business Administration, and a Minor in Management. The School also offers an accelerated BS/MBA program for qualified students.

Degree Requirements

Bachelor of Science in Business Administration

The four-year undergraduate degree program requires the completion of 128 total units. The program has four segments: general education; pre-professional skills requirements; core courses of technical subjects in business and management; and in area of concentration. The specific requirements are outlined below.

Pre-professional Skills

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 ESB students must consult with their faculty advisers before registering. The following pre-professional skills courses are required:

1. Advanced Writing: ENGL 23-Business Communications or another approved writing course.
2. Public Speaking: COMM 27-Public Speaking.*
3. Mathematics: MATH 45-Introduction to Finite Mathematics and Calculus* and MATH 37-Probability and Statistics.*
4. Computer Literacy: COMP 25-Computers and Information Processing.*
5. Economics: ECON 53-Microeconomics* and ECON 55-Macroeconomics*.

** These courses are also part of the Pacific General Education Program, and can be counted toward the University General Education requirements.*

Business Administration Core Courses

The core requirements for the Business Administration degree include BUSI 10-Deans' Seminar (required only for entering freshmen), the BUSI-110 Career Development Seminar (required for all juniors) and nine other courses that deal with specific functions of business. Included are BUSI 31-Financial Accounting; BUSI 33-Managerial Accounting, BUSI 53-Legal and Ethical Environment of Business; BUSI 100-Management Information Systems; BUSI 104-Operations Management; BUSI 105-Financial Management; BUSI 107-Marketing Management; BUSI 109-Management and Organizational Behavior; and BUSI 181-Strategic Management and Policy.

Business Administration Concentrations

The Bachelor of Science in Business Administration offers concentrations in a wide variety of areas including Accounting, Finance, Business Law, Management Information Systems, Marketing, International Business, Real Estate, Management & Human Resources, Entrepreneurship, Arts and Entertainment Management, Economics, and General Business.

A student is required to take at least four concentration courses, one of which must be an international concentration course. A number of concentrations require more than four courses.

Core Area Concentrations

Accounting

BUSI 113a and b-Intermediate Accounting I and II; BUSI 113c-Advanced Accounting; BUSI 115-Tax Accounting; BUSI 117-Cost Accounting; BUSI 119-Auditing; BUSI 163-International Financial Management or BUSI 167-International Business Law.

Economics

ECON 101-Intermediate Microeconomic Analysis; ECON 190-Econometrics; one course from the following: ECON 121-International Trade, ECON 123-International Finance, ECON 125-Economic Development, ECON 118-Globalization History: Economic, Environmental, and Demographic Interactions; plus two other upper division economics courses.

Finance

BUSI 121-Financial Markets; BUSI 123-Investment Analysis; and BUSI 163-International Financial Management; plus one course from the following: BUSI 124-Entrepreneurial Finance; BUSI 125-Intermediate Financial Management; BUSI 126-Topics in Finance; BUSI 128-Real Estate Valuation and Investment; and BUSI 129-Real Estate Finance.

International Business

BUSI 163-International Financial Management; BUSI 165-International Marketing; BUSI 167-International Business Law; BUSI 168-Global Strategic Management or BUSI 169-Comparative Management. Each student concentrating in international business is strongly advised to study and/or internship abroad for a semester or summer and engage in the study of a foreign language.

Marketing

BUSI 141-Marketing Research; BUSI 165-International Marketing; and any two courses from the following: BUSI 143-Product Innovation; BUSI 145-Retailing and Channels; BUSI 147-Consumer Behavior; and BUSI 149-Strategic Marketing.

Management Information Systems

BUSI 136-Business Programming; BUSI 137-Database Management Systems; BUSI 138-Networking and Telecommunications Management; BUSI 139-Electronic Commerce Project; and one international concentration course from: BUSI 163-International Financial Management; BUSI 165-International Marketing, BUSI 167-International Business Law, BUSI 169-Comparative Management. MIS students are strongly encouraged to purchase an up-to-date laptop computer for use in MIS classes.

Management and Human Resources

BUSI 169-Comparative Management; BUSI 170-Human Resources Management; and any two of the following courses: BUSI 134-Conflict Management; BUSI 159-Employment Law; and BUSI 175-Leadership and Change.

General Business

Any four ESB concentration-level courses including at least one of the following: BUSI 163-International Financial Management; BUSI 165-International Marketing; BUSI 167-International Business Law; or BUSI 169-Comparative Management.

Specialty Area Concentrations

Students may also develop concentrations in a number of specialty areas, each of which focus on a particular industry or very focused career track. Following is a listing of the requirements for concentrations in several specialty areas. Specialty concentrations are subject to the availability of the courses listed. Some of these courses may not be offered every year. Additional specializations not listed below are also possible and can be self-designed by a student with the approval of his or her faculty adviser and the Dean's Office.

Entrepreneurship

BUSI 172-Entrepreneurship and any two of the following courses: BUSI 124-Entrepreneurial Finance; BUSI 143-Product Innovation; or BUSI 176-Managing Small Business. Students must also take one of the following international courses: BUSI 163-International Financial Management; BUSI 165-International Marketing; BUSI 167-International Business Law; or BUSI 169-Comparative Management.

Real Estate

BUSI 127-Legal Aspects of Real Estate; BUSI 128-Real Estate Valuation and Investment; BUSI 129-Real Estate Finance; and any one of the following international courses: BUSI 163-International Financial Management; BUSI 165-International Marketing; BUSI 167-International Business Law; or BUSI 169-Comparative Management.

Business Law

BUSI 157-Commercial Law; BUSI 167-International Business Law; and any two of the following courses: BUSI 115-Tax Accounting; BUSI 127-Legal Aspects of Real Estate; BUSI 159-Employment Law.

Arts and Entertainment Management

Three options are available within this specialty. Each requires seven courses for the concentration, three of which must be upper-division business concentration courses including one of the following international business courses: BUSI 163-International Financial Management; BUSI 165-International Marketing; BUSI 167-International Business Law; or BUSI 169-Comparative Management. The remaining four courses in each of the categories are:

Music

*MHIS 5-Music Appreciation; *MMGT 11-Music, Entertainment in U.S. Society; MMGT 153-Entertainment Law; MMGT 111-Music Industry Analysis. Suggested: MMGT 96-Commercial Music in the Recording Studio.

Visual Arts

*ARTH 9-Western Art After 1400; *ARTH 116-Contemporary Art; *ARTS 31-Design and Color or *ARTS 3-Visual Arts Exploration; ARTS 136-Visual Arts Management.

** Can be counted toward general education requirements.*

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 one of the four course concentrations.

Freshman Year Fall Semester

BUSI 10 Deans' Seminar
ECON 53 Microeconomics
MATH 45 Introduction to Finite Mathematics and Calculus
Pacific Seminar I
General Education Course

Freshman Year Spring Semester

BUSI 53 Legal and Ethical Environment of Business
ECON 55 Macroeconomics
ENGL 23 Business Communication
Pacific Seminar II

Sophomore Year Fall Semester

COMP 25 Computers and Information Processing
COMM 27 Public Speaking
BUSI 31 Principles of Financial Accounting
General Education Course

Sophomore Year Spring Semester

BUSI 33 Principles of Managerial Accounting
MATH 37 Probability and Statistics
BUSI 100 Management Information Systems
General Education Course

Junior Year Fall Semester

BUSI 105 Financial Management
BUSI 107 Marketing Management
BUSI 110 Career Development Seminar
Free Elective
Free Elective

Junior Year Spring Semester

BUSI 104 Operations Management
BUSI 109 Management and Organizational Behavior
Free Elective
Free Elective

Senior Year Fall Semester

Business Administration Concentration Course
Business Administration Concentration Course
Pacific Seminar III
Free Elective

Senior Year Spring Semester

Business Administration Concentration Course
Business Administration Concentration Course (International)
BUSI 181 Strategic Management and Policy
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 entering ESB freshmen.
3. The Career Development Seminar is required of all junior business majors.
4. All prerequisites must be met before students may enroll in any course.
5. Students taking any course numbered above BUSI 100 must have junior class standing (56 units).
6. Students in the Accounting, Economics or in Arts and Entertainment Management concentrations begin their concentration courses earlier.
7. A student must receive a grade of "C" or better in any core course which is a prerequisite before taking a related concentration course.

General Education Requirements for B.S. in Business Administration

The University requires that all students have coursework in liberal learning and basic skills in quantitative methods, reading, and expository writing. As specifically applied to business majors, it means that students entering as freshmen take Pacific Seminar I, II and III, as well as courses in categories I-A (Individual and Interpersonal Behavior), I-B (Society and Culture in the United States), II-A (Literature, Letters and Language), II-B (Fundamental Human Concerns), II-C (Practice and Perspective in the Visual and Performing Arts), III-A (Life and Physical Laboratory Science), and III-B (Formal Systems of Thought). Transfer students are required to complete the general education program by taking at least one course in each of the nine categories. Any student failing any Pacific Seminar must take an additional II-B course as a graduation requirement.

The Eberhardt School of Business follows the philosophy that tomorrow's leaders should have a broad background in general education. To insure a broadly based pre-professional education, no courses taught within the School of Business can be used by business administration students to fulfill the General Education requirements. In addition, AP credit may not be used to fulfill general education requirements.

General Academic Regulations for B.S. in Business Administration

Graduation Requirements

1. Complete at least 128 units, including the University's 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 as well as the cumulative GPA.
3. Fulfill the minimum residency requirement of 32 out of the last 40 semester units of registration at Pacific just prior to receiving the degree.
4. Fulfill the ESB minimum residency requirement of at least 32 units taken in the School.
5. A student must receive a grade of "C" or better in any core course which is a prerequisite before taking a related concentration course.

6. There is a limit on extension course credits for courses offered through the Center for Professional and Continuing Education. The total ceiling on such units is six, with a limit of 3 in any one semester.

Grading Policies

All courses required of all business administration majors must be taken for letter grade. ESB courses taken beyond those noted above may be taken on a P/NC basis, subject to the instructor's approval. The freshman level Deans' Seminar and junior level Career Development Seminar will be offered P/NC only.

Students receiving a "P" in required courses taken before becoming a major in the ESB must petition to the Academic Standards Committee for these courses to be applied toward graduation requirements.

Scholastic Actions

1. If a student has a balance point deficiency up to -8 in the major or -10 in the University GPA, he or she is on probation.
2. If a student has a balance point deficiency larger than -8 in the major and/or -10 in the University GPA, he or she is subject to disqualification. Disqualification decisions will usually 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 -10 or more may be disqualified at the end of the Fall semester if still at -8 or -10 or more at the end of that semester.
3. Any student who is on probation for three consecutive semesters is subject to disqualification.

Further clarification of these (or other) policies may be obtained from the ESB Student Affairs Office.

Transfer Students

Transfer courses must have a credit value of at least three semester units if they are to be applied to general education 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.

Junior or community college students who plan to complete upper-division work in business 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 ESB with specific questions regarding transfer credit.

Admissions Information

Additional information and specific admissions requirements can be found in the section of this catalog entitled Admission Requirements or by contacting the Associate Dean for Student Affairs, Eberhardt School of Business, University of the Pacific, Stockton, California 95211, telephone (209) 946-2640, www.pacific.edu/esb.

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 ESB. The minor is not intended as a substitute for the broad in-depth coverage found in the business degree. Non-business majors can obtain a Minor in Management by fulfilling the following requirements:

1. BUSI 31-Principles of Financial Accounting
2. BUSI 109-Management and Organizational Behavior; and
3. Any three other courses offered by the School of Business, excluding the Deans' Seminar, the Career Development Seminar, and most special topics or independent studies.

All courses taken for the Minor in Management must be taken at ESB for a letter grade, and students must attain a minimum 2.0 grade point average in these courses. Students minoring in Management must fulfill all prerequisites and junior class standing requirements for ESB courses. These students must also exercise caution in not violating the University's restriction, which allows only 30 units of BUSI courses to be credited toward the degree requirements of non-business majors.

Master of Business Administration

The Pacific MBA Program is designed to train the managers of the 21st century. The rigorous and intellectually challenging coursework goes beyond the traditional business school curriculum to emphasize important managerial skills like leadership, innovation, communication and a global perspective. The curriculum is divided into two phases, each consisting of one full-time academic year. Students with sufficient prior coursework in business may be able to waive some or all of the first year foundation courses.

Program Prerequisites:

All students are expected to have completed prerequisite courses in subjects necessary for success in MBA coursework prior to beginning the MBA. These include six units of Introductory Macroeconomics and Microeconomics (or three units of Managerial Economics), three units of Probability and Statistics and three units of College Finite Math and Calculus. These courses may have been taken at either the undergraduate or graduate level. Students may enroll in prerequisite courses simultaneously with certain first year foundation MBA courses. Students should discuss this possibility with the MBA Program Director.

Foundation Courses:

The first year includes ten courses (3 credit hours each) covering basic business skills. These foundation courses may be waived by students who have successfully completed similar courses at the undergraduate or graduate level with a grade of "B" or better at an AACSB accredited program such as the University of the Pacific. Students who waive all of the foundation courses may be able to complete the Accelerated MBA Program in one year.

BUSI 200	Management Information Systems
BUSI 201	Financial Accounting
BUSI 202	Managerial Accounting
BUSI 203	Legal Environment of Business
BUSI 204	Operations Management
BUSI 205	Financial Management
BUSI 206	Firm, Markets & Environment: Theory and Application
BUSI 207	Marketing Management
BUSI 208	Data and Decisions
BUSI 209	Organizational Behavior

Advanced Courses:

In the advanced MBA courses students can choose either General Management or a specialization in Entrepreneurship, Finance, Marketing, or Management Information Systems. All students must complete at least 30 hours of advanced graduate coursework to qualify for the MBA. Students who waive BUSI 205 must take BUSI 220 or BUSI 221 as an elective. Students who waive BUSI 207 must take an advanced marketing elective.

General Management

BUSI 268	Global Business Competition
BUSI 279	Leadership and Change
BUSI 281	Strategic Management

Plus seven elective courses

Entrepreneurship Specialization

BUSI 221 Entrepreneurial Finance
BUSI 268 Global Business Competition
BUSI 272 Entrepreneurship
BUSI 275 Technology and Innovation
BUSI 279 Leadership and Change
BUSI 282 Entrepreneurial Rapid Growth Strategy

Plus four elective courses

Finance Specialization

BUSI 220 Corporate Finance
BUSI 223 Investment Management
BUSI 263 Global Financial Markets and Institutions
BUSI 268 Global Business Competition
BUSI 279 Leadership and Change
BUSI 281 Strategic Management

Plus four elective courses

Marketing Specialization

BUSI 241 Marketing Research
BUSI 245 Customer Relationship Management
BUSI 249 Strategic Marketing
BUSI 268 Global Business Competition
BUSI 279 Leadership and Change
BUSI 281 Strategic Management

Plus four elective courses

MIS Specialization

BUSI 230 Enterprise Systems Analysis
BUSI 231 Database Management
BUSI 238 Computer Networking & Telecommunication Management
BUSI 239 MIS Project
BUSI 268 Global Business Competition
BUSI 279 Leadership and Change
BUSI 281 Strategic Management

Plus three elective courses

Internship Program:

All students with limited prior work experience are encouraged to participate in an internship.

Applied Research/Consulting Projects:

All students will participate in field projects throughout their MBA courses. Students desiring additional field experience can apply for internships or research/consulting projects through the MBA Program Office.

International Experience:

All students are expected to participate in an international business experience through the Global Business Competition course, which is conducted in a foreign location (e.g. Chile, Finland, Korea, Singapore, France, Spain, Taiwan, and Ireland in recent years). International competency is an essential element of success in today's global economy. Pacific MBA students study abroad and undertake projects in the host country often in collaboration with a partner business school in the host country.

Waiver and Transfer Policy

Waivers

Foundation courses may be waived. Applicants who have successfully completed similar courses at Pacific or another AACSB accredited university are not required to repeat the courses in the MBA Program. Applicants may request waivers for BUSI 200, 201, 202, 203, 204, 205, 206, 207, 208 and 209 if they have completed these courses for credit with a grade of "B" or better from an AACSB accredited graduate or undergraduate program within the past five years.

Transfers

In addition to Foundation courses waived, students may transfer credit for up to two advanced graduate business courses based on previous graduate coursework. A grade of "B" or better is required to transfer graduate credit. Students should note that a minimum of 24 units of MBA coursework must be successfully completed at Pacific to meet graduation requirements.

Students interested in receiving waiver or transfer credit should complete a Waiver/Transfer Request Form, available as part of the MBA Application form.

Special MBA Programs

Accelerated BSBA/MBA

The School of Business offers qualified students an unusual opportunity to complete a Master of Business Administration degree in 12-18 months of additional study beyond their undergraduate degree, rather than the usual two years. This option is available to business majors and also to non-business majors who complete ten specified core courses in the undergraduate business curriculum with a grade of "B" or better (BUSI 31, 33, 53, 100, 104, 105, 107, 109, 186 and 188). Students who have taken these classes and fulfill the admissions requirements for the MBA will be eligible to waive the MBA introductory courses and enter into the advanced phase of this uniquely designed graduate program. For further information contact the MBA Director of Student Recruitment.

Joint JD/MBA

The joint JD/MBA Program allows students to complete their three-year law degree at Pacific's McGeorge School of Law and the two-year MBA Program together in only four years. To combine the two programs, students can count up to 24 units of course credit toward both degrees. Students interested in the joint JD/MBA Program must be accepted by both the MBA Program and the Law Program separately. For those students waiving all Foundation courses the JD/MBA can be completed in 3 years including summer course work.

Peace Corps Masters International Program

Masters Internationalist students complete a portion of their studies on campus prior to entering the Peace Corps. Students will then leave for a Peace Corps assignment, including language, technical and cross-cultural training. After completing a Peace Corps assignment, students will return to campus to complete their degree. All returned Peace Corps volunteers will receive a stipend from the Peace Corps for their volunteer service.

Joint PharmD/MBA Program

The Doctor of Pharmacy (PharmD) and the Masters of Business Administration (MBA) is a joint program administered by the Thomas J. Long School of Pharmacy and Health Services and the Eberhardt School of Business. The program is an integration of pharmacy, healthcare services and management studies. This career-enhancing opportunity prepares its graduates for leadership positions in the pharmaceutical and biotechnical industries and healthcare organizations.

Admission to the MBA Program

Admission to the Pacific MBA Program is competitive and based on criteria which indicates a high promise of success. Performance in prior coursework and standardized test scores (GMAT) are important in the admission decision. A bachelor's degree or its equivalent is required for admission. The MBA Admissions Committee gives equal consideration to all undergraduate majors in the admissions process. Foreign language competency is considered an asset.

MBA admission decisions are made on a rolling basis. Applicants are notified immediately when decisions have been made. The completed application packet must be submitted before the

Admissions Committee can render a final decision. The required materials include:

- The completed application form.
- Transcripts from all undergraduate, graduate and professional schools attended.
- Two letters of recommendation written by people knowledgeable of the applicant's qualifications for graduate work.

- Interviews are by invitation only. Invitations will be made to all qualified candidates.
- A score on the Graduate Management Admissions Test (GMAT). For GMAT information, call the Eberhardt School of Business at (209) 946-2629, www.pacific.edu/esb, or contact the Educational Testing Service at P.O. Box 6103, Princeton, NJ 08541-6103, www.mba.com. These scores must be less than five years old.

Applicants may prepare for the GMAT by obtaining review material and sample questions published specially for this purpose.

For more information about the Pacific MBA Program contact the MBA Program Office.

Eberhardt School of Business
University of the Pacific
Stockton, CA 95211
(209) 946-2629
(800) 952-3179

www.pacific.edu/mba

Course Descriptions

B.S. in Business Administration Courses

BUSI 10. Deans' Seminar (1)
A general survey of the programs and methodologies of the Eberhardt School of Business, including but not limited to educational requirements, professional orientation, career opportunities and School and University regulations. Required of all ESB freshmen. (P/NC only)

BUS 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.

BUSI 33. Principles of Managerial Accounting (4)
Use and analysis of accounting information for management decision-making in planning, production, evaluation and control decisions. *Prerequisite: BUSI 31.*

BUSI 53. The Legal and Ethical Environment of Business (4)
Introduction to Law: court systems and jurisdiction; litigation and other methods of resolving disputes; ethical decision-making; the Constitution and business; lawmaking and regulation by administrative agencies; international law; business organizations; antitrust law; consumer protection; employment law, contract law; and product liability.

BUSI 100. Management Information Systems (4)
An introduction to the concepts and skills needed to utilize information systems resources. The focus is the role of information systems in management function. An emphasis is made on end-user computing, including the role of users in information system planning and design. Topics will include information systems technology, applications and development. Students will gain experience with spreadsheet, data base and network applications. *Prerequisite: COMP 25 or 51.*

BUSI 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: BUSI 31, 33; ECON 53, 55; MATH 37, 45; an acceptable computer course; junior standing.*

BUSI 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 profit-ability and liquidity. *Prerequisites: BUSI 31; ECON 53, 55; MATH 37, 45; junior standing.*

BUSI 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: ECON 53; junior standing.*

BUSI 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.*

BUSI 110 Career Development Seminar (1)
This course is designed to enable business students to clearly define their career objectives and available opportunities. Through the course business students will understand the connection between internships and full-time careers, be trained in the methods of conducting a successful job search and in preparing for on-going career development. Topics will include career assessment, resumes and related correspondence, interviewing, career planning, and job search resources. The course will also discuss opportunities available in graduate studies. *Prerequisite: junior standing.*

BUSI 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: BUSI 31 and 33 with a "C" or better; junior standing.*

BUSI 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: BUSI 113a with a "C" or better; junior standing.*

BUSI 113c. Advanced Accounting (4)
A study of advanced accounting theory and practice which includes accounting for inter-corporate investments, partnerships, foreign currency transactions, government and nonprofit organizations and current topics. *Prerequisites: BUSI 113b with a "C" or better; junior standing.*

BUSI 115. Tax Accounting (4)
The study of federal tax laws and doctrines that significantly affect businesses, property transactions, and individuals. Tax planning techniques and tax research skills are emphasized. *Prerequisites: BUSI 31 and 33 with a "C" or better; junior standing.*

BUSI 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, and the behavioral implications of management accounting systems. *Prerequisites: BUSI 31 and 33 with a "C" or better; MATH 37; junior standing.*

BUSI 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: BUSI 113a with a "C" or better; junior standing.*

BUSI 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: BUSI 105 with a "C" or better; junior standing.*

BUSI 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: BUSI 105 and 121 with a "C" or better; junior standing.*

BUSI 124. Entrepreneurial Finance (4)
Entrepreneurial Finance discusses the financial issues facing a business start-up and those of a growing enterprise. Specific attention is paid to the acquisition of financing for new ventures, financial management of new and growing businesses, and the harvest of the entrepreneurial venture. *Prerequisites: BUSI 105 with a "C" or better; junior standing.*

BUSI 125. Intermediate Financial Management (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: BUSI 105 with a "C" or better; junior standing.*

BUSI 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: BUSI 105 and 121 with a "C" or better; junior standing.*

BUSI 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: BUSI 53 with a "C" or better; junior standing.*

BUSI 128. Real Estate Valuation and Investment (4)
An analysis of real estate valuation techniques and investment decisions, including the market, tax and financial environments within which real estate decisions are made. Risk and return characteristics of income-producing properties and the contribution of real estate to the investment portfolio are examined. The discounted cash flow model for valuation and investment decisions is emphasized. *Prerequisites: BUSI 105 with a "C" or better; junior standing.*

BUSI 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: BUSI 105 with a "C" or better, junior standing.*

BUSI 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 consequences. It also focuses on providing tools for managing conflict productively, emphasizing negotiation in particular. *Prerequisites: BUSI 109 with a "C" or better; junior standing.*

BUSI 136. Business Programming (4)
Introduction to programming logic and design. Visual Basic is used to emphasize the development of business applications. Introduction to Windows design elements, forms, and events. *Prerequisite: junior standing.*

BUSI 137. Database Management Systems (4)
Development of database management systems to design and build business applications. The course teaches database design (normalization), queries (SQL), development of business applications using forms and reports, and an introduction to database administration. *Prerequisites: BUSI 136 with a "C" or better; or permission of the instructor; junior standing.*

BUSI 138. Networking and Telecommunications Management (4)
Design, implementation, and management of local area networks. Design issues in wide area networks and telecommunications with emphasis on Internet connectivity. Network server setup and administration, including Web site administration. *Prerequisites: BUSI 100 or permission of the instructor; junior standing.*

BUSI 139. Electronic Commerce Project (4)
Designing and building applications for electronic commerce. Uses databases and programming to build interactive Web sites. *Prerequisites: BUSI 136, 137, 138 with a "C" or better or permission of the instructor; junior standing.*

BUSI 140. Business Systems Analysis (4)
Systems development life cycle; methods and tools for systems analysis and design; human factors, user interface, and systems integration issues. *Prerequisites: BUSI 136 with a "C" or better or permission of the instructor; junior standing.*

BUSI 141. Marketing Research (4)
A study of the concepts and techniques useful in the solution of marketing problems and in the identification of marketing opportunities. Emphasis is given to the design of information acquisition and to the evaluation and interpretation of research findings. *Prerequisites: BUSI 107 and MATH 37 with a "C" or better; junior standing.*

BUSI 143. Product Innovation (4)
Maintaining competitiveness in the contemporary marketplace requires that companies focus increasingly on the management of product and service innovation. This course will address the innovation process - technology-based and otherwise - from the identification of new ideas through the development of innovations and eventual introduction of novel products to consumers. Topics which will be addressed include sources of innovation, identification and screening of product innovations, business planning for new products, technological forecasting, integrating innovation with business objectives and organizational models for fostering innovation. *Prerequisites: BUSI 107 with a "C" or better; junior standing.*

BUSI 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: BUSI 107 with a "C" or better; junior standing.*

BUSI 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: BUSI 107 with a "C" or better; junior standing.*

BUSI 149. Strategic Marketing (4)
Students will be introduced to the strategic marketing process, including the analysis of marketing situations, identification of problems, determination of solutions, implementation of corrective action, and planning strategy. *Prerequisites: BUSI 105 and 107 with a "C" or better; junior standing.*

BUSI 153. Labor-Management Relations (4)
A study of labor movements and their impact on organizations and the economy. *Prerequisites: ECON 53, 55; junior standing.*

BUSI 157. Commercial Law (4)
Basic principles of commercial and trade law; business organizations including agency partnerships and corporations; contracts and the

Uniform Commercial Code, real and personal property; securities regulation, secured transactions; bankruptcy; professional liability and negotiable instruments. *Prerequisites: BUSI 53 with a "C" or better; junior standing.*

BUSI 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: BUSI 53 with a "C" or better; junior standing.*

BUSI 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: BUSI 105 with a "C" or better; junior standing.*

BUSI 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. *Prerequisites: BUSI 107 with a "C" or better; junior standing.*

BUSI 167. International Business Law (4)
This course will provide students with the opportunity to study international sales and commercial transactions, international and domestic laws which directly affect global trade and events which affect international trade such as environmental standards, privatization and intellectual property protection. The emphasis of the course will be on the recognition of legal problems and the discovery and application of appropriate principles of international and domestic law which may assist in the resolution of these problems. *Prerequisites: BUSI 53 with a "C" or better; junior standing.*

BUSI 169. Comparative Management (4)
Develops cross-cultural awareness through understanding of social, political, economic, and historical influences on managerial practice. Methods used include lectures, readings, videos, role-plays, and reports (written and oral). *Prerequisites: BUSI 109 with a "C" or better; junior standing.*

BUSI 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: BUSI 109 with a "C" or better (may be taken concurrently); or junior standing.*

BUSI 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: BUSI 31, 33, 107 with a "C" or better; junior standing.*

BUSI 175. Leadership and 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: BUSI 109 with a "C" or better, or junior standing in psychology or sociology.*

BUSI 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, 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: BUSI 31, 109 with a "C" or better; junior standing.*

BUSI 181. Strategic Management and Policy (4)
An integrated analysis of the major functional areas of an enterprise, viewed primarily from the upper levels of management. The strategic management process provides the framework for formulating and implementing objectives, policies and programs, through which a company gains sustainable competencies and competitive advantage in then marketplace. Students will participate in computer simulations, case analyses, and experiential exercises in order to develop skills in executive teamwork, solving strategic problems and presenting and defending recommendations. *Prerequisites: BUSI 31, 33, 53, 100, 104, 105, 107, 109.*

BUSI 183. Administrative Internship (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 16 to 20 hours a week for one semester. Interested students should contact the ESB Career Services Office or the ESB Associate Dean for Student Affairs.

BUSI 186. Firm, Markets, and Environment: Theory and Application (3)
This course is designed to provide in-depth exposure to both the theory of the firm and a set of quantitative techniques that managers need to utilize in order to facilitate decision making and problem solving. The topics covered include demand theory and estimation, forecasting with econometric and time-series techniques, production and cost theory, theory of markets, capital budgeting, fiscal and monetary policy, and the global economic and financial environment. *Prerequisites: senior standing; ECON 53, 55 and permission of the MBA Program Director.*

BUSI 188. Data and Decisions (3)
This course introduces the fundamental concepts and techniques for analyzing risk and formulating sound decisions in uncertain environments. The course examines statistical methods for interpreting and analyzing data including sampling concepts, regression analysis, and hypothesis testing. Applications include investor management, portfolio analysis, quality control and inventory management. This course emphasizes analytical techniques that are broadly applicable to business problems. *Prerequisites: senior standing; MATH 37, 45 and permission of the MBA Program Director.*

BUSI 191. Independent Study (2-4)
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 ESB Academic Standards Committee. Independent study is to be construed as self-directed study by the student.

BUSI 193. Special Topics (4)
Special topic courses offered by the School of Business 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.

MBA Courses

(see www.pacific.edu/mba for course descriptions)

BUSI 200	Management Information Systems	(3)
BUSI 201	Financial Accounting	(3)
BUSI 202	Managerial Accounting	(3)
BUSI 203	Legal and Ethical Environment of Business	(3)
BUSI 204	Operations Management	(3)
BUSI 205	Financial Management	(3)
BUSI 206	Firm, Markets and Environment:Theory and Application	(3)
BUSI 207	Marketing Management	(3)
BUSI 208	Data & Decisions	(3)
BUSI 209	Organizational Behavior	(3)
BUSI 210	Business and Public Policy	(3)
BUSI 211	MBA Career Development Seminar	(1)
BUSI 220	Corporate Finance	(3)
BUSI 221	Entrepreneurial Finance	(3)
BUSI 223	Investment and Portfolio Analysis	(3)
BUSI 229	Real Estate Finance and Investments	(3)
BUSI 230	Enterprise Systems Analysis	(3)
BUSI 231	Database Management	(3)
BUSI 236	Business Programming	(3)
BUSI 238	Computer Networking and Telecommunications Management	(3)
BUSI 239	MIS Project	(3)
BUSI 241	Marketing Research	(3)
BUSI 242	E-Commerce Marketing	(3)
BUSI 245	Consumer Relationship Management	(3)
BUSI 247	Customer Behavior	(3)
BUSI 249	Strategic Marketing	(3)
BUSI 253	Industrial Relations	(3)
BUSI 259	Employment Law	(3)
BUSI 263	International Finance	(3)
BUSI 265	Global Marketing Strategy	(3)
BUSI 267	International Business Law	(3)
BUSI 268	Global Business Competition	(3)
BUSI 269	Comparative Management	(3)
BUSI 270	Human Resource Management	(3)
BUSI 272	Entrepreneurship	(3)
BUSI 273	Organizational Analysis and Design	(3)
BUSI 274	Managing Quality and Productivity	(3)
BUSI 275	Technology and Innovation	(3)
BUSI 279	Leadership and Change	(3)
BUSI 281	Strategic Management	(3)
BUSI 282	Entrepreneurial Rapid Growth Strategy	(3)
BUSI 291	Independent Study	(1-3)
BUSI 293	Special Topics	(1-4)

Eberhardt School of Business Faculty

Charles Williams, 2006, Dean, Professor, B.S., Valparaiso University, 1981; M.B.A., Michigan State University, 1986; Ph.D., 1990.

Thomas E. Brierton, 1989, Associate Professor, B.B.A., 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.

Michael L. Canniff, 2003, Lecturer, B.A., University of Minnesota, 1985; M.S., Syracuse University, 1990.

Lucien J. Dhooge, 1996, Associate Professor, B.A., University of Colorado, 1980; J.D., University of Denver College of Law, 1983; LL.M., Georgetown University Law Center, 1995.

Cynthia Eakin, 1996, Associate Professor, B.S., Florida State University, 1986; M.A., 1988; Ph.D., 1993.

Joel Herche, 1994, Associate Professor, B.A., Central Washington University, 1979; M.B.A., Golden Gate University, 1986; Ph.D., University of Oregon, 1989.

Ronald Hoverstad, 1990, Associate Dean for MBA Programs, Associate Professor, B.A., Augsburg College, 1974; M.B.A., St. Cloud State University, 1981; Ph.D., University of Minnesota, 1986.

Hsinchih Huang, 1998, Associate Professor, B.S., National Chiao-Tung University (Taiwan), 1986; M.B.A., Rochester Institute of Technology, 1990; Ph.D., University of North Texas, 1996.

Benjamas Jirasakuldech, Business, 2002, Assistant Professor, B.S. Assumption University, 1992; MSc., Texas Tech University, 1995; Ph.D., University of Nebraska-Lincoln, 2001.

Sacha M. Joseph, 2006, Assistant Professor, B.A., University of the West Indies (Jamaica), 1998; M.S., Florida State University, 2004; Ph.D., Florida State University, 2006.

John R. Knight, 1995, Professor, B.A., Tulane University, 1969; M.B.A., Louisiana State University, 1978; Ph.D., 1990.

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, Professor, B.A., University of Southern California, 1977; M.A., Indiana University, 1981; Ph.D., Purdue University, 1986.

Jeffrey A. Miles, 1996, Associate Professor, B.A., Ohio State University, 1984; M.P.S., Cornell University, 1986; M.L.H.R., Ohio State University, 1992; Ph.D., 1993.

Stefanie E. Naumann, 1999, Associate Professor, B.S., Tulane University, 1993; Ph.D., Louisiana State, 1998.

Newman S. Peery, Jr., 1982, Professor, B.A., University of New Mexico, 1962; M.B.A., 1969; Ph.D., University of Washington, 1974.

John F. Pfaff, 2001, Professor, B.A., Brown University, 1966; M.B.A., New York University, 1972; Ph.D., University of Washington, 1976.

Gerald V. Post, 1999, Professor, B.A., University of Wisconsin-Eau Claire, 1978; Ph.D., Iowa State University, 1983.

Willard T. Price, 1980, Professor, B.S., University of California, Berkeley, 1961; M.P.W.A., University of Pittsburgh, 1969; Ph.D., 1973.

Sean M. Snaith, 2004, Director Business Forecasting Center, Associate Professor, B.S., Allegheny College, 1989; M.A., Pennsylvania State University, 1994; Ph.D., 1996.

Ray Sylvester, 1972, Associate Dean, Professor, B.A. Gettysburg College, 1962; M.B.A., University of Michigan, 1963; Ph.D., 1972.

Dara M. Szyliowicz, 2006, Assistant Professor, B.A., Columbia University, 1988; M.A., University of California, Berkeley, 1990; Ph.D., University of Illinois, 1998.

Eric W. Typpo, 1998, Associate Professor, B.S., University of Missouri, 1986; M.A., 1990; Ph.D., Florida State University, 1994.

Richard J. Vargo, 1981, Professor, B.S., Marietta College, 1963; M.B.A., Ohio University, 1965; Ph.D., University of Washington, 1969.

R. Daniel Wadhwani, 2006, Assistant Professor, B.A., Yale University, 1991; Ph.D., University of Pennsylvania, 2003.

Cynthia K. Wagner Weick, 1990, Professor, B.S., Ohio State University, 1979; M.S., 1980; Ph.D., University of Pennsylvania, 1986.

Suzanne B. Walchli, 2000, Assistant Professor, B.A., Duke University, 1975; M.B.A., Wharton Graduate Division, University of Pennsylvania, 1978; Ph.D., Northwestern University, 1996.

Stephen W. Wheeler, 1994, Professor, B.A., California State University, Sacramento, 1976; M.S., 1982; Ph.D., Arizona State University, 1988.

gladys l. benerd school of education

Dean
Lynn G. Beck

School Telephone
209.946.2556

Website
www.pacific.edu/education

Contents

Single Subject Credentials are offered in conjunction with other University academic units.

A professional school of University of the Pacific offering programs for Bachelor of Arts, Master's, Educational Specialist, Doctor of Education, and Doctor of Philosophy degrees.

Mission

The mission of the Gladys L. Benerd School of Education is to prepare thoughtful, reflective, caring, and collaborative professionals for service to diverse populations. The School of Education directs its efforts toward researching the present and future needs of schools and the community, fostering intellectual and ethical growth, and developing compassion and collegiality through personalized learning experiences. Undergraduate, graduate degree, and professional preparation programs are developed in accordance with state and national accreditation standards and guidelines to ensure that students completing these programs will represent the best professional practice in their positions of future leadership in schools and the community.

Core Values of the School of Education

The core values of the School of Education include scholarship, integrity and ethical conduct, diversity, social and community responsibility, collegiality, and teaching and learning.

The History of the School 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, secondary, and post-secondary schools; 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 schools; and to engage in and promote research leading to better public education.

Accreditation

The University of the Pacific was the first university in California whose professional education programs were fully approved by both the California Commission on Teacher Credentialing (CCTC) and the National Council for Accreditation of Teacher Education (NCATE) from bachelor's through doctoral levels, thus permitting its professional education program graduates to be licensed upon request in 38 other states. Although teacher education is considered to be an all-University responsibility, all professional education degree and credential programs at University of the Pacific are offered and coordinated through the Gladys L. Benerd School of Education. Continuing accreditation has been conferred through the year 2010 on all eligible programs in the Benerd School of Education.

Programs in the School of Education

At the undergraduate level, programs are offered to prepare classroom teachers. At the graduate level, programs are offered to prepare instructional specialists, school psychologists, supervisors, principals, superintendents, central office personnel, and leaders in higher education, non-profit, and other organizations. Undergraduate and graduate programs through the doctorate for teachers and other curriculum and instruction personnel are offered by the Department of Curriculum and Instruction. Graduate programs through the doctorate for educational administrators are offered by the Department of Educational Administration and Leadership. Graduate programs through the doctorate for school psychologists are offered by the Department of Educational and School Psychology. Detailed requirements for a Master of Education (M.Ed.), Master of Arts in Education (M.A.), Educational Specialist (Ed.S.), Doctor of Education (Ed.D.), and Doctor of Philosophy (Ph.D.) can be found in the Graduate School Catalog.

Student Organizations

Student organizations in the School of Education include the School of Education Student Association (SESA); a student chapter of the Association for Supervision and Curriculum Development; a student chapter of the Council for Exceptional Children (CEC); a student chap-

ter of Phi Delta Kappa (PDK); and the Music Education Student Association (MESA).

Presidents of these associations serve as officers of the School of Education Student Association (SESA). The SESA Board of Directors is composed of a president, a vice president, a secretary, a treasurer, a commissioner of publicity, and two representatives to the Associated Students of University of the Pacific (ASUOP) Senate. These commissioners meet in open meetings to discuss proposals and plan activities for the benefit of students in the School of Education. Through participation in the organization, students gain insights into the profession of teaching and the importance of their involvement in decision-making.

Membership in these student organizations 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 ASUOP student body fees.

Facilities and Support Services

The School of Education has a state-of-the art Macintosh Computer Laboratory, and the University Library contains other comprehensive resources for students in education in its collections of books, professional periodicals, pamphlets, microfilms, and other reference materials.

The University Audiovisual Services Center has films, recordings, tapes, and other appropriate materials and the equipment for their use. Videotape cameras and projection equipment can be used to enable students in professional education programs to see themselves in action as student teachers and to receive personal and individual assistance from their University supervisors.

The Testing Office in the School of Education is an officially designated national testing center for the subject test of the Graduate Record Examination and the Miller Analogies Test. In addition, the Office maintains a collection of restricted psychological assessments for use by faculty and approved advanced students in the school psychology program.

The Speech, Hearing and Language Center in the School of Pharmacy and Health Sciences provides a program for children and adults who need individual or group therapy for such challenges 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.

Earning a Credential to Teach

The School of Education provides programs whereby any student in any unit of the Stockton campus can prepare for a teaching career. The School 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 School insists that students meet qualitative criteria. They must be strong academically, respect and relate well to children and other 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 achieving excellence in teaching.

So that students can assess themselves, their relationships with children, and their willingness to commit to excellence in teacher preparation, any freshman or higher level student may enroll in the sequence of prerequisite courses prior to the professional course sequence and directed teaching. The first two courses are CURR 105x, Introduction to Education (3 units) and CURR 134x, Educational Computing (2 units). Next in the sequence is EPSY 121x, Learner-Centered Concerns (3 units), followed by CURR 130x, Teaching and Assessment (3 units), and CURR 137x, Teaching English Learners (2 units). Because of local school district's requirements for volunteers to participate in classrooms, students must complete fingerprint clearance, normally by going to the San Joaquin County Office of Education to use the Livescan fingerprint equipment, and obtain tuberculosis test results from their doctor or the university's Health Center. There are fees for these clearances. Most of the courses in the teacher preparation program require hours of fieldwork in addition to class meetings and outside homework assignments. The CBEST exam in reading, writing, and mathematics must be taken prior to the professional course sequence.

Before students are allowed to enroll in professional courses, they must prepare materials for Advancement to the Teacher Education program (Credential Candidacy). Students must open a credential file and pay a $30 fee at the Office of the Credential Analyst. Materials for Advancement to the Teacher Education program are available in the Office of the Credential Analyst (Benerd School of Education, Room 108). The CBEST Examination must be taken, and evidence of registration to take or score reports for the state required subject matter examinations or progress on an approved subject matter "waiver" program is required.

In addition to those students who are candidates for a degree or credential, other students may wish to consider specialized courses in the School of Education, such as multicultural education, ESL courses, literacy development, and instructional approaches for working with children who have learning disabilities or severe disabilities.

The University committee, Council on Teacher Education (CTE) has members broadly representative of teacher preparation areas within the College of the Pacific, the Conservatory of Music, and the Benerd School of Education. Two students also participate as members of the Council. This group assists with reviewing teacher preparation policies and program development. The group promotes coordination and cooperation within the University and advises the Dean and faculty of the Benerd School of Education concerning programs, activities, and assessment of the teacher education programs.

The Department of Curriculum and Instruction offers the Senate Bill 2042 (hereafter SB 2042) Multiple Subject Preliminary Credential and Diversified/Liberal Studies major. The Teacher Education Program also offers a program of teacher preparation for the Single Subject Preliminary Credential to respond to Senate Bill 2042 standards. Also, the Department of Curriculum and Instruction provides the Education Specialist, Level One Mild/Moderate Disabilities and the Moderate/Severe Disabilities, Credential programs for undergraduate or graduate students.

The Ryan Act credential programs for the Multiple and Single Subject preliminary and clear professional credentials were phased out by December 31, 2005 to respond to Senate Bill 2042 legislation.

Prerequisite courses to be taken by students interested in all three credential areas include CURR 105x, Introduction to Education (3 units), EPSY 121x, Learner-Centered Concerns (3 units), CURR 134x, Educational Computing (2 units), CURR 130x, Teaching and Assessment (3 units), and CURR 137x, Teaching English Learners (2 units). These courses are open to freshman or higher-level students who identify themselves to a teacher education adviser in the Benerd School of Education, College of the Pacific, or the Conservatory of Music. Fingerprint and TB test clearances are required for registration. These Multiple, Single Subject, or Education Specialist credential program advisers will assist the student in planning a sequence of courses for the approved subject matter programs, state examinations for subject matter competency required for the multiple and single subject credentials, and prerequisite

and required teacher preparation courses and requirements for the preliminary credential as well as major, general education, and other degree requirements for the student's degree and professional objectives. The CSET-Multiple Subject examinations are now required to be passed prior to enrolling in Directed Teaching in the Multiple Subject program. Single Subject Credential students may also consult with the Department of Curriculum and Instruction about teacher preparation program requirements while working with a Single Subject adviser for information on courses required for the subject matter program for the particular content area or for information on state-approved single subject exams for demonstrating subject matter knowledge (e.g. CSET examinations).

Students must make formal application to be admitted to the Teacher Education credential programs ("Credential Candidacy") to take professional teaching methods and curriculum courses and directed teaching. Normally, students complete or are enrolled in prerequisite courses prior to Advancement to Teacher Education (Credential Candidacy). Application materials are available in the Office of the Credential Analyst (Benerd School of Education, Room 108). Students must have taken the CBEST examination and submit their scores, completed prerequisite courses or be enrolled in these courses, submit information about their progress in completing either a state approved subject matter program or in taking state approved subject matter examinations, and demonstrate the required GPA requirements (currently a 2.5 GPA or higher in the major, overall cumulative GPA of 2.5, and a GPA of 2.5 in the prerequisite teacher education courses, with no grade lower than a "C" (2.0) in any teacher education courses, or GPA's of 3.0 for the Master of Education program). Multiple subject candidates must pass CSET-Multiple Subjects examinations prior to enrolling in Directed Teaching. The student needs to submit a minimum of three recommendations from faculty and individuals who know first-hand of the student's knowledge, skills, and dispositions that indicate positive potential for success in teaching as well as an essay in response to program questions, and a State of California application for the Certificate of Clearance, which requires fingerprinting and a state application for the Certificate of Clearance. As the SB 2042 program is implemented, a teacher education portfolio will be presented with materials required for Advancement to Teacher Education (Credential Candidacy) review. The portfolio will be started in CURR 105x, Introduction to Education, and materials will be added to the portfolio throughout the Teacher Education credential program. Plans are for this portfolio to be "electronic" and maintained on a server or in any other appropriate storage format. Other materials needed to apply for candidacy and admission to Teacher Education will be identified and information will be available to students pending approval of the SB 2042 programs. A fee of $30 is required to "open a credential file" and to begin the application for Advancement to Teacher Education ("Credential Candidacy").

Teacher Preparation Programs Available at Pacific

The credentials or licenses for teaching in California schools offered by the University include the Multiple Subject Credential, the Single Subject Credential, and the Educational Specialist Credentials, Mild/Moderate Disabilities or Moderate/Severe Disabilities, Level One and Level Two. The University, as of July 1, 2005 has approval for subject matter programs for the SB 2042 Multiple Subject Credential (the Diversified-Liberal Studies Major in the Benerd School of Education). Single Subject credentials will require passage of appropriate CSET examinations. Selected programs for subject matter competence approved by CCTC may become available to students. Undergraduates may earn a Multiple or Single Subject Preliminary Credential or a Level One Education Specialist Credential concurrently with a four year degree program if they decide early in their first or second years and plan carefully with an adviser. Students will need to take full loads of 16-18 units per semester, and complete one major. There is a Master of Education option for students who wish to extend credential preparation into graduate coursework. The Pacific Four Year Guarantee applies to the B. A. degree program only, not including the preliminary credential, and is available only to students who enter the University as freshman.

The Multiple and Single Subject Teacher Preparation programs are approved for meeting AB 1059 (Ducheny Bill), Teaching English Learners, so that candidates prepare for teaching English Language Learners.

The Single Subject Credential authorizes its holder to teach that subject at any level between kindergarten and grade 12, though it is used typically in grades 7-12. The Multiple Subject Credential authorizes its holder to teach in any classroom in which the students remain with the teacher. The Multiple Subject Credential is required for teaching grades K through 6. Some districts require a Single Subject Credential for teaching one subject field in middle school or junior high school. The Multiple Subject Credential may be used for teaching upper grades in which students remain with the teacher in a self-contained classroom and for adult education.

The Mild/Moderate and Moderate/Severe Disabilities Credentials, Level One, are initial Education Specialist credentials. The Department provides an undergraduate degree and Education Specialist program which sequences major and degree requirements and teacher preparation courses for the Education Specialist credential over four years. There are Master of Education or Master of Arts degree options for students who continue graduate study after the bachelor's degree. Holders of a Level One credential must complete a Level Two credential program in graduate study. These credentials allow the holder to provide specialized teaching and assessment for students with exceptional needs, grades K-12.

Internships

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 student teaching. Students typically seek internships from Stockton-area districts and candidates consult with the Director of Field Experience in the Office of Student Teaching and Internships. Students must be approved by the teacher education program in order to seek an internship with a cooperating district. Internships should be within a 50-mile radius of the campus.

Interns are paid employees of a school district for a full school year. Placement in an internship through Pacific will only be made for candidates who complete a minimum of 9 units of professional coursework in the School of Education at Pacific (which must include CURR 131X, CURR 132X and 133X or CURR 179X and CURR 175) prior to accepting an internship with a school district. All requirements for a preliminary credential must be completed before accepting an internship, and a GPA of 3.0 in professional education course work must be maintained. Exceptions must be approved by the Chair of the Department of Curriculum and Instruction upon recommendation of the Director of Field Experiences, who administers student teaching and internships. Once an approved internship has been arranged, candidates apply for a California Internship Credential in the School of Education Credentials Office. A memorandum of understanding and a teaching contract are also required between the district and Pacific's teacher education program.

Requirements for a Teaching Credential

There are five major requirements for any teaching credential. One is the acquisition of a baccalaureate degree. The University of the Pacific's colleges and schools offer a qualifying degree. A second requirement is the successful completion of an approved program of professional teacher education preparation, successful attainment of GPA and grade requirements, approval of thirteen Teaching Performance Expectations, and passage of state designated Assessments, as well as Pacific's program assessments, such as passage of a program portfolio. A third requirement is the completion of evidence of knowing the subject matter knowledge for the credentials sought, by either successfully completing a CCTC approved subject matter program or by passing CCTC/state approved subject matter examination(s) in the teaching field. The CSET- Multiple Subjects examination will be required for the Multiple Subject Preliminary Credential as of July 1. 2004 and the CSET for Single Subject credentialing will be required for new students in Fall 2006. Prospective Single Subject Credential students can receive information on requirements for demonstration of subject matter knowledge from the Department of Curriculum and Instruction. A fourth requirement is a passing score on the California Basic Educational Skills Test (CBEST), which must be taken before full admission or Advancement to Teacher Education ("credential candidacy"). The fifth requirement is the completion of coursework or passing an approved examination on the Constitution of the United States. At the University, students must pass one of the following courses from the Department of Political Science, POLS 41 (U. S. Government and Politics) or from the Department of History, both HIST 20, United States History I and HIST 21, United States History II, to fulfill this state requirement. The Department of Political Science provides a challenge examination for this requirement. A fee is required. A sixth requirement for Multiple Subject and Education Specialist credentials is passing the state's Reading Instruction Competency Assessment (RICA) examination.

For all teacher education programs, no more than three years may pass between completion of the last professional, methods course and placement into Directed Teaching. The Department reserves this right to expect candidates to have current knowledge and skills prior to placement into Directed Teaching. The Department will review records and petition information from the individual about relevant teaching and educational work that he or she may have engaged in if more than three years have passed since leaving the credential program. The Department may require the individual to repeat Methods courses, take new courses or complete new course or credential program requirements, and the individual is subject to tuition for these courses. The individual will also be required to fulfill any new state and federal course or credential requirements that may have come into effect since he or she left the credential program.

Candidates who do not maintain GPA requirements and grade requirements for teacher preparation courses, do not have fingerprint clearances, or do not successfully complete program and Directed Teaching requirements can no longer continue in the teacher preparation or educational specialist credential programs.

(N.B. This Catalog may not be current with changes that occur at the state and federal levels that affect teacher preparation. Requirements are subject to change during the academic year. Consult the Credential Analyst and the Chair of the Department of Curriculum and Instruction for current changes in credentialing.)

Professional Preparation

Ryan Act Credentials:

The Ryan Act Multiple Subject and Single Subject Preliminary Credentials were required to be completed by December 31, 2005. The Ryan Act Credential Programs were terminated by State legislation.

Senate Bill 2042 Credentials and Education Specialist Credentials:

Multiple Subject and Single Subject Credentials:

The Teacher Education Program in the Department of Curriculum and Instruction offers programs of teacher preparation for the Multiple Subject and Single Subject Preliminary Credentials to respond to Senate Bill 2042 standards.

Educational Specialist Credentials, Level One:

The Department of Curriculum and Instruction offers the Education Specialist, Mild/Moderate Disabilities and Moderate/Severe Disabilities, Level One, Credential programs for undergraduate students. Students may complete either a Diversified-Liberal Studies major (formerly, the approved subject matter program) or a CCTC approved Subject Matter program for a Single Subject content field or the appropriate CSET examinations. The options for subject matter knowledge may be subject to change by the state. The Department encourages students interested in the Education Specialist credential for Special Education teaching to be enrolled in the Department's Diversified-Liberal Studies major, though other Single Subject programs for subject matter preparation are appropriate.

Prerequisite Courses:

Prerequisite courses to be taken by students interested in all three credential areas include:

CURR 105x	Introduction to Education	3 units
EPSY 121x	Learner-Centered Concerns	3 units
CURR 134x	Educational Computing	2 units
CURR 130x	Teaching and Assessment and	3 units
CURR 137x	Teaching English Learners	2 units

These courses are open to undergraduates who identify themselves to a teacher education adviser in the Benerd School of Education, College of the Pacific, or the Conservatory of Music. Fingerprint and TB test clearances are required for registration. These Multiple or Single Subject credential and Education Specialist Credential program advisers will assist the student in planning a sequence of courses for an approved subject matter program or for state examinations for subject matter competency, and prerequisite and required teacher preparation courses and requirements for the preliminary credential as well as major, general education, and other degree requirements for the student's degree and professional objectives. Single Subject Credential students may also consult with the Department of Curriculum and Instruction about teacher preparation program requirements while working with a Single Subject adviser for information on courses required for the subject matter program or CSET examinations for the particular content area.

Advancement to Teacher Education (Credential Candidacy) for Multiple Subject, Single Subject and/or Education Specialist Students:

Before taking further professional courses in the Multiple Subject, Single Subject, and/or Education Specialist Teacher Education Programs, the student must complete admission with Advancement to Teacher Education ("Credential Candidacy"). To apply for Advancement to Teacher Education, the student, a second semester sophomore or higher, obtains application materials from the Credential Analyst in the Benerd School of Education. Forms in the application materials include information about the fingerprint review and application for the State Certificate of Clearance, the submission of CBEST test results, GPA requirements of 2.5, cumulative, in the subject

matter program, and in prerequisite teacher education courses, three recommendations, a teacher education essay, and required materials in an electronic Teacher Education program portfolio. No grade in a teacher education course may be below a "C" or 2.0. Students must provide a subject matter form that is reviewed and approved by their Diversified Major adviser in the Benerd School of Education or from the Single Subject adviser for a CCTC approved subject matter preparation program in the College of the Pacific or the

Conservatory of Music. Undergraduates and graduate students may also present evidence of enrollment to take, of having taken, or of completion of CCTC/state approved subject matter examination(s) if they are not completing an approved subject matter program of coursework. Students in the Multiple Subject Preliminary Credential Program need to present evidence of registration to take, plans for taking, or receive their score report for the state-approved examination (CSET-Multiple Subjects).

When all required forms and reports on testing requirements are on file, the Credential Analyst or designee will arrange an interview for the applicant with a faculty panel of the Admission to the Teacher Education Program ("Credential Candidacy") Committee. Students may be required to bring materials from the Teacher Education Electronic Portfolio for the panel to review. The panel will interview the applicant and review materials and progress in coursework in order to determine if the applicant meets criteria for further teacher education coursework. Those students who have not passed the CBEST or have not made appropriate progress on other criteria, including subject matter preparation and portfolio materials, may be deferred and asked to provide additional evidence of work to improve their test scores or their portfolio materials. Students may also be denied approval for Admission to Teacher Education when key criteria are not met, the student's interview is not satisfactory, and/or recommendations for teacher education are not supportive of the applicant.

Students who are approved for Admission to Teacher Education can then register for professional courses in the Teacher Education Program. Admission to Teacher Education ("Credential Candidacy") will be suspended or revoked if later GPA's such as the cumulative GPA, grades and GPA in teacher education courses, and the student's subject matter program coursework fall below a minimum of 2.5. Graduate students or students interested in post-bachelor's degree internships must maintain a GPA of 3.0 in teacher preparation courses. Master of Education degree students must also maintain a 3.0 cumulative GPA.

Professional Teacher Preparation Courses—Multiple Subject

Professional Teacher Preparation Courses for the SB 2042 Multiple Subject Preliminary Teaching Credential include the following courses:

CURR 131x	Teaching Social Studies	2 units
CURR 132x	Teaching Science	2 units
CURR 133x	Teaching Mathematics	2 units
CURR 135x	Teaching Reading and Language Arts	3 units
CURR 136x	Literacy Assessment	2 units

Directed Teaching: The Multiple Subject Preliminary Credential

Prior admission to Directed Teaching, students must attend a meeting that the Director of Field Experiences holds to inform students about application procedures for student teaching or internship placements (STAR review). Material from the electronic portfolio may also be reviewed. GPA requirements and minimum grade requirements in teacher preparation courses are reviewed and must be met. The CBEST examination must be passed and subject matter requirements for the credential must be met. Students will not be allowed to register for Directed Teaching if the CBEST and subject matter requirements, either the CCTC approved program for the Diversified-Liberal Studies Major completed successfully by June 30, 2004 or successful passage of the state-approved examination (CSET- Multiple Subjects), are not met.

Directed Teaching for a student teacher is normally a semester of full-time, full-days of teaching in local schools. Placements are made in public school districts in Stockton or neighboring communities within 25 miles of campus. Students teach full days and are engaged in student teaching activities and assessments for a sixteen-week period. Students must arrange their schedule and duties to be on site and in classes from approximately 7 am to 5:00 p.m. daily for the duration of student teaching. A student may be required to extend student teaching beyond sixteen weeks if additional time to meet standards and assessments is needed and an extension of time is warranted. The student may be required to pay additional tuition for extended time or a third placement. The Director of Field Experiences makes all placements. Prospective student teachers do not seek their own placements. Normally, Directed Teaching is not scheduled for summer sessions.

For an approved internship, students must have a bachelor's degree and meet higher GPA requirements in teacher education and demonstrate their potential for being a "teacher of record" and to be alone in a classroom to seek an internship and full-time teaching contract with a district in the immediate area of Stockton (normally within 50 miles of Stockton). A candidate must have completed CBEST, the United States Constitution requirement, the subject matter examinations (CSET), and appropriate teacher preparation coursework. The Director of Field Experiences provides information on internships, and the Director's approval and program approvals with interviews are needed for internship placements. Normally, the student is given approval to seek an internship with a cooperating district within 50 miles of Stockton. A teaching contract, proof that the placement is appropriate for the Multiple Subject Credential, a Memorandum of Understanding, and an application and recommendation for a University Internship Credential for the Multiple Subject Credential are needed for registration as an intern. Normally, an internship lasts during the academic year of the school district, and a student registers for units during two semesters, usually the Fall and Spring semesters.

The Director of Field Experiences provides information for any petitions for reducing the amount of time in student teaching or internship placements. Candidates must provide a written petition detailing their teaching experience and providing documentation of their experience from employers, as examples of some of the materials needed for such a petition. Normally, candidates must have been teaching over two years for a reduction in time of supervised Directed Teaching. The program must supervise individuals for a period of time and cannot waive Directed Teaching and the Directed Teaching Seminar, as the program has responsibility for approval of the Teaching Performance Expectations, the program's Assessments, and a program electronic portfolio, as examples, in making a decision to recommend a candidate for a SB 2042 Multiple Subject Credential.

The following courses are taken during the semester devoted to Directed Teaching:

SPED 125x	Teaching Exceptional Learners	2 units
CURR 158x or CURR 258	Directed Teaching: Multiple Subject	10 units
CURR 195x	Seminar: Directed Teaching	2 units

Passage of the Reading Instruction Competency Assessment (RICA) is required for a recommendation for a Multiple Subject Preliminary Credential. Candidates must successfully pass all program portfolio requirements in the electronic portfolio, including Directed Teaching require-

ments. Candidates must successfully complete all approvals of thirteen Teaching Performance Expectations and other program knowledge, skills, and dispositions, from their University Supervisor and their cooperating teacher(s) in their student teaching and/or internship placement(s), and successfully pass all program and state-required Assessments.

Candidates must apply for the SB 2042 Multiple Subject Preliminary Credential at the Office of the Credential Analyst. Candidates must complete all required information on State of California forms from the California Commission on Teacher Credentialing and pay state designated fees. All program requirements must be successfully completed and documented. All official transcripts must be presented.

Under SB 2042 legislation, the holder of a Multiple Subject Preliminary Credential must complete requirements for a Multiple Subject Clear Credential through a CCTC-approved Induction Program provided by a school district or some California colleges or universities. The district employing the teacher will provide a CCTC approved induction program through a Beginning Teacher Support and Assessment (BTSA) program, their own district induction program, or by directing new teachers to a CCTC approved university induction program if there is no induction program available for the new teacher at a school district, according to AB 2210. Normally, the induction program is two years. Upon successful completion of all standards and requirements for the induction program, the new teacher applies for the Profession Clear Multiple Subject Credential through the induction program, and that induction program recommends the teacher for the Professional Clear credential.

Note: The SB 2042 credentials do not currently require the addition of Cross-cultural Language and Academic Development (CLAD) certification. The approved SB 2042 Multiple Subject program includes factors previously included in the Ryan Act CLAD certificate programs. Also, the Department completed approval of Assembly Bill 1059, Teaching English Learners, Standard 13, review for the Multiple and Single Subject Credentials.

The SB 2042 Single Subject Preliminary Credential Program

The Department of Curriculum and Instruction offers a Senate Bill 2042 Single Subject Preliminary. The Ryan Act Credential program ceased statewide in December 2003, and any candidates must have completed the Preliminary Ryan Act credential by December 31, 2005.

The listing of courses for the SB 2042 Single Subject Credential program follows and was approved by the Commission on Teacher Credentialing:

Prerequisite courses:

CURR 105x	Introduction to Education	3 units
CURR 134x	Educational Computing	2 units
EPSY 121x	Learner-Centered Concerns	3 units
CURR 130x	Teaching and Assessment	3 units
CURR 137x	Teaching English Learners	2 units

Professional Teacher Education Courses for the Single Subject Credential

Admission to Teacher Education is required to register for professional teacher education courses. The description of Admission for Teacher Education (Credential Candidacy) for the Multiple Subject, Single Subject, and/or Education Specialist programs is provided in this Catalog. See the section on the SB 2042 Multiple Subject Credential.

Candidates for the Single Subject Preliminary Credential take the following courses:

CURR 175	Reading/Language Arts Development (Single Subject)	4 units
CURR 179x	Teaching in the Content Areas (Single Subject)	3 units

The Single Subject Program in Music Education provides methods courses in place of CURR 130x, Teaching and Assessment, and CURR 179x, Teaching in the Content Areas. The Physical Education program allows SPTS 159, Sports Pedagogy, to replace CURR 130x.

Directed Teaching: Single Subject

Prior admission to Directed Teaching, students must attend a meeting that the Director of Field Experiences holds to inform students about application procedures for student teaching or internship placements (STAR review). Material from the electronic portfolio may also be reviewed. GPA requirements and minimum grade requirements in teacher preparation courses are reviewed and must be met. The CBEST examination must be passed and subject matter requirements for the credential must be met. Students will not be allowed to register for Directed Teaching if the CBEST and subject matter requirements, either the CCTC approved program for a Single Subject–subject matter program with 100% completion of designated courses and with a GPA of 2.5 or higher or successful passage of the state approved examination(s) for the Single Subject credential, are not met.

Directed Teaching as a student teacher is normally a semester of full-time, full-days of teaching in local schools. Placements are made in public school districts in Stockton or neighboring communities within 25 miles of campus. Students teach full days and are engaged in student teaching activities and assessments for a sixteen-week period. Students must arrange their schedule and duties to be on site and in classes from approximately 7 am to 5:00 p.m. daily for the duration of student teaching. A student may be required to extend student teaching beyond sixteen weeks if additional time to meet standards and assessments is needed and an extension of time is warranted. The student may be required to pay additional tuition for extended time or a third placement. The Director of Field Experiences makes all placements in English, Art, Social Sciences, Sciences, Mathematics, and Spanish. Designated Subject Matter program advisors in Music Education and Physical Education make placements for students in Music and Physical Education. The Music Education Program adviser also designates the sequence of Directed Teaching for Music credential candidates. Prospective student teachers do not seek their own placements. Normally, Directed Teaching is not scheduled for summer sessions.

For an approved internship, students must have a bachelor's degree and meet higher GPA requirements in teacher education and demonstrate their potential for being a "teacher of record" and to be alone in a classroom to seek an internship and full-time teaching contract with a district in the immediate area of Stockton (normally within 50 miles of Stockton). A candidate must have completed CBEST, the United States Constitution requirement, the subject matter requirements and appropriate teacher preparation coursework. The Director of Field Experiences provides information on internships, and the Director's approval and program approvals with interviews are needed for internship placements. Normally, the student is given approval to seek an internship with a cooperating district within 50 miles of Stockton. A teaching contract, proof that the placement is appropriate for the Single Subject Credential, a Memorandum of Understanding, and an application and recommendation for a University Internship Credential for the Single Subject Credential are needed for registration as an intern. Normally, an internship lasts during the academic year of the school district, and a student registers for units during two semesters, usually the Fall and Spring Semesters. The Department of Music Education's chair assists students in the Single Subject Program in Music Education with internship placements. Some students in Music Education take a portion of Directed Teaching in Summer Session I by enrolling in Video-Micro Rehearsal.

The Director of Field Experiences provides information for any petitions for reducing the amount of time in student teaching or internship placements. Candidates must provide a written petition detailing teaching experience and providing documentation of their experience from employers, as examples of some of the materials needed for such a petition. Normally, candidates must have been teaching over two years for a reduction in time of supervised Directed Teaching. The program must supervise individuals for a period of time and cannot waive Directed Teaching and the Directed Teaching Seminar, as the program has responsibility for approval of the Teaching Performance Expectations, program and state Assessments, and a program electronic portfolio, as examples, in making a decision to recommend a candidate for a Single Subject Credential.

The following courses are taken during the semester devoted to Directed Teaching:

Directed Teaching

CURR 178/278	Directed Teaching: Single Subject	10 units
CURR 195x	Seminar: Directed Teaching	2 units
SPED 125x	Teaching Exceptional Learners	2 units

(N. B. These titles, units, and ordering of courses are subject to change and are approximations of the course listings and unit requirements. Changes at the state or federal level may not be current during the academic year of this Catalog).

Candidates must successfully pass all program portfolio requirements in the electronic portfolio, including Directed Teaching requirements. Candidates must successfully complete all approvals of thirteen Teaching Performance Expectations and other program knowledge, skills, and dispositions, from their University Supervisor and their cooperating teacher(s) in their student teaching and/or internship placement(s), and successfully pass all state-required Teaching Performance Assessments, including the fourth Teaching Performance Assessment, normally completed during Directed Teaching.

Candidates must apply for the SB 2042 Single Subject Preliminary Credential at the Office of the Credential Analyst. Candidates must complete all required information on State of California forms from the California Commission on Teacher Credentialing and pay state designated fees. All program requirements must be successfully completed and documented. All official transcripts must be presented.

Under SB 2042 legislation, the holder of a Single Subject Preliminary Credential must complete requirements for a Single Subject Clear Credential through a CCTC-approved Induction Program provided by a school district. The district employing the teacher will provide a CCTC approved induction program through a Beginning Teacher Support and Assessment (BTSA) program, their own district induction program, or by directing new teachers to a CCTC approved university induction program, if there is no induction program available for the new teacher at a school district according to AB2210 legislation. Normally, the induction program is two years. Upon successful completion of all standards and requirements for the induction program, the new teacher applies for the Profession Clear Single Subject Credential through the induction program, and that induction program recommends the teacher for the Professional Clear credential.

Note: The SB 2042 credentials do not currently require the addition of Cross-cultural Language and Academic Development (CLAD) certification. The approved SB 2042 Single Subject program includes factors previously included in the Ryan Act CLAD certificate programs. Also, the Department completed approval of Assembly Bill 1059, Teaching English Learners, Standard 13, review for the Multiple and Single Subject Credentials.

The Ryan Act Single Subject Preliminary and Professional Clear Credentials

University of the Pacific students who began the Ryan Act Single Subject Credential program must have completed the program by December 31, 2005. No new students were allowed to begin this program after September 1, 2003.

The Ryan Act Clear Credential and Requirements

Candidates who completed either a Ryan Act Single Subject or Multiple Subject Preliminary prior to December 31, 2005 must complete a postgraduate year of study, known as the Fifth-year Requirement. A Ryan Act Preliminary Credential is valid for five years, and the candidate must complete requirements and be recommended by an approved program, usually a University's program within the five-year period. Also, there is an option to clear a preliminary credential through successful completion of Beginning Teacher Support and Assessment (BTSA) requirements and three courses in Level II Technology, Health and CPR, and mainstreaming exceptional learners. Successful admission to the Graduate School of the University of the Pacific is required for completion of and a recommendation for the Clear Credential. A unit requirement must be fulfilled after the bachelor's degree, and three courses are currently required for the clear credential. Note that holders of a SB2042 credential *do not* complete these Ryan Act Fifth Year requirements.

Health Education and CPR certification:

Candidates must complete a course in Health Education (including alcohol and drug education and nutrition). Pacific will recognize such a course even if taken in a community college. Courses at Pacific that meet the requirement are SPTS 43, Health Education for Teachers, or EXTN 186, Health Education for Teachers (a course offered through the Center for Professional and Continuing Education). There is a mandatory requirement for CPR certification, infant, child, and adult, Level B or equivalency.

Mainstreaming of Students With Exceptional Needs:

The second course requires completion of an approved course for meeting specified special education knowledge and skills. The course offered at the University of the Pacific is SPED 123, The Exceptional Child (3 units).

Level Two Technology Course Requirement:

As of July 1, 2002, candidates for a Ryan Act Professional Clear Credential must successfully complete a Level Two Technology course. The course at Pacific that meets this requirement is CURR 165/265, Microcomputers and Curriculum Design (3 units).

Ryan Act Post-Bachelor's Degree Unit Requirement:

The School of Education will recommend a candidate for the Ryan Act clear credential when the above courses and CPR requirement have been met and the candidate has completed 26 postgraduate units at Pacific, with a minimum of 20 units taken at Pacific (or 30 elsewhere, not counting extension courses and including a minimum of 12 units successfully completed at the University of the Pacific). Candidates must have an approved program for the Professional Clear Credential in their file. The teacher candidate is asked to declare a fifth year plan at the conclusion of student teaching or internship. The declared program may be a master's degree in a field of education or in a teaching content field, any work on a basic or advanced credential or a certificate program, or a plan for courses to provide professional development in areas of need or interests. Candidates should obtain approval for courses taken at other universities. Normally, extension courses from other universities may not be used for the Professional Clear Credential, and courses must have program approval for meeting the unit requirement for a Clear Credential. Students may take up to six units from the University of the Pacific's Center for Professional and Continuing Education. Those units must be "extended credit" units, and not continuing education or professional development units. Candidates are urged to veri-

fy that extension courses from the University of the Pacific or elsewhere are approved in advance of taking them. They should contact the Credential Analyst or the Chair of the Department of Curriculum and Instruction about such consideration for approval of coursework.

Internship for SB2042 Credentials

Graduate students who have completed a bachelor's degree, satisfy 3.0 GPA requirements in professional education coursework, and can demonstrate sufficient classroom experience and maturity may be reviewed for an internship in a public school in the Stockton area, usually within 50 miles of campus. Students must have completed the United States Constitution requirement, the CBEST, and the subject matter requirement for the specific credential through successful completion of a CCTC approved subject matter program or passage of the state approved examination(s). Normally, all course and program requirements in professional teacher education are completed, except for Directed Teaching. The student must enroll in Directed Teaching each of the two semesters and the directed teaching seminar one semester. Group and individual meetings of interns continue over the two semesters of the internship. All competencies or standards must be met and all assessments must be completed and approved.

Single Subject candidates in the Music Education credential program who are approved for internship take a portion of the CURR 178/278 Directed Teaching course in Summer Session I, and continue with enrollment in both the Fall and Spring terms when they are employed by a cooperating public school district. The Chair of the Department of Music Education can provide information on requirements and sequencing of Directed Teaching.

Those graduate students interested in the potential of internship should contact the Director of Field Experiences to obtain information about the approval procedures and requirements for internship. Graduate students interested in an Education Specialist Credential should contact the Coordinator of Special Education. Multiple and Single Subject candidates must be approved by the Director of Field Experiences or the Director of Special Education for candidates for the Education Specialist Credentials to interview with public school districts for a full-time teaching contract, obtain a Memorandum of Understanding, provide a full-time teaching contract, verify that their teaching position is appropriate for the credential for which they are preparing, and apply for a State University Internship Credential at the Office of the Credential Analyst. Interns are supervised by the University and must have site support supervision. Interns are subject to district requirements and contract obligations. All program requirements for coursework and subject matter knowledge must be successfully completed prior to the Internship, and the approval of standards and competencies must be completed for a recommendation for the preliminary credential. Multiple Subject and Education Specialist candidates must pass the RICA examination.

Placement in an internship through the University of the Pacific will only be made for candidates who complete a minimum of nine units of professional coursework in the Benerd School of Education if they were previously enrolled in a California university or district approved teacher education program. They must present a letter from the credential program last attended that states they left that program in good standing to the Chair of the Department of Curriculum and Instruction. They must be also admitted to the Graduate School and Credential Candidacy. Professional, methods courses in the SB 2042 Multiple Subject and Single Subject Programs must be completed at the University of the Pacific. Education Specialist candidates should consult with the Director of Special Education for courses that must be taken at Pacific. Normally, a minimum of nine (9) units in the professional courses in the Education Specialist program must be taken at Pacific prior to, or concurrent with, an internship. Students must be admitted to the Graduate School of the University and be fully admitted to the Teacher Education Program (formerly "Credential Candidacy"). The Director of Field Experiences must approve their enrollment in an internship. The chair of the Department of Music Education and the Music Intern Advisory Group approve internships in music.

Completion of a Multiple and a Single Subject Credential

Students preparing for meeting requirements for both the Multiple and Single Subject credentials must meet all requirements for one of the two credentials, including student teaching or internship. Once the person is eligible to be recommended for one credential, the individual may be recommended for the second credential by meeting the subject matter requirement for the particular credential and completion of a minimum of four units of professional methods courses in the second credential and credential specific requirements in reading and language arts development. For those individuals who wish to add the Multiple Subject credential once meeting requirements for the Preliminary Single Subject credential must also pass the Reading Instruction Competency Assessment, and they may be required to take appropriate reading courses for the Multiple Subject credential in order to prepare for the RICA. The opportunity to add a second credential is subject to any changes and new requirements from the Commission on Teacher Credentialing.

Subject Matter Knowledge

Multiple Subject candidates must satisfy subject matter knowledge by passing the state-approved examination (CSET-Multiple Subjects) beginning July 1, 2004. Subject matter knowledge for a Single Subject Credential and for an Education Specialist Credential may be demonstrated by passing state designated examination(s) or by successfully completing a CCTC approved program of coursework in a subject matter program (subject matter preparation is subject to change according to state requirements). Information on coursework programs for the Diversified-Liberal Studies Major and for Single Subject programs in Art, English, Social Sciences, Sciences, Mathematics, Physical Education, Spanish, and Music are available in the Department of Curriculum and Instruction.

Information about state approved examinations for subject matter knowledge is available in the Benerd School of Education's Testing Office, Room 101 and outside Room 101. Test scores for subject matter knowledge are usable for only five years.

CLAD Program—Ryan Act

Approved by the Commission on Teacher Credentialing, a Ryan Act Multiple Subjects Credential with Cross-cultural Language Acquisition and Academic Development (CLAD) credential program is available to students. Details about this program and requirements are available from the Curriculum and Instruction Department or the CLAD and BCLAD adviser. The CLAD certificate is added to a Ryan Act credential. The Department of Curriculum and Instruction does not offer a BCLAD certificate.

(N.B.) Any changes by the California Commission on Teacher Credentialing and/or the State Department of Education must be required. The University Catalog may not be current with all changes. Please consult the Credential Analyst for information on current requirements.

Bilingual Program—SB2042 Multiple Subject Credential with BCLAD

For those students desiring to teach in Spanish/English bilingual, elementary 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. The candidate must pass examinations in Spanish and the culture of the target population. Details about this program and requirements are available from the Curriculum and Instruction Department or BCLAD adviser. This program is available only to undergraduates who completed the Diversified-Liberal Studies Major approved by CCTC in 2002-2003.

Single Subject Programs: Demonstration of Subject Matter Knowledge

Please consult with the Chair of the Curriculum and Instruction Department for current information on subject matter programs available at the University and CSET information. In lieu of a subject matter program, there are state-approved examinations. Information on current designated subject matter exams is available from the Credential Analyst, the Testing Office, or the Department of Curriculum and Instruction. The state approved examinations, CSET exams, are provided by National Evaluation Systems (NES).

The subject matter requirement at the time of Admission to Teacher Education (Credential Candidacy) may be assessed in one of the following ways or conditions:

1. The student provides evidence of having passed the appropriate subject matter examination(s).
2. The student provides evidence of having attempted the appropriate subject matter examination(s).
3. The student provides evidence of registration for the next scheduled examination.
4. The student provides evidence of having completed a commission approved subject matter preparation program.
5. The student provides evidence of continuous progress toward meeting the subject matter requirement.
6. The student provides evidence of enrollment in an organized subject matter examination preparation program.

   (Taken from the Commission on Teacher Credentialing Preconditions)

With condition #6 (above), at the time of application for Admission to Teacher Education, we allow University of the Pacific students applying for candidacy for the elementary-Multiple Subject program to present evidence of their work towards completion of the Diversified Major because of its alignment with the subjects that are sampled in the current state approved examination(s): CSET-Multiple Subjects Examinations, offered by National Evaluation Systems.

Beginning July 1, 2006, new students entering the University of the Pacific as freshman, in particular, who wish to earn a Single Subject credential in English; Social Sciences; Mathematics; Physical Education; Art; Spanish; Music; and/or Sciences, will need to pass the appropriate state-approved examinations (currently CSET) because approved SB2042 subject matter programs in these areas are not offered.

Returning students, who matriculated to the University prior to January 2005, may be eligible to complete the subject matter programs in English; Social Sciences; Mathematics; and Sciences that were based on approved programs under "old" standards. Please consult with the Chair of the Department of Curriculum and Instruction, Education Building room 102, for information about these options. There are designated single subject advisors for Single Subject credentialing in these four areas, who also can provide information about meeting any one of the above six conditions. Advisors are available in the Department of English, Mathematics, History-Social Sciences, and Science departments: Biology; Chemistry; Physics; and Geosciences, in the College of the Pacific.

Returning students who entered the University in Fall 2005 and Spring 2006 can complete approved subject matter programs in the following Single Subject areas: Physical Education; Spanish; and Music Education. There are advisors in the Department of Sports Sciences, Modern Languages, and the Conservatory of Music's Department of Music Education. However, freshman students entering in Fall 2006 may not begin subject matter programs based on 1994-95 CCTC standards.

For all Multiple Subject (elementary teaching) candidates, the CSET-Multiple Subjects examinations must be passed prior to enrollment in Directed Teaching (i.e., student teaching or approved internship). Single Subject candidates must completed all course and assessment requirements for an approved subject matter program or pass all appropriate state-approved subject matter examinations (CSET exams) prior to enrollment in Directed Teaching (i.e., student teaching or internship).

Subject Matter Programs from Other Institutions

An approved program taken at another university will usually be accepted. Students must submit verification of the completion of a CCTC approved program from the authorized director from their university. As of July 1, 2004, Multiple Subject "waiver" programs from approved California universities must have been completed by June 30, 2004. New subject matter requirements specify the state-approved examination (CSET- Multiple Subjects) must be used to demonstrate subject matter competence beginning July 1, 2004.

Teacher Education coursework from other Higher Education Institutions

Graduate students who completed a portion of acceptable teacher preparation coursework from another institution must be admitted to the University through the Research and Graduate Studies Office. Placement for student teaching or approval for internships through Pacific will only be made for candidates completing a minimum of nine units of professional coursework in the School of Education. A letter of good standing from the prior credential program must be presented to the chair of the Curriculum and Instruction Department.

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 Pacific or another college, or by arranging with the Political Science Department in Wendell Phillips Center to take an examination for a fee. At Pacific, POLS 41, or HIST 20 and 21 will satisfy the course requirement.

Services for Out-of-State Teachers

Teachers who have been prepared in other states should apply directly to the Commission on Teacher Credentialing, 1900 Capitol Avenue, Sacramento, CA 95814-4213. Such teachers may enter Pacific for the purposes of clearing a credential or satisfying selected requirements. A credential file should be opened, with the credential secretary being given copies of credential documents. Admission to Pacific's Graduate School is also necessary. The School of Education will recommend for the appropriate credential when California requirements are met if the necessary study is completed at this

institution. A fee of $30 is required to open a credential file.

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) 946-2287 or 946-2558 to confer about course selection. They should also contact the University's Office of Admissions for transfer admission requirements, (209) 946-2211. Graduating University seniors should contact the Graduate School for information and application and confer with the School of Education. If the GPA for junior/senior years is above 3.0, they can inquire about the Master of Education degree which includes credential preparation. The GRE General Examination scores are also required for application for an advanced degree.

Opportunities in Postgraduate Teacher Preparation

Graduates of Pacific and other universities may apply to the Graduate School for admission to prepare for teaching. The Department of Curriculum and Instruction offers programs for the Single and Multiple Subject Credentials and the Education Specialist Credentials in Special Education. Strong academic performance in junior/senior years is necessary. Those who have a 3.0 GPA may consider applying for a Master of Education (M.Ed.) degree. Those applying for the 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 master's studies is complete when the teaching credential is obtained. Those applying for the M.Ed. in Music Education must take the Graduate Record Examination, General Test. Further details about admission to graduate programs in Music are available from the Chair of the Music Education Department.

Programs in English as a Second Language: Pedagogy Major for International Students

The School of Education offers an undergraduate program for foreign 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 Cross-cultural Language and Academic Development (CLAD) Certificate Program toward a master's program. The School does not offer a Master's degree with TESOL authorization. At the undergraduate level, foreign students may choose the Pedagogy Major with a specialization in either Language and Culture or Second Language Pedagogy. (See description under Degrees in the School of Education for specific courses required for the Pedagogy Major.)

CLAD Certificate Program for Ryan Act Credential Holders

A teacher holding a Ryan Act Credential may submit transcripts to the Commission on Teacher Credentialing for coursework in a designated CLAD Certificate program. A teacher must satisfy a minimum of 12 units of coursework in three domains. Teachers must consult with the Department of Curriculum and Instruction for coursework that is acceptable to complete the CLAD Certificate. There is a state-approved examination program for individuals who do not take coursework in a CLAD Certificate program. The CLAD Certificate is added to a Ryan Act Credential. CLAD is currently not needed for SB 2042 Credentials. Students should consult with the Credential Analyst about state credentialing requirements and the relevance of CLAD for the particular credential already held or being sought.

Undergraduate Degrees in the School of Education

The School of Education offers the Bachelor of Arts in Liberal Studies degree, which requires a total of 124 semester units. It includes two majors:

a. A Diversified Major, which leads to a preliminary credential for elementary teaching in California.

b. A Pedagogy Major, which is designed for undergraduate students from other countries who wish to teach in their home countries.

Undergraduate Degree Program for the Bachelor of Arts in Liberal Studies Degree

Diversified-Liberal Studies Major SB 2042 Elementary Subject Matter Standards

The California Commission on Teacher Credentialing approved a SB 2042 Diversified-Liberal Studies Major for the Multiple Subject program, though the CSET-Multiple Subjects examination must be passed prior to Directed Teaching to obtain the Multiple Subject Preliminary Credential. The program includes required courses in the core that all majors take, a concentration field of choice, and prerequisite teacher education courses. Successful completion of the major allows the student to complete General Education Fundamental Skills and Liberal Learning Requirements. Students who entered Pacific prior to Fall 2006 should consult prior catalogs and department advising materials for course requirements. The outline of that program for new freshman students entering in Fall 2006 is as follows.

Core Courses in the Diversified Major for Freshman Students Entering in Fall 2006

Language, Literature, Communication

1. CURR 123,	Syntax and Semantics	3 units
2. Pacific Seminar I		4 units
3. Pacific Seminar II		3 units
4. COMM 143	Intercultural Communication	4 units
5. ENGL 25	(Literature analysis)	4 units
6. CURR 115	Introduction to Language	3 units
7. CURR 121	Second Language Acquisition	3 units

History (World, United States, California)

8. HIST 10	Western Civilization I	4 units
9. HIST 20	United States History I	4 units
10. HIST 21	United States History II	4 units
11. HIST 130	History of California	4 units

Mathematics

12. MATH 35	Elementary Statistical Inference	4 units
Or MATH 37	Probability and Statistics (For students with advanced mathematics abilities)	
13. MATH 161	Elementary Concepts of Math I	4 units

Sciences

14. PHYS 17	Concepts of Physics	4 units
15. BIOL 41	Introduction to Biology	4 units
16. GEOS 57	Earth Systems Science	4 units

Visual and Performing Arts

17. THEA 11	Introduction to Theatre	3 units
18. MEDU 100	Music for Children	3 units
19. ARTS 131	Visual Arts in Education	4 units

Physical Education and Child Development

20. SPTS 151	Elementary Physical Education	3 units
21. PSYC 29	Child Development	4 units

Senior Capstone Courses

22. CURR 195A,	Pedagogical Seminar (TBD)	3 units*
23. Pacific Seminar III		3 units

Concentration Courses In The Major

Courses 24 through 26 or 27: Students complete three or four courses in one of the following concentration fields of study: Language and Linguistics; History and Social Sciences; Mathematics; Sciences; Visual and Performing Arts; Physical Education; Human Development, with emphasis in Special Education; or BCLAD in Spanish. The concentration allows the student to complete a "depth of study" requirement by completing a minimum of 12 units in one of these fields. These concentrations are described in advisement materials found in the Curriculum and Instruction Department, Room 102 or 103.

Students must complete successfully a subject matter portfolio, typically completed while students take Pacific Seminar III.

All students need to complete a minimum of 124 semester units for the bachelor's degree and all major courses and prerequisite teacher education courses. Students earning a GPA lower than 2.5 will need a minimum GPA of 2.0 cumulative and a 2.0 GPA for all coursework taken at the University of the Pacific to earn the bachelor's degree. Courses in the major and in credentialing must be taken for a letter grade. No more than eight units of extension coursework (EXTN) from Pacific may count towards the degree. Limitations on SPTS 11 and SPTS 13 coursework also apply.

As of July 1, 2004, students must pass the state-approved examination, CSET-Multiple Subjects, to satisfy subject matter competence for a Multiple Subject Credential, in accordance with state and federal requirements for licensure.

**At the time of the printing of the Catalog, the Department of Curriculum and Instruction's decision on whether or not to require CURR 195A for new students was pending.*

Prerequisite Teacher Education Courses

In order to complete the bachelor's degree, students in the Diversified/Liberal Studies major program must complete prerequisite teacher education courses. These courses include the following:

CURR 105x	Introduction to Education	3 units
EPSY 121x	Learner-Centered Concerns	3 units
CURR 134x	Educational Computing	2 units
CURR 130x	Teaching and Assessment	3 units
CURR 137x	Teaching English Learners	2 units

Transfer students must complete CURR 105x, CURR 134x and EPSY 121x to complete a degree.

The SB 2042 program for the Diversified/Liberal Studies major and the SB 2042 program for the Multiple Subject Preliminary credential are designed to enable most students in the Diversified Major who take and pass full loads of 16-18 units each semester, beginning the first semester of the freshman year, to complete the major and the preliminary Multiple Subject credential in four years. Courses for the major also double count in the General Education program, and students complete a sequence of teacher education courses through the four years of undergraduate education. Students who enter the university with needs in the development of fundamental skills in writing, reading, and mathematics may have difficulty completing the degree and preliminary credential in four years. Students who develop a second major or one or more minors may have difficulty completing a preliminary credential in four years. All students will need to complete the major as well as prerequisite teacher education courses, with a minimum of 124 units, for the bachelor's degree. The Multiple Subjects state-approved examination (CSET- Multiple Subjects) must be passed prior to Directed Teaching for satisfying state and federal requirements. CBEST must be passed prior to Directed Teaching.

Advising materials for the Diversified Major are available in the Department of Curriculum and Instruction, Room 102 or 103, School of Education Building. Students are required to meet with a department adviser for registration each semester as they progress through the degree program.

Typical First-Year Program in the Diversified Major

A freshman is encouraged to register for 16-18 units per semester. The following are examples of courses that might be taken during the first year:

Fall:

CURR 115	Introduction to Language	(3)
PACS 1	Pacific Seminar I	(4)
HIST 10	History of Western Civilization I	(4)
CURR 105x	Introduction to Education	(3)
CURR 134x	Educational Computing	(2)

Spring:

ENGL 25	English 25	(4)
PACS 2	Pacific Seminar II	(3)
GEOS 57	Earth Systems Science	(4)
Math 35	Elementary Statistical Inference	(4)
THEA 11	Introduction to Theatre	(3)

Course Requirements for the Pedagogy Major

1. 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. Students must complete Pacific Seminars I, II and III and two courses in each of the three main categories in general education. If a Pacific Seminar I or II course is waived, or not passed, a course from an appropriate category for general education is required.
2. Development of proficiency in the English language through intensive English programs, as needed, to pass proficiency examinations (24 units or equivalent).
3. Professional education – A minimum of 24 units is required:

   Required courses in Teacher Education. Students must take:

CURR 134x	Introduction to Educational Computing	(2)
EPSY 121x	Learner-Centered Concerns	(3)
CURR 105x	Introduction to Education	(3)
CURR 130x	Teaching and Assessment	(3)

Students must select either an elementary or secondary focus and complete the courses for the focus area:

The courses for an elementary focus include:

CURR 131x	Teaching Social Studies	(2)
CURR 132x	Teaching Science	(2)
CURR 133x	Teaching Mathematics	(2)
CURR 135x	Teaching Reading/Language Arts (MS)	(3)
CURR 136x	Literacy Assessment	(2)

The courses for a secondary focus include:

CURR 179x	Teaching in the Content Areas	(4)
CURR 175	Reading/Language Arts Development: (SS)	(3)

All Students in both an elementary and secondary focus of the Pedagogy Major must take the following course:

CURR 195a	Pedagogical Seminar	(3)
Or		
Pacific Seminar III		(3)

Electives (3 units minimum) chosen from:

CURR 165	Microcomputers and Curriculum Design (need permission of instructor)	(3)
SPED 123	The Exceptional Child	(3)

SPED 166	Building Family – Professional Partnerships	(3)
EADM 130	Seminar: Cultural Basis of Conflict in the Classroom	(3)

4. Students complete a Concentration Area in one of the following options: (24 units)
   a. Second Language Pedagogy (for international students who are preparing to teach English as a foreign language): courses in language structure, language development and second language acquisition.
   b. Language and Culture Pedagogy (for international students who are preparing to teach the language and culture of the United States): courses in literature of the English language, expository writing, reading and English instructional techniques, and courses providing special understanding of American culture.
   c. Technical Pedagogy (for international 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.
   d. Special Pedagogy (for international students preparing to teach in a specialized learning field): teaching the physically and psychologically handicapped.
5. Elective courses to meet degree requirements of 124 units.
6. 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.

Undergraduate Preparation for a Bachelor of Arts in Liberal Studies and a Level One Education Specialist Credential

Students in the Bachelor of Arts in Liberal Studies program in the Benerd School of Education may pursue an Education Specialist Credential, Mild/Moderate or Moderate/Severe Disabilities, Level One and the Diversified-Liberal Studies Major. Students also complete the Diversified-Liberal Studies Major described previously, prerequisite courses in Teacher Education, and the following courses in the Education Specialist Level One program:

Courses in the Diversified-Liberal Studies Major's Concentration in Human Development:

SPED 123	The Exceptional Child	3 units
SPED 166	Building Family-Professional Partnerships	3 units
PSYC 131	Adolescent and Young Adulthood	4 units
JCTR 75	Introduction to the Helping Professions	2 units

Teacher Education Prerequisite Courses:

CURR 105x	Introduction to Education	3 units
EPSY 121x	Learner-Centered Concerns	3 units
CURR 134x	Educational Computing	2 units
CURR 130x	Teaching and Assessment	3 units
CURR 137x	Teaching English Learners	2 units

Professional Methods Courses:

Students must complete Advancement to Teacher Education (Credential Candidacy) steps as described in the Multiple Subject description in this Catalog to enroll in the following courses:

SPED 124	Assessment of Special Education Students	3 units
SPED 128 M or S	Advanced Programming, Mild/Moderate or Moderate/Severe	3 units
SPED 142M or S	Curriculum and Instruction/ SPED Mild/Moderate Or Curriculum and Instruction/ SPED Moderate/Severe	3 units
SPED 195E	Positive Behavioral Support in the Classroom	3 units
CURR 135x	Teaching Reading and Language Arts (MS)	3 units

Subject matter competence may be met with successful completion of the Diversified major or a Single Subject subject matter program or the state-approved examination(s) for the Multiple OR Single Subject-subject matter content areas. State requirements for subject matter competence are subject to change.

Prior to admission to Directed Teaching, students must attend a meeting that the Coordinator of Special Education and the Director of Field Experiences hold to inform students about application procedures for student teaching or internship placements (STAR review). GPA requirements and minimum grade requirements in teacher preparation courses are reviewed and must be completed. The CBEST examination must be passed and subject matter requirements for the credential must be completed. Students will not be allowed to register for Directed Teaching if the CBEST and subject matter requirements, either the CCTC approved program for the Diversified-Liberal Studies Major with 100% completion of designated courses and with a GPA of 2.5 or higher or successful passage of the CSET examination(s) for the Multiple Subject credential, are not met. A subject matter program or passage of examinations for a Single Subject content area is allowed for the Education Specialist Credential. Students must also complete the United States Constitution requirement (See the Multiple Subject section in the Catalog.)

Directed Teaching

SPED 198 M or S	Directed Teaching: Mild/Moderate Or Moderate/Severe	10 units

Internship is an option for Directed Teaching for the Education Specialist Credentials. A student must have a bachelor's degree and meet all program requirements for an Internship. See the Internship section in the Catalog for requirements for Internship.

Students must complete competencies for the Education Specialist Program, pass the RICA examination, complete a professional portfolio, and satisfy all program requirements for a recommendation for the Level One Credential.

Course Offerings

Department of Curriculum and Instruction

Professors: Longmire (Emerita), Clawson (Emeritus), Morrow (Emeritus), Brittin, Oprandy

Associate Professors: Arnold, Draheim (Chair), Elium, Eskridge, Langer (Emerita), Snyder

Assistant Professors: Cain, Go, Nelson, Potter, Stevenson

Instructors: Evans, Kitchen, Schwartz

CURR 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.

CURR 105x: Introduction to Education (3)
An introductory course that explores the complex relationships within and among local, state, and national levels of public education. The course introduces historical, legal, and social issues that affect diverse educational settings. Topics include key movements and legal cases of prominence in American education; demographic information about learners and schools in California; home, family and school partnerships; and professional stages in teaching careers (e.g., subject matter preparation, teacher education, initial licensure,

induction programs, and professional development). The course includes an introduction to "reflective practice." Taken by students interested in Multiple Subject, Single Subject and/or Educational Specialist credentials. This course is a prerequisite to Admission to Teacher Education, but it is open to all students at the University. Thirty hours of fieldwork in K-12 public schools is required, which also requires fingerprint review and clearance at local districts and TB test clearance. There are fees for these services.

CURR 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, nonverbal communication, languages in contact, language planning, pidgins and Creoles, and societal attitudes toward language use.

CURR 121. Second Language Acquisition (3)
Using first language acquisition for comparison, this course focuses on second language acquisition and includes such topics as: inter-language, over-generalization, 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.

CURR 123. 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.

CURR 127. 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.

CURR 129. 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.

CURR 130x: Teaching and Assessment (3)
This course supports reflective teaching and learner-centered principles and practices in K-12 schools. The course focuses on state-adopted curriculum standards and frameworks in seven content fields, approaches to classroom management, selection of curriculum materials at the state and evaluation. The course includes principles of specially designed academic instruction for English language learners and ways of fostering equity in the curriculum. Technology is used to enhance curriculum design and student interaction with content knowledge. Twenty hours of fieldwork is required. *Prerequisite: Fingerprint and TB test clearance.*

CURR 131x: Teaching Social Studies (Multiple Subject) (2)
Methods and curriculum for teaching social studies in self-contained classrooms. Topics include state-adopted content standards and curriculum frameworks, essential social studies themes, concepts, and skills; instructional planning and diverse and appropriate teaching strategies; meeting the needs of learners, including mainstreamed and culturally, linguistically, economically, and ethnically diverse learners; and principles and practices for evaluating students' learning. Ten hours of fieldwork is required. *Prerequisite: Admission to Teacher Education and fingerprint and TB test clearance. Taken prior to Directed Teaching.*

CURR 132x: Teaching Science (Multiple Subject) (2)
Methods and curriculum for teaching science in self-contained classrooms. Topics include state-adopted content standards and curriculum frameworks; essential life, physical, and earth science themes, concepts, and skills; instructional planning and diverse and appropriate teaching strategies for meeting the needs of diverse learners, including mainstreamed and culturally, linguistically, economically, and ethnically diverse learners; principles and practices of evaluation of students' learning. Ten hours of fieldwork is required. *Prerequisite: Admission to Teacher Education and fingerprint and TB test clearance. Taken prior to Directed Teaching.*

CURR 133x: Teaching Mathematics (Multiple Subject) (2)
Methods and curriculum for teaching mathematics in self-contained classrooms. Topics include state-adopted content standards and curriculum frameworks; essential mathematics themes, concepts, and skills; instructional planning and diverse and appropriate teaching strategies for meeting the needs of diverse learners, including mainstreamed and culturally, linguistically, economically, and ethnically diverse learners; principles and practices of evaluation of students' learning. Ten hours of fieldwork is required. *Prerequisite: Admission to Teacher Education.*

CURR 134x: Educational Computing (2)
A course focused on basic skills and software for creating multimedia projects, completing assignments in all education courses, and meeting the state's technology standards for teachers. All assignments in this course relate to building the structure and first section of a candidate's teacher education electronic portfolio. Thereafter, candidates add sections to the portfolio during other courses and activities in their programs of study, including evidence that they have met the state's technology standards. Upon graduation, the portfolios are archived in the BSE, and candidates will be able to create a DVD of their entire portfolio or of parts they wish to use. This course is a prerequisite to Admission to Teacher Education.

CURR 135x: Teaching Reading/Language Arts (Multiple Subject) (3)
Methods and curriculum for teaching reading and language arts in elementary and middle school classrooms. The course focuses on the processes of reading, writing, and other areas of language arts, and on how to design appropriate teaching strategies for encouraging growth in beginning reading and writing and developing fluent reading and writing skills among K-8 students. Emphasis is placed on integrating reading and language arts throughout the curriculum. Twenty four hours of fieldwork is required, to be shared with CURR 136x. *Prerequisite: Admission to Teacher Education and fingerprint and TB test clearance. Taken prior to Directed Teaching.*

CURR 136x: Literacy Assessment (Multiple Subject) (2)
This course investigates uses of ongoing instructional diagnostic strategies in reading and language arts that guide teaching and assessment; early intervention techniques appropriate for a classroom setting; and guided practice of these techniques. Fieldwork is required and shared with CURR 135x. *Prerequisite: Admission to Teacher Education and fingerprint and TB test clearance. Concurrent or prerequisite enrollment in CURR 135x is required. Taken prior to Directed Teaching.*

CURR 137x: Teaching English Language Learners (2)
An overview of various organizational methods (e.g., submersion, ESL pullout, transitional, maintenance, enrichment and two-way bilingual, immersion) to meet the needs of English learners. The philosophy, rationale, and goals of these methods are explored and debated. Multiple strategies and approaches to assist learners with content-based instruction and with developing competency and fluency in English are presented. Observations of and practice in such strategies are built into field experiences, including directed teaching, affording teacher candidates multi-

ple opportunities to see, practice, and reflect on ways to meet the needs of English learners. Ten hours of fieldwork is required. *Prerequisite: Fingerprint and TB test clearance.*

CURR 141. Children's Literature (3)
A survey of quality literature for children from preschool through eighth grade. The various genres of children's literature are examined. Emphasis will be placed on how books may affect the growing child and on ways to develop children's appreciation and comprehension of stories and extend their subject matter knowledge.

CURR 158x: Directed Teaching (Multiple Subject) (10)
Full-day student teaching or internship in public schools. Candidates for a Multiple Subject preliminary teaching credential are placed in local public schools for intensive application of knowledge, skills, and dispositions for professional practice in California schools.

Student teaching is full-day teaching for a semester, and undergraduates may be approved for student teaching. *Prerequisites: Admission to Teacher Education and fingerprint and TB test clearance. Additional clearances are required, including passage of CBEST, subject matter approval; Certificate of Clearance: CURR 105x, 131x, 132x, 133x, 134x, 135x, 136x, EPSY 121x, and approval of the Director of Field Experiences.*

Internship requires completion of at least a bachelor's degree, approvals by the teacher education program, and a contractual and memorandum of understanding with a local school district. Internships typically require at least one academic year. *Prerequisites: Admission to Teacher Education and fingerprint and TB test clearance. Additional clearances are required, including passage of CBEST; subject matter approval; Certificate of Clearance: completion of the United States Constitution requirement; and approval of the Director of Field Experiences; and a contract with a school district.*

CURR 158b. Directed Teaching: Multiple Subjects Special Assignment (2-14)
Student teaching of specially specified duration or nature. *Prerequisites: as for 158x. Corequisite: CURR 195x.*

CURR 158c. Directed Teaching: Multiple Subjects: BCLAD (2-14)

Prerequisites: as for CURR 158x. Must qualify for bilingual student teaching. Corequisite: CURR 195x.

CURR 158j. Directed Teaching: Multiple and Single Subject (14)

Prerequisites: as for CURR 158a. Corequisite: CURR 195b.

CURR 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.

CURR 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. *Prerequisite: CURR 134x or CURR 161 or permission of the instructor.*

CURR 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. Recommended for the semester prior to directed teaching.*

CURR 177. Practicum (2-4)

CURR 178X Directed Teaching: Single Subject (SB2042) 10
All day student teaching in a subject-matter classroom, usually in a secondary school. This course is for students completing the SB2042 Single Subject credential. *Prerequisites: CURR 105x, CURR 134x, CURR 130x, CURR 137x, CURR 179x (formerly CURR 171 and CURR 173), CURR 175, EPSY 121x, credential candidacy, CBEST completed; subject matter competency completed; and successful clearance for student teaching. Corequisites: SPED 125x and CURR 195x.*

CURR 178a. Directed Teaching: Single Subject Music (3-14)
Student teaching. *Prerequisites: credential candidacy, CURR 105x, CURR 134x or 161, EPSY 121x, CURR 135x or 175, CBEST Success, clearance of Music Education Department chair, previous sign-ups and clearance for student teaching. SB 2042 requires CURR 137x. Corequisites: CURR 195x and SPED 125x.*

CURR 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 CURR 178x. Corequisite: CURR 195x.*

CURR 179x. Teaching in the Content Areas (4)
Preparation of Single Subject credential candidates to develop professional, reflective practices and abilities for teaching in single subject classrooms, especially in secondary schools. Emphasis will be placed on acquiring and practicing the knowledge, skills, and ethical values associated with managing contemporary, culturally diverse secondary classroom environments and with learning about specific subject matter content and pedagogy and a variety of instructional and assessment strategies to benefit all learners. The needs of all secondary school students, including English learners, and characteristics of the school environment will be emphasized for fostering effective teaching and learning. Fieldwork is required in addition to class meetings. *Prerequisites: Completion of prerequisite courses or concurrent enrollment and approval for Credential Candidacy.*

CURR 191. Independent Study (1-3)
Primarily library study. Prerequisite: Consent of the department chair.

CURR 192. Preliminary Fieldwork (1-3)
Prerequisite: Consent of the department chair.

192a. Elementary Education

192b. Secondary Education

192d. Early Childhood Education

192e. Reading

192f. Bilingual Education

192g. Cross-cultural Education

192h. Special Project

CURR 193. Special Projects (2-4)
Prerequisite: Consent of the instructor.

CURR 195a. Pedagogical Seminar (3)
Investigation of the role that subject matter knowledge and its representations play in teaching. Emphasis on self-assessment of subject matter knowledge. Focus on moral and ethical

dimensions of teaching and learning. *Prerequisite: Completion of a minimum of 80% of the diversified major. Senior status or second semester junior status required.*

CURR 195x: Seminar: Directed Teaching (2)
Reflection upon and integration of the Directed Teaching experience in large and small group settings for the SB 2042 Credential. Topics include multicultural education, child abuse, school law, interpreting standardized test scores, professional associations and negotiations, discipline plans, lesson planning and conferencing skills. *Corequisites: CURR 158/258 and satisfaction of all prerequisites.*

CURR 197. Research in Education (1-3)
Primarily field investigation. Prerequisite: Consent of the department chair.

CURR 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.

CURR 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.

CURR 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.

CURR 221. Second Language Acquisition (3)
Using first language acquisition for comparison, this course focuses on second language acquisition and includes such topics as: interlanguage, over-generalization, 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.

CURR 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.

CURR 227. 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.

CURR 229. 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.

CURR 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 and approaches that can successfully be applied in an on-going educational program to assist the creative student in reaching his full potential.

CURR 258a. Directed Teaching: Multiple Subjects (10)
Involves all-day work in the classroom and action research. *Prerequisites: CURR 105x, EPSY 121x, CURR 130x, CURR 134x or 161, CURR 131x, 132x, 133x, 135x and 136x, CBEST and subject matter competence completion, credential candidacy, and sign-ups and clearance for directed teaching. Open only to M.Ed. degree candidates. Corequisite: CURR 195b or CURR 195x.*

CURR 258b. Directed Teaching: Multiple and Single Subjects (10)
Open only to students in M.Ed. program.

CURR 258c. Directed Teaching: Multiple Subjects: BCLAD (2-10)
Prerequisites: as for CURR 258a. Must qualify for BCLAD credential. Corequisite: CURR 195x.

CURR 258j. Directed Teaching: Multiple Subjects Special Assignment (2-10)
Open only to students in M.Ed. program.

CURR 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.

CURR 262. Advanced Methods in Bilingual Education (3)
This course provides a critical interpretation of current practice in bilingual education, based on theory and research.

CURR 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 affect change in curriculum. Various projects related to evaluation of software, teaching strategies and research in new technologies will be required. *Prerequisite: CURR 261 or permission of the instructor.*

CURR 277. Practicum (2-4)

CURR 278. Directed Teaching: Single Subject (10)
Involves all-day work in the classroom and action research. *Prerequisites: CURR 105x, EPSY 121x, CURR 134x or 161; CURR 130x; CURR 179x, 175, CBEST and subject matter competence completion, credential candidacy, and sign-ups and clearance for directed teaching. Open only to M.Ed. degree candidates. Corequisites: CURR 195x and SPED 125x.*

CURR 278a. Directed Teaching: Single Subject Music (3-10)
Directed teaching with action research. *Prerequisites: CURR 105x; CURR 137x; CURR 134x or 161; EPSY 121x, CURR 175 or 135x, CBEST success, credential candidacy, and sign-ups and clearance for directed teaching. Open only to M.Ed. degree candidates. Corequisite: CURR 195x.*

CURR 278b. Directed Teaching: Single Subject Special Assignment (2-10)
Part-time student teaching of specially authorized duration and nature. Additional practicum work. *Prerequisites: CURR 105x, EPSY 121x, CURR 134x or 161, CURR 130x, CURR 137x, CURR 179x, CURR 175, CBEST success, credential candidacy, and sign-ups and clearance for student teaching. Open only to M.Ed. degree candidates. Corequisites: CURR 195x and SPED 125x.*

CURR 280. Modern Trends in Early Childhood Education (3)
Acquaintance with current trends in the education of children from birth through third grade.

CURR 282. Advanced Curriculum and Theory in Early Childhood Programs (3)
Involvement with curriculum design, analysis and evaluation.

CURR 291. Independent Graduate Study (1-3)
Graduate students may enroll in library research with consent of the department chair.

CURR 292. Advanced Fieldwork (1-6)
Prerequisite: Consent of the department chair.

292a. Elementary Education

292b. Secondary Education

292d. Early Childhood Education

292f. Reading

292h. Special Projects

292l. Advanced Fieldwork in Bilingual Education (1-6)

CURR 293. Special Topics (2-4)
Prerequisite: Consent of the department chair.

CURR 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 forth-coming curricular design. Specific content includes historical and philosophical foundation; curriculum trends, alternative approaches; and curriculum materials analysis.

CURR 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.

CURR 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.*

CURR 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.

CURR 295h. Seminar in Language Teaching (3)
A seminar in ESL methods, materials, theories and current research. *Prerequisite: CURR 127 or 227 or concurrent enrollment in 227.*

CURR 297. Graduate Research in Education (1-3)
Graduate students may enroll in some field investigation with consent of the department chair.

CURR 299. Master's Thesis (4)

CURR 302. Issues in Teacher Education (3)
Review and analysis of current curricular topics related to pre-service and in-service teacher preparation.

CURR 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.

CURR 306. Curriculum Materials Development (3)
Design and development of appropriate curriculum materials for achieving program and course objectives.

CURR 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.

CURR 391. Independent Graduate Study (1-3)
Doctoral students may enroll in directed library research with consent of the department chair.

CURR 392. Curriculum Practicum (2-4)

CURR 393. Special Topics (2-4)
Prerequisite: Consent of the instructor.

CURR 395b. Qualitative Research Design and Methods (3)
This course focuses on methods of designing and conducting qualitative research in education. Topics include: characteristics of qualitative research, data collection and analysis, determining validity and reliability, and ethical issues related to qualitative research. Students will engage in qualitative research at off-campus field sites. This course is a component in the set of research courses required for all Ed.D. students. *Prerequisites: completion of a graduate level course which surveys various types of educational research, and introduces methodological concepts and techniques, such as EPSY 201, with a letter grade of B or better, and EPSY 214.*

CURR 397. Graduate Research in Education (1-3)

CURR 397A. QSA Proposal Development (1)
Doctoral students prepare and obtain approval of a proposal for three Qualifying Scholarly Activity (QSA) projects approved by a department faculty member mentor and two additional department faculty. Students may enroll in CURR 397A as early as the semester after Advancement to Full Admission has been completed or as late as the semester after they have completed a minimum of thirty units.

CURR 397B. Qualifying Scholarly Activities Projects (1)
Doctoral students develop and complete each of three proposed QSA projects. Students work with a mentor and two department faculty in conducting research relevant to three proposed projects. Doctoral students must have completed the approval of the Qualifying Scholarly Activity proposal (CURR 397Ap) or may have permission to be concurrently enrolled in CURR 397B. Students may enroll more than one time in CURR 397B until all three QSA projects have been completed and defended.

CURR 397C. Dissertation Proposal Development (1)
Open to a doctoral student who has successfully completed all coursework and three Qualifying Scholarly Activities after taking CURR 397A and CURR 397B. The student prepares and defends the dissertation proposal and Institutional Review Board (IRB) proposal. The student concurrently enrolls in a minimum of one unit of CURR 399: Doctoral Dissertation.

CURR 399. Doctoral Dissertation (1-15)

Curriculum and Instruction: Special Education Program

SPED 123. The Exceptional Child (3)
Description of the characteristics and needs of children and youth with disabilities. Exploration of the etiology, treatment, educational strategies, social and vocational opportunities for individuals with disabilities. Ten hours of field experience will be required as part of the course content. This course satisfies the requirements for clearing a preliminary multiple and single subject credential as specified by the California Commission on Teacher Credentialing (CTCC).

SPED 124. Assessment of Special Education Students (3)
The role of assessment in teaching students with disabilities will be explored. In addition, teacher made tests, curriculum based assessment, portfolio assessment, and commonly used standardized tests will be examined. This course will comply with the California Commission on Teacher

Credentialing (CCTC) requirements for The Preliminary Level One Credential for Educational Specialist: Mild/Moderate and Moderate/Severe Disabilities. *Prerequisites: SPED 123, SPED 166 and Credential Candidacy.*

SPED 125x: Teaching Exceptional Learners (2)

This methods-based course is for candidates who will be teaching students with disabilities in the general education classroom, and it includes techniques and strategies for individualizing specific student needs. The course content reviews special education law and the inclusive schools movement. Taken concurrently with Directed Teaching. *Prerequisite: Admission to Teacher Education (Credential Candidacy), fingerprint and TB test clearance, and co-enrollment in CURR 158/258 or CURR 178/278.*

SPED 128m. Advanced Programming for Students with Mild/Moderate Disabilities (3)

Theoretical and applied information pertaining to the characteristics and educational needs of students with mild to moderate disabilities will be presented. The course will comply with the California Commission on Teacher Credentialing (CCTC) requirements for the Preliminary Level One Credential for Educational Specialist: Mild/Moderate Disabilities. *Prerequisites: SPED 123, SPED 166, and Credential Candidacy.*

SPED 128s. Advanced Programming for Students with Moderate/Severe Disabilities (3)

Presentation of theoretical and applied information pertaining to specialized health care and sensory needs as well as educational characteristics for students with moderate/severe disabilities. This course will comply with the California Commission on Teacher Credentialing (CCTC) requirements for the Preliminary Level One Credential for Educational specialist: Moderate/Severe Disabilities. *Prerequisites: SPED 123, SPED 166, and Credential Candidacy*.

SPED 142m Curriculum and Instruction for Students with Mild/Moderate Disabilities (3)

Presentation of theoretical and applied information pertaining to methods of curriculum and instruction for students with mild to moderate disabilities. This course will comply with the California Commission on Teacher Credentialing (CCTC) requirements for The Preliminary Level One Credential for Educational Specialist: Mild/Moderate Disabilities. *Prerequisites: SPED 123, SPED 166, and Credential Candidacy.*

SPED 142s. Curriculum and Instruction for Students with Moderate/Severe Disabilities (3)

This course will present theoretical and applied information Pertaining to methods of curriculum and instruction for students with moderate to severe disabilities. This course will comply with the California Commission on Teacher Credentialing (CCTC) requirements for the Preliminary Level One Credential for Educational Specialist: Moderate/Severe Disabilities. *Prerequisites: SPED 123, SPED 166, and Credential Candidacy.*

SPED 166. Building Family-Professional Partnerships (3)

This course will provide practical strategies for professional educators to effectively communicate and collaborate with families in order to enhance the capacity of families to support an advocate for children with special needs in the home, school, and community. The emotional and social needs of children with disabilities and their families, education laws and policies regarding parental/family rights, historical and current trends in family advocacy, and professional ethics will also be examined. Ten hours of field experience will be required as part of the course content.

SPED 191. Independent Study (1-3)

Consent of the department chair.

SPED 193. Special Projects (1-3)

SPED 195e. Positive Behavioral Support in the Classroom (3)

Theoretical and applied information pertaining to methods of providing positive behavioral support to students with and without disabilities in educational settings will be examined. This course will comply with the requirements for the California Commission on Teacher Credentialing (CCTC) Preliminary Level One Credential for Educational Specialist: Mild/Moderate/Severe Disabilities. *Prerequisites: SPED 123, SPED 166, and Credential Candidacy.*

SPED 198m. Directed Teaching: Mild/Moderate (10)

This student teaching experience provides an opportunity for candidates in the mild/moderate credential program to apply theoretical knowledge and acquired skills to the classroom in a student teaching experience. *Prerequisites: All prerequisite and required courses must be completed to enroll in Directed Teaching and permission of the Director of Special Education or designate.*

SPED 198s. Directed Teaching: Moderate/Severe (10)

This student teaching experience provides an opportunity for candidates in the moderate/severe credential program to apply theoretical knowledge and acquired skills to the classroom in a student teaching experience. *Prerequisites: All prerequisite and required courses must be completed to enroll in Directed Teaching and permission of the Director of Special Education or designate.*

SPED 224. Assessment of Special Education Students (3)

The role of assessment in teaching students with disabilities will be explored. In addition, teacher made tests, curriculum based assessment, portfolio assessment and commonly used standardized tests will be examined. This course will comply with the California Commission on Teacher Credentialing (CCTC) requirements for the Preliminary Level One Credential for Educational Specialist: Mild/Moderate and Moderate/Severe Disabilities. *Prerequisites: SPED 123 with a "B" and Credential Candidacy.*

SPED 228m. Advanced Programming for Students with Mild/Moderate Disabilities (3)

Theoretical and applied information pertaining to the characteristics and educational needs of students with mild to moderate disabilities will be presented. The course will comply with the California Commission on Teacher Credentialing (CCTC) requirements for the Preliminary Level One Credential for Educational Specialist: Mild/Moderate Disabilities. *Prerequisites: SPED 123 with a "B" and Credential Candidacy.*

SPED 228s. Advanced Programming for Students with Moderate/Severe Disabilities (3)

Presentation of theoretical and applied information pertaining to specialized health care and sensory needs as well as educational characteristics for students with moderate/severe disabilities. This course will comply with the California Commission on Teacher Credentialing (CCTC) requirements for the Preliminary Level One Credential for Educational Specialist: Moderate/Severe Disabilities. *Prerequisites: SPED 123, SPED 166 and Credential Candidacy.*

SPED 242m. Curriculum and Instruction for Students with Mild/Moderate Disabilities (3)

Presentation of theoretical and applied information pertaining to methods of curriculum and instruction for students with mild to moderate disabilities. This course will comply with the California Commission on Teacher Credentialing (CCTC) requirements for the Preliminary Level One Credential for Educational Specialist: Mild/Moderate Disabilities. *Prerequisites: SPED 123, SPED 166 and Credential Candidacy.*

SPED 242s. Curriculum and Instruction for Students with Moderate/ Severe Disabilities (3)
This course will present theoretical and applied information pertaining to methods of curriculum and instruction for students with moderate to severe disabilities. This course will comply with the California Commission on Teacher Credentialing (CCTC) requirements for the Preliminary Level One Credential for Educational Specialist: Moderate/Severe Disabilities. *Prerequisites: SPED 123 with a "B" and Credential Candidacy.*

SPED 250. Introduction to Induction Plan (2)
The purpose of this practicum-based course is two fold: to introduce the student to the induction plan process, and provide an opportunity for candidates enrolled in the Mild/Moderate or Moderate/Severe Level II Educational Specialist Credential Program to identify their particular professional needs, set goals and objectives for their continued teacher development and apply theoretical understandings to the classroom. The course will comply with the California Commission on Teacher Credentialing (CCTC) requirements for the Level II Professional Development Educational Specialist Mild/Moderate and Moderate/Severe Clear Credential. *Prerequisite: Completion of the Preliminary Level I Educational Specialist Credential Program in Mild/Moderate and/or Moderate/Severe.*

SPED 252. Portfolio Assessment (2)
This is the last class in the 16-unit course sequence for the Level II phase of the Educational Specialist credential program. The course provides an opportunity for candidates enrolled in the Mild/Moderate or Moderate/Severe Credential Program to apply theoretical understandings to the classroom, and demonstrate professional competencies, through a series of evaluation processes. Students enrolled in this course are expected to log 40 contact hours in the field. This course will comply with the California Commission on Teacher Credentialing (CCTC) requirements for the Level II Professional Development Educational Specialist Mild/Moderate and/or Moderate/Severe Clear Credential.

SPED 291. Independent Graduate Study (1-3)

SPED 293. Special Project (1-3)
Prerequisite: Consent of the department chair.

SPED 295a. Seminar: Crucial Issues in Special Education (3)
Provides a methodology and format for advanced special education students and other related disciplines to explore crucial issues and trends and their historical origin. Attention to research and the development of positions on trends, issues and current law.

SPED 295e. Positive Behavioral Support in the Classroom (3)
Theoretical and applied information pertaining to methods of providing positive behavioral support to students with and without disabilities in educational settings will be examined. This course will comply with the requirements for the California Commission on Teacher Credentialing (CCTC) Preliminary Level One Credential for Educational Specialist: Mild/Moderate/Severe Disabilities. *Prerequisites: SPED 123 with a "B" and Credential Candidacy.*

SPED 297. Graduate Research (1-3)

SPED 298m. Directed Teaching: Mild/Moderate (6-10)
This student teaching experience provides an opportunity for candidates in the mild/moderate credential program to apply theoretical knowledge and acquired skills to the classroom in a student teaching experience. *Prerequisites: All prerequisite and required courses must be completed to enroll in Directed Teaching and permission of the Director of Special Education.*

SPED 298s. Directed Teaching: Moderate/Severe (6-10)
This student teaching experience provides an opportunity for candidates in the moderate/severe credential program to apply theoretical knowledge and acquired skills to the classroom in a student teaching experience. *Prerequisites: all prerequisite and required courses must be completed to enroll in Directed Teaching and permission of the Director of Special Education.*

SPED 298im. Internship: Mild/Moderate (5)
This internship experience provides an opportunity for candidates in the mild/moderate credential program to apply theoretical knowledge and acquire skills to the classroom in an internship experience. *Students must register for five units for each of two semesters for a total of ten units. All prerequisite and required courses must be completed to enroll in an Internship and permission must be obtained from the Director of Special Education.*

SPED 298is. Internship: Moderate/Severe (5)
This internship experience provides an opportunity for candidates in the moderate/severe credential program to apply theoretical knowledge and acquire skills to the classroom in an internship experience. *Students must register for five units for each of two semesters for a total of ten units. All prerequisite and required courses must be completed to enroll in an Internship and permission must be obtained from the Director of Special Education.*

SPED 299. Master's Thesis (4)

SPED 391. Independent Graduate Study - Special Education (1-3)

SPED 393. Special Project (1-3)
Prerequisite: Consent of the department chair.

SPED 395a. Seminar: Crucial Issues in Special Education (3)
Provision of a methodology and format for advanced special education students and other related disciplines to explore crucial issues and trends and their historical origin. Attention to research and the development of positions on trends, issues and current law.

Department of Educational Administration and Leadership

Professors: Muskal, Nagle

Associate Professors: Badway, Brennan (Chair)

EADM 130. Seminar: Cultural Basis of Conflict in Education (3)
Analysis of cultural diversity in American classrooms. Not open to doctoral students.

EADM 191. Independent Study (1-3)
Primarily library study. Admission only by consent of the department chair.

EADM 193. Special Projects (2-4)
Prerequisite: Consent of the instructor.

EADM 197. Research in Education (1-3)
Primarily field study. *Prerequisite: Consent of the department chair.*

EADM 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.

EADM 206/306. Comparative Education (3)
Educational principles, practices and organizational structure and school administration in the United States and other societies.

EADM 207/307. Sociology of Education (3)
Study of sociology of education and the classroom.

EADM 210. Seminar in American Educational Thought (3)
A philosophical treatment of American education.

EADM 220. Seminar: Social Class Effects in Education (3)
Explores the nature of social class and its effects on learning in the classroom.

EADM 230. Seminar: Cultural Basis of Conflict in Education (3)
Analysis of cultural diversity in American classrooms. Not open to doctoral students.

EADM 231. Seminar: Educational Anthropology (3)
Analysis of culture, language and values in education.

EADM 232. Gender Issues: Cross-cultural Perspectives (3)
An examination of social, economic and political forces which foster and perpetuate gender stratification and related issues. Trends/movements regarding gender roles/status are investigated from the perspective of economic and political systems in the context of Eastern and Western societies.

EADM 233. Seminar: Multicultural Education (3)
Analysis of the theoretical and philosophical foundations of cultural pluralism, acquire an understanding of strategies for implementation of cross-cultural education, and the development of units of instruction for use in cross-cultural education.

EADM 234. Seminar: Asian Cultures (3)
This course provides knowledge of East and Southeast Asian value systems. By studying Eastern philosophies and Eastern ways and life the student will gain a deeper understanding of cross-culturalism and its implications for American education and society.

EADM 240. Introduction to Student Affairs (3)
A comprehensive introduction and overview of student affairs functions within institutions of higher education. Emphasis will be on the history and evolution of the student affairs movement; gaining an understanding of the multiple roles of the student affairs practitioner; creating an awareness of the best practices in student personnel; and developing knowledge of current issues regarding students and student services functions in higher education.

EADM 241. Student Development Theory (3)
A forum for students to critically examine and evaluate current student development theories, research, and implications for practice. The course content includes study of attitudes and characteristics of American college students and their various cultures. This course also explores current issues in higher education as they impact student affairs roles and practice.

EADM 242. College Student Environment (3)
The characteristics and attitudes of traditional and non-traditional American college students and the effect of the college environment on students. Students will study the historical and contemporary characteristics of students, understand the characteristics and needs of various sub-populations, and research the effects of college and its environments on students.

EADM 243. Legal Issues in Higher Education Student Affairs (3)
Provides an overview of legal issues in American higher education, specifically those related to Student Affairs. This course is designed to ensure that students have the opportunity to learn basic legal principles necessary to function in an administrative or managerial capacity in post-secondary institutions. Administrative arrangements, policy issues, and case law will be reviewed and discussed.

EADM 244. Strategies Promoting Student Development (3)
This course is a dual study of theory and research pertaining to human learning and the design of effective learning environments. Attention will be given to an analysis of applications of college student development theories and models for practice for the design of programs to promote college student development and change.

EADM 245. Counseling Theories in College Student Affairs (3)
A critical and comprehensive study of current counseling theories and their application for student affairs practitioners.

EADM 246. Counseling Special Populations (3)
The course focuses on the study of counseling processes and techniques with student client populations that are ethnically and racially diverse. We will build on the skills that students learned in the basic counseling theories course taught in prior semesters. Students will explore theory and research beyond the contention that students of color may have different needs and experiences in counseling situations. We will also look at personal ethnic identity and how it affects the assumptions brought to counseling. Students will also learn what it means to be "culturally competent" in regard to counseling skills.

EADM 276. Seminar: Educational Planning, Delivery, and Assessment (3)
The role of the administrator as the instructional leader is the focus. Facets of the instructional program include curriculum planning, programmatic issues, delivery systems and assessment and evaluation.

EADM 277. Diversity and Constituency in Educational Administration (3)
Explores the values and concerns of the many diverse communities that constitute a school community. Effective ways to involve various communities in the participation of school life are presented.

EADM 278. Public School Organization and Administration (3)
Organization, administration and functioning of state, county and local school systems and their interrelations 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.

EADM 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.

EADM 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.

EADM 286. Administration of Human Resources (3)
Skills and techniques of employee selection, orientation, administration, supervision and evaluation; staff development activities; determining personnel need; employee organizations.

EADM 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, decision-making analysis and computers as a management tool.

EADM 290. Seminar: Computers in Educational Administration (3)
Techniques of computer utilization as a management tool in school site and central office administration.

EADM 291. Independent Graduate Study (1-3)
Graduate students may enroll in library research with consent of the department chair.

EADM 292a. Student Affairs Field Experiences (1-3)
Student Affairs Field Experience allows students to experience a variety of professional roles under the guidance of mentorship of a qualified Student Affairs or Higher Education

Administration practitioner. Field experience serves as a complement to students' classroom learning and integrates classroom theories and ideas with practical applications.

EADM 292. Field Experience in Administration and Supervision (1-4)
Experience in practical on-the-job administrative and supervisory functions at a school site. One unit over each of three semesters is required. Open only to administrative credential candidates at the University. *Prerequisite: Consent of the department or department chair.*

EADM 293. Special Topics (1-3)
Prerequisite: Consent of the department chair.

EADM 350B. Seminar: Social Scientific Thinking (3)
A doctoral core course that provides a meaningful theoretical context within which various methodologies and research designs may be better understood.

EADM 360. Seminar: Trends, Issues, and the Dynamics of Change (3)
Examines current issues and the impact of change in administration of educational programs.

EADM 361. Seminar: Ethics, Law, and Finance (3)
An examination of the relationships between ethics, law, and finance as each impacts upon administrating decision-making in educational institutions.

EADM 362. 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.

EADM 363. Seminar: Personnel Issues (3)
Personnel management, resource allocations, employee evaluation, collective bargaining, staffing, staff development, conflict mediation.

EADM 364. Seminar: Educational Policy-Making and Politics (3)
Issues and techniques relative to policy formulation and implementation are examined. The political, social and economic forces that impact policy decisions are emphasized.

EADM 365. Seminar: Administration of Higher Education (3)
A study of administrative, educational and personnel problems and issues in community colleges and four-year institutions.

EADM 366. Seminar: Communications and Public Relations in Education (3)
Techniques of effective communications in educational organizations are presented. Developing and maintaining positive public relations and public support for educational problems are emphasized.

EADM 367. Seminar: Cultural Diversity and Educational Administration (3)
Techniques for working with culturally diverse student, community and faculty populations.

EADM 368. Seminar: Administering Complex Educational Organizations (3)
An in-depth examination of the theories, issues, trends, and challenges of administering complex educational organizations.

EADM 369. Seminar: District Office Administration (3)
To provide an in-depth examination of the structure, functions, politics, and purpose of school district administration.

EADM 370. Professional Induction Planning (2)
Development of a collaborative professional induction plan to meet the requirements for the Professional Administrative Services Credential.

EADM 371. Professional Assessment (2)
A formal assessment of candidates for the Professional Administrative Services Credential.

EADM 391. Graduate Independent Study (1-3)

EADM 392. Internship and Advanced Field Experience in Administration (1-4)
Prerequisite: Consent of the department chair.

EADM 393 Special Topics (1-3)
Prerequisite: Consent of the department chair.

EADM 397A. Seminar: Qualifying Scholarly Activities (1)
A doctoral candidacy qualifying requirement to demonstrate competence in research and subject matter. Student will (a) identify a research area and level, (b) complete a scholarly annotated bibliography, (c) respond to a question in the form of a scholarly paper, and (d) orally defend the response to the question. *Prerequisite: Consent of the department chair.*

EADM 397B. Seminar: Doctoral Research in Educational Administration (3)
The goal of this semester is to have doctoral students develop an acceptable dissertation proposal. Faculty members will lead discussions, provide individual assistance, and collaborate on individual student progress with the aim of assisting the student in the proposal development process. The seminar will be divided into group sessions and individual meetings with student selected dissertation advisors. *Prerequisite: Consent of the department chair.*

EADM 399. Doctoral Dissertation (1-15)

Department of Educational and School Psychology

Professor: Webster (Chair)

Associate Professors: Hackett, Webster

EPSY 121x: Learner-Centered Concerns (3)
A general overview of stages in human development from birth to young adulthood, prominent learning and motivation theories, learner-centered principles of teaching and assessment, the characteristics of learners with exceptional needs, and individual differences among learners including English language learners. Taken by students interested in Multiple Subject, Single Subject and/or Educational Specialist credentials. This course is a prerequisite to Admission to Teacher Education, but it is open to all students at the University. Twenty hours of fieldwork in K-12 public schools is required, which also requires fingerprint review and clearance at local districts and TB test clearance. There are fees for these services.

EPSY 191. Independent Study (1-3)
Prerequisite: Consent of the department chair.

EPSY 201. Techniques of Research (3)
Study of the various research methodologies including qualitative, descriptive, causal-comparative, 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.

EPSY 214. Intermediate Statistics (3)
Not intended to be a first course in statistics. Review of descriptive statistics including correlation and probability; introduction to applied inferential statistics including t-test for means, tests for proportions, tests for correlations and ANOVA utilizing statistical computing software. Emphasis is placed on conceptual understanding to ensure students recognize the power as well as the limitations of statistical techniques.

EPSY 215. Individual Assessment (3)
Course emphasizes study of various theories/definitions of intelligence, academic achievement and personality as well as the methodological and societal factors related to the assessment of these constructs and learning-related behavior. Focus is on development of skills in recognizing when assessment is warranted and on the ability

to be the critical recipient of assessment data. Not a practicum course. *Prerequisite: Admission to school psychology program or consent of the instructor.*

EPSY 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: EPSY 121 or equivalent or consent of the instructor.*

EPSY 265. Counseling Theory and Skills (3)
Intensive study of current counseling theories, including concepts related to personality development and psychopathology, therapeutic roles and interventions. Not a practicum course. *Prerequisite: Admission to school psychology program or consent of the instructor.*

EPSY 266. History, Systems, and Indirect Interventions for the School Psychologist (3)
Principles of modern systems perspective applied to the delivery of pupil personnel services within the public school system. Course content includes history of PPS disciplines and introduces students to PPS program development and evaluation. Course is appropriate for persons anticipating educational administrative assignments as well as for departmental majors.

EPSY 268. Consultation Methods (3)
Various consultation methodologies will be studied with applications appropriate for a variety of organizational needs. *Prerequisite: EPSY 265. Admission to school psychology program or consent of the instructor.*

EPSY 269. California Law and Professional Ethics (1)
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.

EPSY 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.

EPSY 286. Child Abuse Counseling Issues (1)
Provides students of family therapy with an understanding of the nature of child abuse/molest and the dynamic implications for victims and perpetrators, reporting procedures and the law, as well as discussion of the manifestations of abuse in adulthood.

EPSY 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 dysfunction and therapy, current research on sexuality, varieties of sexual behavior and preference, and gender identity and gender role. *Prerequisite: Consent of the instructor.*

EPSY 288. Behavioral Intervention Strategies (3)
Designed primarily for graduate students enrolled in the Pupil Personnel Services credential programs in School Counseling and School Psychology. Course was designed to meet the CCTC required competencies for the PPS credential in School Counseling and School Psychology, but is appropriate for teachers. *Prerequisite: Admission to school psychology program or consent of the instructor.*

EPSY 291. Independent Graduate Study (1-3)
Prerequisite: Consent of the department chair.

EPSY 292a. Counseling Psychology Practicum (3)
Supervised experience with clients. Prerequisite for advanced counseling field experiences. *Prerequisite: EPSY 265.*

EPSY 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: EPSY 215 and consent of the instructor.*

EPSY 292c. School Counseling Field Experience (1-3)
Exploratory field experiences in elementary, middle and high schools, one unit at each level. *Prerequisite: consent of the instructor, CCTC Certificate of Clearance, and passage of CBEST.*

EPSY 293. Special Project (1-3)
Prerequisite: Consent of the department chair.

EPSY 294a. Counseling Psychology Fieldwork (1-2)
Supervised field experience for non-PPS credential and non-MFCC M.A. students. Settings chosen in keeping with graduate students' career/educational goals. To be taken in final semester(s) of degree program. *Prerequisite: Consent of the instructor.*

EPSY 294b. School Psychology Fieldwork (1-4)
Advanced supervised field placement in preschool and/or K-12 setting(s). Instructor consent required for selection field site/supervisor. *Prerequisites: EPSY 292b and consent of the instructor.*

EPSY 295a. Seminar: Emotional Disturbance in Children (3)
Exploration of theories and research related to the etiology and treatment of psychological disorders in children. Specific attention to family dysfunction, developmental processes, and child abuse as they relate to emotional adjustment and psychopathology in children. Discussion of the DSM-IV Childhood Disorders included.

EPSY 295i. Child Development Across Cultures (3)
Graduate level course in child development with emphasis on the inter-relationships among physical, psychosocial, and cognitive 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: EPSY 121 or consent of the instructor.*

EPSY 296a. Seminar: Group Counseling (3)
Seminar and practicum in the theories and techniques of group counseling. *Prerequisite: EPSY 292d or concurrent enrollment.*

EPSY 297. Graduate Research (1-3)
Graduate students with consent of the department chair.

EPSY 298c. School Counseling Internship (1-2)
Students will perform duties of a school counselor in multicultural school settings at a minimum of two school levels under the direct supervision of credentialed school counselors. *Prerequisites: EPSY 292c, consent of the instructor, and passage of CBEST.*

EPSY 299. Master's Thesis (4)

EPSY 320a. Seminar: Advanced Human Development - I (3)
This course, the first in a two-course sequence, focuses on the developmental periods of early and middle childhood. The course examines theoretical and research-based knowledge of the influences of biological, social, affective, cultural, ethnic, experiential, socioeconomic, gender-related, and linguistic factors in children's development. *Prerequisites: EPSY 295i and EPSY 220 or equivalent.*

EPSY 320b. Seminar: Advanced Human Development – II (3)
This course, the second in a two-course sequence, focuses on the developmental period of adolescence. *Prerequisites: EPSY 320a.*

EPSY 322a. Seminar: Applied Developmental Interventions for Diverse Populations - I (3)
This course explores various empirically validated applications of developmental principles to measurable outcomes of student learning, prevention of school failure and serious personal difficulties, promotion of wellness, and crisis intervention. The course is the first in a two-part sequence, and it should be taken in conjunction with the final internship. *Prerequisites: EPSY 320a and EPSY 320b.*

EPSY 322b. Seminar: Applied Developmental Interventions for Diverse Populations - II (3)
This course is the second in a two-part sequence intended for doctoral-level school psychologists. The course provides students with opportunities to apply relevant theoretical and empirical knowledge in the design of effective program and systems interventions in public schools. *Prerequisites: EPSY 320a, EPSY 320b, and EPSY 322a.*

EPSY 324 Seminar: Advanced Consultation and Supervision (3)
This course provides doctoral students with advanced training in and exposure to effective models of collaboration and supervision, with an emphasis on systems-level change with diverse populations in public schools. *Prerequisites: EPSY 268 or equivalent course.*

EPSY 391. Graduate Independent Study (1-3)
Doctoral students with consent of the department chair.

EPSY 392a. Counseling Psychology Practicum (3)
Advanced pre-internship supervised experience with clients. *Prerequisite: EPSY 292a.*

EPSY 392b. School Psychology Practicum (1)
Supervised practicum in assessment. *Prerequisites: EPSY 292a, b. Consent of the instructor*.

EPSY 393. Special Topics (1-3)

EPSY 395c. Quantitative Research Design and Methods (3)
This course exposes students to and develops their ability to conceptualize a broader range of research questions dealing with (a) significance of group differences; (b) degree of relationship among variables; (c) prediction of group membership; and/or (d) structure that quantitative design and analysis strategies might inform than those typically introduced in a first course (e.g., EPSY 201). Topics emphasized in the course relate to (a) the purpose and principles of research design; (b) the use of multivariate approaches and analysis; and (c) the construction and validation of measuring instruments. *Prerequisites: EPSY 214.*

EPSY 395e. Advanced Statistical Methods (3)
This course acquaints the student with the use of the general linear model as a data analytic tool. Students learn how to generate and interpret output produced by SPSS statistical software in conducting a) multiple regression analyses involving both continuous and categorical independent variables; b) logistic regression analyses involving categorical dependent variables; c) structural equation modeling; and d) other multivariate techniques. *Prerequisites: EPSY 214.*

EPSY 395j. Seminar: Promoting Cultural Competence Across Systems (3)
This course is designed to provide the doctoral student with advanced training in and exposure to effective models of promoting cultural competence in public schools, with an emphasis on systems-level change with diverse populations.

EPSY 395m. Measurement and Theory and Practice (3)
This course is designed to solidify students' understanding of classical test theory and introduce them to modern test theory, including Item Response Theory. *Prerequisites: EPSY 204 and EPSY 215 or equivalent.*

EPSY 397. Graduate Research (1-3)
Doctoral students with the consent of the department chair.

EPSY 398a. Counseling Psychology Internship (1-4)
Registration is reserved for advanced doctoral students in counseling psychology. Students work under the supervision of a licensed therapist in a field placement approved by the instructor. *Prerequisites: EPSY 392a and consent of the instructor.*

EPSY 398b. School Psychology Internship (2-3)
Student will perform duties of a school psychologist in multicultural school settings at both elementary and secondary levels under the direct supervision of a credentialed school psychologist. Placement must be half- or full-time. *Prerequisites: EPSY 392b. Students must have an intern credential and permission of the instructor before beginning an internship.*

EPSY 399. Doctoral Dissertation (1-15)

Educational Resource Center

Director: Cooper

Instructors: Evans, Pitcher

MATH 1. Pre-algebra (3)
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. The course credit does not apply toward graduation. *Prerequisites: appropriate score on the Mathematics Placement Test and permission of the instructor.*

MATH 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. This course is taught using a Personalized System of Instruction. This course is inappropriate for students who have passed the Elementary Algebra placement exam or any higher level placement exam. Course credit does not apply toward graduation. *Prerequisites: a grade of C- or better in MATH 1 or an appropriate score on the Mathematics Placement Test and permission of the instructor.*

MATH 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. This course is taught using a Personalized System of Instruction. Students who complete MATH 5 and 7 may enroll in Calculus (MATH 51). *Prerequisites: a grade of C- or better in MATH 3 or an appropriate score on the Mathematics Placement Test and permission of the instructor.*

MATH 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 hours per week. (Students who complete MATH 5 and 7 may enroll in Calculus MATH 51). *Prerequisites: A grade of C- or better in MATH 5 or an appropriate score on the Mathematics Placement Test and permission of the instructor.*

ESL 9. Intermediate ESL: Pronunciation, Speaking and Listening (3)
Intermediate level skills in speaking and listening comprehension will be the focus, 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.

ESL 10. Intermediate ESL: Writing and Grammar (3)
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 modals and clause structure, writing paragraphs, compositions, and journal entries will be introduced. Placement in this course is on the basis of ESL testing. Pass/No credit (P/NC) grading option is not allowed for this course.

ESL 13. Advanced ESL: Reading and Grammar Development (3)
Reading for comprehension, related study skills and vocabulary expansion with particular attention paid to grammatical forms used in readings. Selections will help prepare students for textbook and journal article reading at the college level. A variety of topics common to a general education curriculum will be covered. Pass/No credit (P/NC) grading option is not allowed for this course.

ESL 15. Advanced ESL: Writing and Grammar Development (3)
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. Placement in this course is on the basis of ESL testing or prerequisite of ESL 10 or equivalent. Pass/No credit (P/NC) grading option is not allowed for this course.

WRIT 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. Pass/No credit (P/NC) grading option is not allowed for this course.

WRIT 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. Pass/No credit (P/NC) grading option is not allowed for this course.

WRIT 21. Writing for College (3)
Introduction to the types of written assignments required in college courses, including the research paper, expository writing and argumentation. Weekly writing assignments and individual conferences with instructor. Placement on the basis of writing competency test results. Pass/No credit (P/NC) grading option is not allowed for this course.

ESL 23. Advanced ESL: Speaking and Pronunciation (2)
The pronunciation, rhythm, stress and intonation of American English will be studies and practiced, as well as skills needed for academic discussion. Students will receive help in improving pronunciation of sounds.

ESL 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.

READ 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. Placement on the basis of basic skills reading test. Pass/No credit (P/NC) grading option is not allowed for this course.

READ 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.

READ 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.

READ 91. Individually Prescribed Study (1-3)
Development of specific thinking, organization and communication skills as determined through individual assessment and prescription.

READ 93. Special Projects (1-3)
Prerequisite: Consent of the instructor.

Gladys L. Benerd School of Education Faculty

Lynn Beck, 2005, Dean and Professor of Education, B.A., Belhaven College, 1974; M.A., University of Mississippi, 1976; Ph.D., Vanderbuilt University, 1991.

Harriett Arnold, 1994, Associate Professor of Education, B.A., San Francisco State College, 1968; M.A., San Jose State University, 1974; Ed.D., University of San Francisco, 1984.

Norena Norton Badway, 2003, Associate Professor of Education, B.A., University of Missouri, 1969; M.A., University of the Pacific, 1986; Ph.D., University of California, Berkeley, 1998.

Dennis Brennan, 1980, Assistant Dean and Associate Professor of Education, B.S., Clarion State College, 1966; M.Ed., University of Pittsburgh, 1970; Ph.D., 1978.

Ruth V. Brittin, 1998, Associate Professor of Education, Ph.D., Florida State University, 1989.

Kellie Cain, 2002, Assistant Director of Field Experiences, Assistant Professor, B.A., University of California, Davis, 1987; M.A., University of the Pacific, 1999; Ed.D., 2005.

Lisa M. Cooper, 2005, Director of the Educational Resource Center, Instructor of Education, B.A., Goucher College, 1988; M.S., Villanova University, 1993; M.A., Marymount University, 1999.

Marilyn E. Draheim, 1986, Associate Professor of Education, B.A., Luther College, 1972; M.A., University of Iowa, 1974; Ed.S., 1974; Ph.D., University of California, Berkeley, 1986.

Michael Elium, 2004, Associate Professor of Education, B.A., Appalchian State University, 1975; M.A., 1975; Ed.D., University of Alabama, Tuscaloosa, 1983.

Susan W. Eskridge, 1989, Associate Professor of Education, B.S., Old Dominion University, 1973; M.S., 1977; Ed.D., University of Virginia, 1989.

Scott Evans, 1990, Instructor of Education, B.A., California State University, Sonoma, 1976; M.A., University of California, Davis, 1980.

Ann L. Go, 2005, Assistant Professor of Education, B.A., California State University, Sacramento, 1989; M.A., 1993; Ph.D., University of California, Davis, 2003.

Rachelle Hackett, 1994, Associate Professor of Education, B.A., California State University, Fresno, 1982; M.S., Stanford University, 1986; Ph.D., 1994.

Fred Muskal, 1970, Professor of Education, B.A., Roosevelt University, 1962; M.A., 1964; Ph.D., University of Chicago, 1975.

John M. Nagle, 2000, Professor of Education, B.A., Hamilton College, 1962; M.A.T., Harvard University, 1963; Ph.D., University of Pittsburg, 1969.

Thomas G. Nelson, 1995, Assistant Professor of Education, B.A., California State University, Northridge, 1975; M.A., California State University, Sacramento, 1988; Ph.D., University of Arizona, 1993.

Robert Oprandy, 2002, Professor of Education, B.A., Rutgers University, 1969; M.A., Teachers College, Columbia University, 1977; M.Ed., 1979; Ed.D., 1988.

Andrew Pitcher, 2003, Instructor of Education, B.S., University of the Pacific, 2000; M.A., University of California, Davis, 2002.

Gregory R. Potter, 2002, Assistant Professor of Education, A.B., University of California, Davis, 1992; M.S., 1996; Ph.D., 2000.

Claudia W. Schwartz, 1987, Director of Field Experiences, Instructor of Education, B.A., University of the Pacific, 1974; M.A., 1981.

Vivian Snyder, 1993, Associate Dean, Associate Professor of Education, B.S., 1968; M.S., 1971; Ph.D., 1982; Southern Illinois University.

Heidi J. Stevenson, 2004, Assistant Professor of Education, B.A., University of California, Davis, 1995; M.A., Chapman University, 2001; Ed.D., University of California, Santa Barbara, 2004.

Linda Webster, 1996, Associate Professor of Education, B.A., California State University, Fresno, 1981; M.A., University of California, Berkeley, 1984; Ph.D., 1988.

school of engineering and computer science

Dean:
Ravi Jain

School Telephone:
209.946.2151

Website
www.pacific.edu/eng

Contents

Mission

The mission of the School of Engineering and Computer Science is to provide a superior, student-centered learning environment which emphasizes close faculty-student interaction, experiential education, and distinctive research opportunities. Graduates will be prepared to excel as professionals, pursue advanced degrees, and possess the technical knowledge, critical thinking skills, creativity, and ethical values needed to lead the development and application of technology for bettering society and sustaining the world environment.

Engineering

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. They are agents through whom science influences our society.

At the School of Engineering and Computer Science, engineers must develop dual competencies - technical and social. They must understand the principles of science as well as the nature of human needs and behavior and the impact of technology on society. The modern engineer deals with socially relevant matters including pollution, energy resources, sustainability, health care and public transportation systems. 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.

The Engineering Program at University of the Pacific consists of three well-integrated parts:

1) Mathematics, natural sciences and a broad range of courses in the humanities and social sciences;

2) Engineering courses, which provide the specialized training for professional competence in engineering;

3) On-the-job experience in the Cooperative Education (Co-op) Program described below. Through this threefold program, theory and practice are brought together; 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 backgrounds.

Computer Science

The Computer Science Department provides undergraduate education in computer science which features current and emerging technologies and experiential learning. Currently students may select from two paths, as follows.

1. Computer Science Path within the Computer Science Major.

   The Computer Science major provides an undergraduate education leading to a B.S. in Computer Science. It features a core computer science curriculum providing a foundation in the field, with several elective tracks enabling students to customize their coursework according to their interests. This quality curriculum prepares students to contribute to the computing profession upon graduation and provides the necessary background for graduate study.

Learning objectives for students in the Computer Science path cover the areas of theory and persistent concepts, software design and analysis, teamwork and communication, experiential and independent learning, and social and ethical issues.

2. Bioinformatics Path within the Computer Science Major.

   This option provides an undergraduate education leading to a B.S. in Computer Science, and features a curriculum consisting of a core of computer science courses, plus a

selection of interdisciplinary science and math courses. This curriculum is designed to prepare the student for a successful career in research, medicine, or professional practice in the bioinformatics professions.

Learning objectives for the Bioinformatics path are to provide the student with a strong foundation in multiple disciplines, including biology, chemistry, mathematics, and computer science; expertise in using computer applications to analyze data; proficiency in designing algorithms and coding applications to solve problems; and an understanding of the role of public domain databases as the media in which this field is developing.

Degrees in Engineering and Computer Science

The School of Engineering and Computer Science offers nine undergraduate degree programs: Bioengineering, Civil, Computer, Electrical, and Mechanical Engineering, Engineering Management, Engineering Physics, and Computer Science. The curricula are divided into lower-division and upper-division segments.

The lower-division engineering curriculum 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.

The Computer Science Department offers two paths leading to a B.S. degree in Computer Science, the Computer Science path and the Bioinformatics path. A minor program is also available.

The lower-division curriculum for the Computer Science path stresses mathematics, science and computer science fundamentals such as programming, and data structures. The upper-division explores advanced topics such as the theory of computation, the theory of algorithms, and systems analysis and design. The student is encouraged to select one of five tracks consisting of advanced course work. The available tracks are Networking and Computer Security, Computer Games and Simulation, Application Development, Computational Biology, and Mathematics.

The Bioinformatics path includes a core of computer science fundamentals such as programming, data structures, and algorithms. This core is combined with substantial coursework in biology, chemistry, and mathematics to provide students with a background appropriate for professional work, or continued study in bioinformatics, medicine, dentistry, or pharmacy.

Accreditation

Civil, Computer, Electrical, Engineering Management, Mechanical Engineering and Engineering Physics are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology Inc., the nationally recognized accrediting body for engineering curricula. The Computer Science path leading to a BS degree in Computer Science is accredited by the Computing Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc., There is currently no mechanism for accrediting bioinformatics programs, so the bioinformatics path leading to a BS degree in Computer Science is currently unaccredited.

Computer Science Industry Fellowship

Qualified sophomores in the Computer Science Department can apply for fellowships at Lawrence Livermore National Lab (LLNL) or Sandia National Lab (SNL) that begin in the summer after the sophomore year and continue the following summer. Applicants must have an overall GPA of 3.0, a GPA in CS of 3.0, must be willing to commit to two consecutive summer co-op assignments at LLNL or SNL and must be U.S. citizens.

Engineering Industry Fellowship Program (EIF)

The Engineering Industry Fellowship Program (EIF) is a dual-purpose partnership between industry and the University of the Pacific School of Engineering and Computer Science. It provides student fellows with a quality education, optimal training for success in the workplace, and relevant work experience with a major industry. It also provides industry with a means of establishing a five-year mentoring/employment relationship with a top-notch student, the opportunity to groom a possible long-term future employee, and increased visibility on campus.

EIF's are based on good-faith agreements between industry, the University, and student fellows while they pursue their degrees in engineering at Pacific. Student fellows receive paid summer internships, two paid co-op assignments, $2,000 per year in additional scholarship funding, and an industry mentor from their sponsoring company. The student fellow agrees to maintain high academic achievement and to perform satisfactorily on the job.

Engineering Tuition

Engineering at Pacific is a five-year program with a mandatory Cooperative Education component. During the first two years of the program, the student's fee structure is identical to the University's. Overall tuition costs as shown elsewhere in this General Catalog apply, plus any additional costs of summer school tuition.

During the last three years of the program, the students are required to complete two Cooperative Education periods, including one summer term, for which they are billed one-half semester tuition with each placement. During the last three years the students also attend two academic summer terms at no additional tuition. (See Cooperative Education Schedule). Therefore it is essential that any student who plans to participate in the Co-op Program completes the application for tuition remission at the earliest possible date. Applications are available in the Co-op Office.

Cooperative Education

Cooperative Education is an integral part of the engineering curriculum at University of the Pacific. Computer Science students may elect either a co-op experience, an undergraduate research experience or the senior project program under the direction of the project coordinator.

Engineering students alternate between terms in the classroom and periods of full-time, paid professional practice. Computer science students who elect a co-op experience spend at least one summer in their placements. The co-op program is coordinated through the School of Engineering and Computer Science 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 or computing degree program by relating theory to practice. During 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.

The Cooperative Education Program is required for students graduating with a BS in Engineering. There are two exceptions to this requirement. 1) Because their study abroad experience qualifies as a significant "experiential learning" component of their education, non-citizens of the U.S. are not required to participate in Co-op, although they are encouraged to do so. Students who are non-citizens of the U.S. that elect not to participate in the Co-op must complete a Petition for Co-op Waiver for Non-U.S. Citizens and submit it to the Co-op Office in the School of Engineering and

Computer Science. 2) Students who have prior work experience in engineering may file a petition for equivalent Co-op credit prior to the end of their second semester on campus. Approval of the petition rests with the Co-op Director, the student's faculty adviser, and the Dean of the School of Engineering and Computer Science. For more information, contact the Co-op Office at (209)946-2151.

Students must be in residence at Pacific 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. Successful Co-op placements depend on many factors. Students are expected 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 resumés, developing interviewing skills and seeking appropriate placement. Given this level of cooperation by the student, the School of Engineering and Computer Science guarantees all such students Co-op placements.

All lower-division courses, as well as Fundamental Skills requirements must be completed before a student is eligible for the Co-op Program. All students must complete their Co-op requirement prior to the final semester of courses. A minimum of seven units must be completed after the final Co-op experience. At least three of the seven units must be from their major area.

If a student receives financial aid, income from Cooperative Education employment may affect the amount of financial assistance a student receives during each employment period.

Student Organizations

All students are encouraged to actively participate in a professional society appropriate to their major.

National Honor Societies

- Tau Beta Pi (Engineering Honor Society - all engineering majors)
- Eta Kappa Nu (Honor Society for Electrical, Computer Engineering, Engineering Physics majors)

Student Affiliates of Professional Organizations

- American Society of Civil Engineers (ASCE)
- American Society for Engineering Management (ASEM)
- American Society of Mechanical Engineers (ASME)
- Association of Computing Machinery (ACM)
- Institute of Electrical and Electronic Engineers (IEEE)
- National Society of Black Engineers (NSBE)
- Society of Hispanic Professional Engineers (SHPE)
- Society of Women Engineers (SWE)
- Society of Automotive Engineers (SAE)

Campus Clubs and Organizations

- Associated Engineering Students (AES)
- Associated Students of Engineering Management (ASEM)
- Biomedical Engineering Society (BMES)
- Engineers Without Borders

Pacific MESA Center

The Pacific Mathematics, Engineering and Science Achievement (MESA) Center is the home of two programs: The MESA Schools Program (MSP) and the Multicultural Engineering Program (MEP).

Both programs serve educationally disadvantaged students who have traditionally not entered math and science-based professions. MSP provides hands-on math and science activities, academic enrichment, academic and college advising, and professional exposure to students in grades 4-12. It serves more than 1,200 students. Specific MEP goals are to increase matriculation, retention, and graduation rates of the students enrolled in the School of Engineering and Computer Science. MEP seeks to fulfill the above goals through collaborations and partnerships with an Industrial Advisory Board, three student chapters of related professional organizations, the National Consortium for Minority Engineering Students Pursuing a Graduate Degree (GEM), the National Association for Minority Engineering Program Administrators (NAMEPA), and the National Action Council for Minorities in Engineering (NACME).

Pacific MESA Center activities and support features include: pre-college outreach, financial aid (scholarships), career fairs, awards banquets, hands-on math and science workshops, enhanced advising and counseling, tutoring, motivational seminars, Saturday and summer programs, and a student study center.

General Education Requirements for Engineering Programs

The general education requirements for engineering students are as follows: all entering freshmen must take Pacific Seminar I-What is a Good Society?, and Pacific Seminar II-Topical Seminars on a Good Society. As seniors they must take Pacific Seminar III. In addition, they must take a total of four courses: two each from Category I-The Individual and Society and Category II-Human Heritage. Only one class can come from each subdivision (A, B or C) within each category. These courses must be selected to allow the student to gain the broad education necessary to understand the societal impact of engineering and technology. The student's adviser will assist in the selection of courses.

Students may satisfy up to two of their general education course requirements with a minimum score of "4" on relevant Advanced Placement (AP) tests. (Students may also satisfy any math and select science requirements with a minimum score of "3" on relevant tests.)

General Education Requirements for Computer Science Programs

The general education requirements for students in the Computer Science or Bioinformatics paths are as follows: all entering freshmen must take Pacific Seminar I-What is a Good Society? and Pacific Seminar II-Topical Seminars on a Good Society. All students must take Pacific Seminar III, The Ethics of Family, Work, and Citizenship. Each student must take five additional courses. These courses must be chosen from Category I (The Individual and Society) and Category II (Human Heritage), each in a different area. Category III is fulfilled by courses required by the major. Course units from the Pacific Seminars and categories I and II must total 30 units. The student's adviser will assist in the selection of courses.

Students may satisfy up to two of their general education course requirements with a minimum score of "4" on relevant Advanced Placement (AP) tests. (Students may also satisfy any math and science requirements with a minimum score of "4" on relevant AP tests.)

Core Curriculum

Each engineering program includes the following core courses:

General Education (minimum of 25 units)
- PACS I, II, III
- ENGL 105
- Electives (4)

Math/Science (31 units)
- MATH 51, 53, 55, 57
- PHYS 53, 55
- CHEM 25

General Engineering (7 units)
- ENGR 5, 20, 25

The Computer Science core courses are described in the description of the department curriculum.

Community College Transfers

The School of Engineering and Computer Science subscribes to the "Common Core" lower-division transfer program of the California State Engineering Liaison Committee (ELC). This agreement applies only to engineering majors, not to computer science majors.

Lower-Division Curriculum

(Adopted by ELC - October 23, 1998)

Subject Area	Semester Units
Mathematics	16
Chemistry	5
Physics	8
Statics	3-4
Engineering Graphics w/CADD	2-3
Computer Programming	3
Introduction to Engineering	1-2
Properties of Materials	4
EE Fundamentals	3-4
General Education	18

Additional courses depend on the specific program of study. Students should consult with their faculty adviser.

Based on the most recent requirements of the ELC, any student from a California community college with a stated major in engineering, who presents a transcript showing satisfactory completion of the above 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 requirements for the bachelor's degree in two additional years plus 12 months of Cooperative Education employment, which means that he or 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 and Computer Science at any point in their academic program. It is important that each student contact the appropriate Engineering Department at Pacific as early as possible and arrange for faculty assistance in planning his or her transfer.

The Computer Science Department makes every effort to accommodate the needs of transfer students. Faculty offer advice on programs of study prior to coming to the University and then match student backgrounds with program requirements. Students are encouraged to complete an introductory object-oriented programming course (C++ or Java) and courses in mathematics and science prior to entering the program.

Typical First-Year Computer Science Path Curriculum

Fall:	Computer Science I
	Calculus I
	Pacific Seminar I
	First of two course sequence in physics, chemistry, biology, or geology
Spring:	Computer Science II
	COMP 5 Freshman Seminar
	Calculus II
	Second of two course sequence in physics, chemistry, biology, or geology
	Pacific Seminar II

Typical First-Year Bioinformatiocs Path Curriculum

Fall:	Computer Science I
	Calculus I
	Pacific Seminar I
	Principles of Biology I
Spring:	Computer Science II
	COMP 5 Freshman Seminar
	Calculus II
	Principles of Biology II
	Pacific Seminar II

Transfer General Education

The School of Engineering and Computer Science will accept the transfer general education program from any community college. In some instances, one additional class may be required. All students must take Pacific Seminar III during their senior year. Computer Science students will also take a 1-unit course in computer ethics.

General Academic Policies

Engineering Prerequisite Requirement

All engineering course prerequisites must be passed with a C- or higher grade.

Computer Science Prerequisite Requirement

Only Computer Science courses passed with a grade of C or better meet prerequisite requirements for courses offered in the Computer Science Department.

Courses Taken Pass/No Credit

A student may request to register for one (1) general education course per semester on a Pass/No Credit basis in either Category I or II of the general education program by filing the completed Pass/No Credit form in the Office of the Registrar before the deadline established by the Office of the Registrar (approximately the end of the second week of classes). This petition must include the approval of the professor teaching the course and the student's adviser. A maximum of 16 Pass/No Credit units may be applied to meet the GE degree requirements. All other classes, including Technical Writing, Independent Studies and the basic science or mathematics elective classes, must be taken for a letter grade.

Independent Studies

Students who have an interest in a subject not offered as a regular course and who, by their overall performance at Pacific, have proven their ability to do independent work, may consider enrolling in an independent study. The qualified student should initiate discussions with his/her adviser and with a professor who is knowledgeable in the subject. If both parties are in agreement, the student must complete the Independent Study Form and submit it to the instructor before the end of the third week of classes. If the independent study is to be used to meet a general education requirement, it must also have the approval of the Department's General Education Coordinator. Students on academic probation are not permitted to enroll in independent study courses in any department of the University. The following School of Engineering and Computer Science policies apply:

1. The course(s) may not be substituted for a regularly scheduled course unless approved by the department.
2. If the course is to be used as an elective, approval by the student's adviser and the department chairperson is required.

3. All courses must be taken for a letter grade; the pass/no credit option is not allowed for independent study courses.
4. Only one independent study course may be taken per term.
5. Each course may be taken for one (1), two (2), three (3), or four (4) units. The unit value for the course will be established between the student and the professor responsible for the course. The student's adviser should be informed of this decision.
6. A maximum of eight (8) units of independent study may be used to satisfy graduation requirements.

Course Substitutions

The substitution of course(s) from the printed major program is discouraged. When extenuating circumstances warrant consideration, the student should meet with his/her adviser, and the final decision must have the approval of the department chair. Consideration should be given to the source of the problem (school, student, etc.), severity of the hardship case, and what the department considers best for the individual.

If a course substitution is allowed, ABET guidelines must be followed and the substitute course must be of the same or greater unit value, and in the same academic area.

Maximum Summer Course Load and Credits

The maximum number of classes, excluding physical activity courses, that an engineering or computer science student may register for during any period of the summer program is three (3). The total academic units accumulated through any combination of the three summer sessions shall not exceed 14 units. Additional units must be petitioned through the School of Engineering and Computer Science Academic Standards Committee and if approved, the student will be charged at the summer school overload tuition rate for all credits over 14 units.

Fundamental Skills Requirement

Students are required to satisfy all the University Fundamental Skills Requirements (i.e., Writing, Mathematics, and Reading) prior to enrolling in any upper-division engineering or computer science courses.

Graduation Requirements (Engineering Majors)

It is important that each student carefully monitor his or her academic program. Each student is expected to consult regularly with his or her 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 and the Director of Cooperative Education.

In order to graduate, students must meet the following requirements:

1. Successful completion of all courses required in the student's major, totaling at least 128 units.
2. Successful completion of 50 Cooperative Education credits and the Professional Practice Seminar.
3. An overall GPA of at least 2.0.
4. A GPA of at least 2.0 for all engineering courses completed at Pacific.
5. Engineering Management students must have at least a 2.0 GPA in their business/management classes.
6. Submission of application for graduation to the Office of the Registrar. Refer to the Academic Regulations section of the catalog.
7. No physical education or continuing education units may be counted toward graduation.

Graduation Requirements (Computer Science Majors)

1. Successful completion of all courses required in the student's major, totaling at least 124 units.
2. Successful completion of an experiential learning component as described above.
3. An overall GPA of at least 2.0.
4. A GPA of at least 2.0 for all major courses, including cognates, completed at Pacific.
5. Submission of application for graduation to the Office of the Registrar. Refer to the Academic Regulations section of the catalog.

Limitation on obtaining two degrees

The SOECS, in conjunction with the Office of the Registrar, will approve the student receiving a second bachelor of science degree subject to the following conditions:

1. The student must meet all requirements for each degree and must file a study plan, approved by his/her adviser, with the Office of the Registrar.
2. Courses required in one major may not be used as electives in the second major.
3. The pursuit of a double major is not a valid reason for waiving any SOECS or University requirements.

Accelerated Engineering Program Scholars (AEP)

High-achieving prospective engineering students can apply for the Accelerated Engineering Program (AEP), which allows students to complete a four-year engineering degree, plus a full year of Cooperative Education in four academic years, including the summers before the sophomore, junior, and senior years.

Admission to this program requires:

1. Minimum SAT score of 1350.
2. Minimum high school grade point average of 3.5.
3. Completion of college credit for Calculus I and at least one other college class prior to the freshman fall semester (e.g., through Advanced Placement Testing).

AEP Scholars should understand that this is an extremely fast-paced, rigorous program designed for the high-achieving student who is willing to forego some aspects of student life for the sake of increased academic intensity. AEP Scholars will be recognized on their transcripts and at commencement. AEP Scholars will also be given priority consideration for such distinguished academic opportunities as undergraduate research programs.

For more information, contact Dr. Gary Martin at (209) 946-3064 or gmartin@pacific.edu.

Bioengineering

The educational objectives of the bioengineering degree program are:

1. Our graduates will have a thorough foundation in engineering, and relevant knowledge of life sciences and ethical issues, that enables a successful career in bioengineering amid future technological changes.
2. Our graduates will be qualified to (a) practice as an engineer in both traditional and emerging technologies, (b) pursue advanced study in bioengineering, and/or (c) gain admission to professional schools (e.g. MD, DVM, DDS).
3. Our graduates will have a breadth and depth of experiences, both academic and extracurricular, to enable them to develop their leadership skills, including the ability to communicate effectively in a multidisciplinary setting.
4. Our graduates will have an inherent advantage in understanding the significance of and participating in future technological advances.

5. Our graduates will have the skills and ability to work on interdisciplinary or cross-functional teams.

Bioengineering Program

Core (See pg. 181)
Math/Science
BIOL 51, 61
CHEM 27
MATH 39
General Engineering
BENG 5, ENGR 15, ENGR 45, ENGR 120
Computer Science
COMP 51
Electrical/Computer Engineering
ECPE 41/41L, 71/71L
BENG 195
Electives (8)

Civil Engineering

The University of the Pacific Department of Civil Engineering seeks to develop graduates who have the knowledge, skills, and qualities required for graduate-level studies, professional licensure, and leadership in the civil engineering profession. The Civil Engineering program has the following objectives:

Graduates of the program must-have:

1) Technical **knowledge** necessary to analyze and solve open-ended problems in Construction Engineering, Environmental Engineering, Structural Engineering, and Water Resources Engineering

2) **Skills** appropriate to the practice of civil engineering in today's world

3) **Qualities**, such as a desire for continued learning and a commitment to ethical practices, which will ultimately make them solid engineering professionals.

Civil Engineering Program

Core (p. 181)
Math/Science
Math Elective
Science Elective (GEOS 51 recommended)
General Engineering
ENGR 15, 45, 120, 121, and 122 or ECPE 41/41L
Civil Engineering
CIVL 19, 22, 100, 130, 132, 133, 140, 167, 180
CIVL Electives (1-3)
CIVL Design I, II
Engineering Management
EMGT 170 (formerly listed as CIVL 170)

Computer Engineering/ Electrical Engineering

The objectives of the Computer Engineering and the Electrical Engineering Department are:

1. To meet the standards established by accrediting agencies and expected by employers and graduate schools.
2. To prepare computer engineers and electrical engineers with a level of competence in the science and technology of engineering so that they can be contributing members of a team, able to solve real problems with real constraints to meet real needs.
3. To instill an ability to continue learning in order to keep abreast of the rapidly changing field of engineering.
4. To provide an understanding of the constraints placed by the economy, the environment and society on the practice of engineering.
5. To instill an appreciation of the profession of engineering and an understanding of the value of professional organizations.
6. To maintain an environment in which faculty can provide innovative, effective teaching, can pursue scholarly interests in order to keep vital and can be of service to meet the needs of the University and the community.

Computer Engineering Program (BSCpE) Objectives and Outcomes

Graduates of the BSCpE degree program will be prepared to build and sustain successful careers in computer engineering, and actively engage in life-long learning. Upon graduation, they will:

1. Be able to write software and design computer systems according to given specifications by application of mathematics and the fundamentals of science and engineering.
2. Be able to design software and computer systems to meet specifications, with appropriate consideration of safety, the ecology and economics, while working individually or in teams.
3. Be able to select and apply standard tools to perform analysis, design and documentation in a professional manner.
4. Be able to design and apply a process to meet specific needs, analyze acquired data, and present results in a clear and useful manner.
5. Be able to integrate knowledge of math, science, engineering, humanities and social sciences in meeting the needs of society.
6. Be able to communicate effectively in both spoken and written forms.
7. Demonstrate the ability to participate in professional organizations and continued learning to update their knowledge and skills, and demonstrate a knowledge of professional and contemporary societal issues.
8. Have knowledge of the history and development of their profession and of the impact it has had in global and societal contexts.
9. Have clearly defined career objectives, and be able to market themselves via an effective, professional resume and behavior-based interview techniques.
10. Have knowledge of common elements, demands and expectations of the engineering workplace, and of the basic tenets of professional behavior, including time management, ethical decision making, and principles of leadership.

All Computer Engineering students must successfully pass the Computer Engineering Core Assessment Exam as a prerequisite for ECPE 196 – Senior Project II. The objective of the Core Assessment Exam is to ensure that all graduating Computer Engineering students have a satisfactory level of knowledge of fundamental concepts of their major.

Computer Engineering Program

Core (See pg. 181)
Math/Science
Math Elective
General Engineering
Computer Science
COMP 51, 53, 157
Electrical/Computer Engineering
ECPE 5, 41/L, 71/L, 121, 127, 131/L, 173, 174, 175, 176, 195, 196
Electives (5)

Electrical Engineering Program (BSEE) Objectives and Outcomes

Graduates of the BSEE degree program will be prepared to build and sustain successful careers in electrical engineering, and actively engage in life-long learning. Upon graduation, they will:

1. Be able to analyze devices, circuits and systems by application of mathematics and the fundamentals of science and engineering.
2. Be able to design devices, circuits and systems to meet specifications, with appropriate consideration of safety, the ecology and economics, while working individually or in teams.
3. Be able to select and apply standard tools to perform analysis, design and documentation in a professional manner.

4. Be able to design and apply a measurement system or process to meet specific needs, analyze acquired data, and present results in a clear and useful manner.
5. Be able to integrate knowledge of math, science, engineering, humanities and social sciences in meeting needs of society.
6. Be able to communicate effectively in both spoken and written forms.
7. Demonstrate the ability to participate in professional organizations and continued learning to update their knowledge and skills, and demonstrate a knowledge of professional and contemporary societal issues.
8. Have knowledge of the history and development of their profession and of the impact it has had in global and societal contexts.
9. Have clearly defined career objectives, and be able to market themselves via an effective, professional resume and behavior-based interview techniques.
10. Have knowledge of common elements, demands and expectations of the engineering workplace, and of the basic tenets of professional behavior, including time management, ethical decision making, and principles of leadership.

All Electrical Engineering students must successfully pass the Electrical Engineering Core Assessment Exam as a prerequisite for ECPE 196 – Senior Project II. The objective of the Core Assessment Exam is to ensure that all graduating Electrical Engineering students have a satisfactory level of knowledge of fundamental concepts of their major.

Electrical Engineering Program

Core (See p. 181)

Math/Science
- Math Elective
- PHYS 161

General Engineering

Computer Science
- COMP 51, Elective

Electrical/Computer Engineering
- ECPE 5, 41/L, 71/L, 121, 125 or 172, 127, 131/L, 141, 144 (or PHYS 101), 195, 196

Electives (5)

Mechanical Engineering

Program Educational Objectives

Mechanical Engineering graduates will demonstrate:

- competency in their engineering careers and profession;
- adaptability to changes in science and technology;
- awareness of humanistic and societal issues;
- and the ability to communicate on technical and non-technical levels.

Students who are U.S. citizens are required to possess one year of engineering work experience by participating in the Co-op program. The Mechanical Engineering program strives to meet standards established by the Accreditation Board for Engineering and Technology (ABET).

Mechanical Engineering Program

Core (See pg. 181)

Math/Science
- Math or Science Elective

General Engineering
- ENGR 15, 45, 120, 121, 122, CIVL 130
- ENGR 79/L or ECPE 41/L

Mechanical Engineering
- MECH 19, 100, 110, 120, 125, 129, 140, 141, 150, 157, 175

Electives (3)

Engineering Management

The Bachelor of Science in Engineering Management provides academic preparation for individuals who plan a systems engineering, project management or management career in a technically related field. Pacific graduates from this program have done well in such careers as technical sales, construction management, and industrial engineering.

The Engineering Management core consists of courses covering key topics within engineering management and business administration. In addition, students elect an option (Civil, Computer, Electrical, Mechanical, or General) in which they take additional selected courses.

Students may obtain an MBA from the Eberhardt School of Business after completing the B.S. in Engineering Management by taking one additional year of coursework through a special program between Business and Engineering.

The Engineering Management Program at the University of the Pacific seeks to graduate engineers ready to enter professional practice or pursue graduate level studies. The objectives of the Engineering Management Program are to graduate engineers who:

1. Have the knowledge base to correctly frame engineering problems and corresponding solutions approaches,
2. Possess the skills to successfully implement solutions within their organization, and
3. Exhibit the abilities to continuously promote excellence in themselves and others.

Students will graduate from this 5-year program with one year of paid professional work experience in the field of engineering management.

Engineering Management Program

Core (See pg. 181)

Math/Science
- MATH 39
- Basic Science Elective

General Engineering
- ENGR 15, 79/L

Computer Science
- COMP 51 (or CIVL 19 or MECH 19)

Engineering Management
- EMGT 170, 174, 176
- Engineering Electives (6, according to option)

Business and Economics
- ECON 53, 55 (as part of General Education electives)
- BUSI 31, 33, 104, 105, 107, 109

Engineering Physics

The Bachelor of Science in Engineering Physics is offered in cooperation with the Department of Physics in the College of the Pacific. The degree is granted by the School of Engineering and Computer Science, and the student has an academic adviser in both schools. Engineering Physics is well suited for the student with a strong interest in physics but with the desire to apply that knowledge to real world problems.

Engineering Physics Program (BSEPhys) Objectives and Outcomes

Graduates of the BSEPhys degree program will be prepared to build and sustain successful careers in engineering and science, and actively engage in life-long learning. To achieve these objectives, the Engineering Physics Program shall:

1. Educate students in the fundamental subjects of mathematics, physics and engineering preparing them for a career in engineering or physics at a professional or graduate level of study.

2. Educate students in the use of modern engineering and physics techniques and tools for measurement, data acquisition, interpretation and analysis.
3. Provide and facilitate teamwork experiences in both engineering and physics problem-solving throughout the curriculum.
4. Provide students with significant hands-on laboratory and design experiences throughout the curriculum.
5. Develop the oral and written communication skills of the students to an effective level.
6. Expose students to many examples of fundamental physics applied towards practical problems, and facilitate development of the student's ability to solve practical problems using the fundamental principles of physics.
7. Expose students to environmental, ethical and contemporary issues, including the historical advancements made in the field of physics, the innovations they have led to and their societal impact.
8. Facilitate the transition to the engineering workplace by educating students in the basic tenets of professional behavior, including time management, ethical decision making, and principles of leadership.

All Engineering Physics students must successfully pass the Engineering Physics Core Assessment Exam as a prerequisite for ECPE 196 – Senior Project II. The objective of the Core Assessment Exam is to ensure that all graduating Engineering Physics students have a satisfactory level of knowledge of fundamental concepts of their major.

Students will graduate from this 5-year program with 1 year of paid professional work experience in the field of engineering physics.

Engineering Physics Program

Core (see pg. 181)

Math/Science
- MATH 39
- PHYS 57, 101, 161, physics electives (2)
- Elective

Engineering
- ECPE 41/L, 71/L, 121, 131/L, 195, 196
- ENGR 45, 120
- CIVL 130
- Electives (2)

Computer Science
- COMP 51

Computer Science

The learning objectives for the Computer Science major path are:

Theory and Persistent Concepts

1. Students will have the ability to select and apply algorithms, data structures and appropriate languages.
2. Students will understand computer fundamentals such as computing theory, programming language concepts, networking and computer organization and architecture as appropriate for the major.

Software Design and Analysis

1. Students will have experience with the analysis, design and testing principles that apply to computer problem-solving.
2. Students will have a good understanding of design principles and methodologies.

Teamwork and Communication

1. Students will have the ability to communicate concisely and professionally in writing and in oral presentations.
2. Students will develop the ability to work on a software development team as both a leader and a participant.
3. Students will develop the ability to document software and understand its importance in software development and system integration.

Experiential and Independent Learning

1. Students will demonstrate the ability to learn and apply current and emerging technologies.
2. Students will have the confidence to learn new concepts on their own.
3. Students will develop their ability to contribute to the profession by applying their knowledge on a project. This may be a co-op, senior project or undergraduate research.

Social and Ethical Issues

1. Students will be able to evaluate professional decisions based on an understanding of ethical issues.
2. Students will be ready to assume their social responsibilities as technology professionals.

Learning objectives for the student following the Bioinformatics path are:

Strong Foundation in Interdisciplinary Sciences

1. Students will understand fundamental concepts in biology, chemistry, mathematics, and computer science
2. Students will have an opportunity to integrate material from multiple disciplines in a capstone project. This may be an internship, senior project, or undergraduate research.
3. Students will have the confidence to work independently and ability to learn new concepts on their own.

Expertise in Using Computer Applications to Analyze Data

1. Students will develop experience with the wide variety of computer applications used in bioinformatics.
2. Students will develop familiarity with the common data formats used by these applications.
3. Students will develop the ability to use computer applications to visualize, analyze, compare, and perform original studies of bioinformatic data.

Proficiency in Designing Algorithms and Coding Applications to Solve Problems

1. Students will have experience with the analysis, design and testing principles that apply to solving problems in computer science and bioinformatics.
2. Students will have the ability to select and apply algorithms, data structures, and appropriate languages and operating systems.
3. Students will develop the ability to work on a software development team as both a team leader and as an individual contributor..

Understanding the Role of Public Domain Databases in Bioinformatics.

1. Students will develop the ability to search, retrieve, and analyze information on public domain databases containing bioinformatic data.
2. Students will develop an understanding of the origins, evolution, and significance of public domain databases.
3. Students will learn about the kinds of data which are stored in public domain databases, and how such data are submitted, annotated, and validated through consensus.

Social and Ethical Issues

1. Students will be able to make decisions with an understanding of ethical issues in the sciences and engineering.
2. Students will be ready to assume their social responsibility as scientists, engineers, or professionals in the bioinformatics field.

Computer Science Path

The Computer Science path provides a strong background in the theory and practice of computer science. The major includes coursework in computing theory, data structures and algorithms, software design, application programming, and computer organization. There are three electives, allowing the student optionally to follow one of five possible tracks. Additional support courses are required in mathematics and science.

Requirements (84-89 units)

1. Computer Science Core (21 units)

   COMP 5, 51, 53, 101, ECPE 71, 71L, 173

2. Advanced Courses (22-25 units)

   COMP125, 129, 141, 147, 157, 195

   Three electives (9-12) units chosen from

   COMP 37 or 73, 127, 135, 155, 161, 163, 171, 173, 159, 151, 153, 177, 178, MATH 148, 110, 174.

   Additional experiential learning can be used as an elective:

   COMP 181, COMP 188/189, or COMP 197.

   Note: At least one elective must be a COMP course.

   It is strongly recommended that the student concentrate advanced course work in one of the following tracks:

Networking and Computer Security

COMP 177	Computer Networking
COMP 178	Computer Security
MATH 148	Cryptography

Application Development

COMP 171	GUI Programming
COMP 135	Human-Computer Interface Design
COMP 163	Database Management Systems
COMP 127	ClientServer Systems

Mathematics

MATH 110	Numerical Analysis (MATH 55 is a prerequisite)
MATH 174	Graph Theory
COMP 155	Computer Simulation

Computer Games and Simulation

COMP 155	Computer Simulation
COMP 159	Computer Game Technology
COMP 153	Computer Graphics

Note: MATH 145 is required.

Computational Biology

COMP 161	Bioinformatics I

Approved elective in computational biology

BIOL 101	Genetics

Note: The student must take BIOL 51 and 61

3. Experiential Learning (5 units)

   ENGR 25

   COMP 181 or 188/189 or 197

4 Mathematics: (19 units) MATH 37 or 39, 51, 53, one of (145, 72, 74), COMP 47

5. Laboratory Science: (12-14 units)

   a. A two-semester laboratory science sequence:

      Physics (PHYS 53, 55(MATH 55 is a corequisite)), Chemistry (CHEM 25, 27), Biology (BIOL 51, 61), Geology (GEOS 51, 53, or 61)

   b. Other Science:

      One elective chosen from: CHEM 23, 25, BIOL 41, 51, GEOS 51, 53, or 61, PHYS 23, 25, 53, 55[1]. The elective must be from a science not selected in item a.

6. Technical Communication Proficiency (4 units)

   ENGL 105

Bioinformatics Path

The Bioinformatics path to the BS degree in Computer Science provides the student with: a strong foundation in multiple disciplines, including biology, chemistry, mathematics, as well as computer science. The curriculum consists of a core of computer science courses, plus a selection of interdisciplinary science and math courses. There are two electives, allowing the student the opportunity to pursue individual interests. Experiential learning is provided by either a COOP internship or a senior project. This curriculum is designed to prepare the student for a successful career in research, medicine, or professional practice in the bioinformatics professions.

Requirements (93-94 units)

1. Computer Science Core (15 Units)

   COMP 5, 51, 53, 101, 105, 125

2. Advanced Courses (17-18 units)

   COMP 157, 161, 193 (Special Topics in Bioinformatics)

   2 courses chosen from COMP 127, 129, 137, 147, 163, 191, 193

3. Experiential Learning (5 units)

   ENGR 25

   COMP 181 or 188/189 or 197

4. Mathematics (16 units)

   MATH 39, 51, 53, COMP 47

5. Biology and Chemistry (36 units)

   BIOL 51, 61, 101, 169, CHEM 25, 27, 121, 123

6. Technical Communication Proficiency (4 units)

   ENGL 105

Computer Science Minor

Computing technology is an integral part of many fields of study. The Computer Science minor provides students with an introduction to application development. Students must take three core courses and three elective courses that can be tailored to a specific interest. It is recommended that students begin the minor program early in their college career (21-24 units).

Three core classes (12 units): 51, 53, 101.

Three electives approved by the minor adviser. No more than one lower division course can be used as an elective.

Minor in International Engineering

Our "global village" is becoming increasingly integrated and international communications are now almost instantaneous. Thus, the professional who can operate in a multinational setting is a step ahead. With this in mind, the School of Engineering and Computer Science 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 sure some of this "international" work satisfies 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 overseas, and maintain a minimum GPA of 2.5.

Engineering Management Minor

Industry and the engineering societies encourage engineering students to have management skills because the average engineering graduate will be in some aspect of management within three to five years of graduation.

The minor in Engineering Management is for students majoring in engineering who desire an understanding of management concepts and basic engineering management skills. An engineering major can obtain a minor in Engineering Management by completing 20 units in the Engineering Management area and fulfilling the following requirements:

1. BUSI 31 Principles of Financial Accounting
2. EMGT 170 Engineering Administration
3. EMGT 174 Engineering Project Management
4. One of the following:

   EMGT 176 Systems Engineering Management

   BUSI 104 Operations Management
5. One other management course from the following:

   BUSI 33 Principles of Managerial Accounting

   BUSI 100 Management Information Systems

   BUSI 105 Financial Management

   BUSI 107 Marketing Management

At least four of the courses in the 20-unit requirement must be taken at Pacific. All courses must be taken for a letter grade with a minimum 2.0 grade point average.

Minor in Project Management (for Non-Engineering Students Only)

Non-engineering major students may seek a Minor in Project Management in order to gain understanding of the specific issues and approaches to management in an engineering or high technology context. This minor requires a tightly knit suite of at least six engineering, computer science and business courses, providing complementary insights into technology and the challenges of project management within an engineering or technical organization. Though some courses are open to engineering and computer science majors, the nature of the material is such that non-engineering students are able to understand the material and successfully complete course requirements.

The Minor in Project Management is particularly useful to those students anticipating a career in organizations having a:

- Significant number of engineers
- Project orientation
- Reliance on technology, or
- Emphasis on manufacturing

General Requirements

1. Student must not be majoring in engineering.
2. Student must complete a course set consisting of a minimum of 20 units, in accordance with the course guidelines and approved by the Director of the Engineering Management Program.
3. All courses that count toward the minor must be taken for a letter grade.
4. Students must maintain a minimum GPA of 2.0 in the minor program.

Required courses

All of the following:

Engineering Administration EMGT 170	4 units
Engineering Project Management EMGT 174	3 units
Systems Engineering Management EMGT 176	4 units
At least 3 from the following list:	
Principles of Financial Accounting BUSI 31	4 units
Management & Organizational Behavior BUSI 109	4 units
Engineering Graphics ENGR 15	3 units
Computers and Information Processing COMP 25	4 units
Introduction to Computer Science (in lieu of COMP 25) COMP 51	3 units

Five-Year MBA Program

High ability engineering students who want technical management positions in industry can obtain a Bachelor of Science in Engineering Management, a full year of paid cooperative education and an MBA in five years. The Five-Year MBA Program is year-round with Co-op during the summers before the sophomore, junior, and senior years. Graduates must complete eight specified core courses in the undergraduate business curriculum with a grade of B or better (BUSI 31, 33, 53, 100, 104, 105, 107, 109). Students who have taken these classes and fulfill the admissions requirements for the MBA will be eligible to waive the MBA introductory courses and enter into the advanced phase of this uniquely designed graduate program. This program is for students who are motivated to complete their academic education in a timely manner.

For more information about the Five-Year MBA contact: Dr. Abel Fernandez, Engineering Management Program Director at (209) 946-3061, or the MBA Program Office at (209) 946-2629.

Minor in Technology (For Non-Engineering Students Only)

Engineering and technology are integral parts of many careers and fields of study. As "technology" has become so prevalent in our lives and careers, more and more companies are demanding that their employees have a working knowledge in such areas as design, graphics, communications, hardware and software advances, etc. Consequently, college students majoring in non-technical disciplines would be well advised to consider taking advantage of technology-related courses to bolster their skills, knowledge, and awareness in any of these areas. In order to provide a structure and formal recognition towards this end, the School of Engineering and Computer Science offers a Minor in Technology.

The Technology Minor provides an introduction to various aspects of engineering and technology which will strengthen a student's employment qualifications. The University offers a number of engineering and technology-related courses which are basic enough in their content that non-engineering students can enjoy enrollment without intimidation.

Phrases like "The Age of Technology" and "Information Era" reflect the demand for professionals with more knowledge about engineering and technology. The student who takes advantage of this structured approach to additional studies will likely enjoy much greater job and salary recognition upon college graduation.

Requirements

The requirements for the Technology Minor are as follows:

1. Student must not be majoring in engineering.
2. Student must complete a program, approved by the minor adviser, consisting of a minimum of 20 units from a minimum of five courses. A minimum of 12 units must be taken at the University of the Pacific.
3. At least one course must be a computing class, and at least three must be from the School of Engineering and Computer Science.
4. Courses that count toward a minor may not be taken on a "pass/no credit" basis.
5. Students must maintain a minimum GPA of 2.0 in a minor program.

For more information and advising details, students can contact their faculty adviser or Dr. Gary Martin at (209) 946-3064 or gmartin@pacific.edu.

Course Descriptions

Courses are numbered in accordance with the general University system.

Courses labeled "ENGR" are intended for all engineering students, while courses labeled "BENG," "CIVL," "MECH" or "ECPE" are primarily intended for majors in the Bioengineering, Civil (CE), Mechanical (ME) and Electrical and Computer (ECE) departments. Courses labeled "COMP" are taught in the Computer Science Department.

**California Articulation Numbers (CAN) are listed for community college transfers. A student may not enroll in a course unless all prerequisites are successfully completed with a grade of C- or better.*

Engineering

ENGR 5. Introduction to Engineering (3)
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: MATH 41 (Fall).*

ENGR 10. Info-Highway: Past to Present (4)
A past, present and future examination of communication systems starting with smoke signals through the telegraph to the World Wide Web. In this course students learn to use the Internet, electronic mail and the Web to communicate with peers and collect information. Present communications systems such as cellular phones, fiber optic systems and the Internet are examined along with their potential impact on different areas of society including education, politics and business. Recommended for non-engineering majors. Course does not count toward an engineering degree. *Prerequisite: passing scores on the General Education quantitative skills examination or MATH 5 with a "D" or better.*

ENGR 11. Technology and Society (3)
An exploration into origins of the major technological developments and their impact on society, culture, and human environment. Technological developments of ancient, medieval, and modern times are considered with respect to such areas as power and energy, materials, machinery, agriculture, transportation, human health, and communication. Course does not count toward an engineering degree.

ENGR 15. Engineering Graphics (3)
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. *Prerequisite: CAN ENGR 2.**

ENGR 20. Engineering Mechanics I (Statics) (3)
The fundamental principles of static equilibrium resulting from the application of forces on particles and bodies. *Prerequisites: MATH 53, PHYS 53 (Fall and Spring). CAN ENGR 8.**

ENGR 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. Mock interviewing. *Prerequisite: permission of the instructor required (Spring, Fall).*

ENGR 45. Materials Science – Properties and Measurements (4)
The dependency of physical, chemical and mechanical properties on microscopic and macroscopic structure of materials. Laboratory experiments on properties of materials such as metals, polymers, composites and ceramics. *Prerequisites: CHEM 25, MATH 53 (Fall, Spring), CAN ENGR 4.**

ENGR 79. Electrical Science (3)
Introduction to basic electrical concepts, DC and AC circuit analysis, frequency response, single-phase and three-phase AC power, transformers, motors, generators, instrumentation, feedback control systems, communications systems, digital systems. NOT for Electrical Engineering, Computer Engineering, Engineering Physics, or electrical option in Engineering Management. *Prerequisite: computer literacy. Corequisites: PHYS 55, MATH 55, ENGR 79L (Fall, Spring). CAN ENGR 6.**

ENGR 79L. Engineering Science Lab (1)
Laboratory to accompany ENGR 79. Measurements and analysis of DC and AC circuits, power systems and devices and electrical systems and devices. In support of concepts in ENGR 79. NOT for Electrical Engineering, Computer Engineering, Engineering Physics, or electrical option in Engineering Management. *Prerequisite: computer literacy. Corequisites: PHYS 55, MATH 55, ENGR 79. CAN ENGR 6.**

ENGR 120. Engineering Mechanics II (Dynamics) (3)
The fundamental principles of particles and bodies in motion under the action of external forces. *Prerequisite: ENGR 20 (Fall and Spring).*

ENGR 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: CIVL 19 or MECH 19, or permission of instructor, ENGR 20. Corequisite: MATH 57. Permission of the instructor for Electrical Engineering students (Fall, Spring).*

ENGR 122. Thermodynamics I (3)
The first and second laws of thermodynamics for open and closed systems. Properties of gases and liquids and ideal gases. Introduction to cycles for power and refrigeration. *Prerequisites: CHEM 25, PHYS 53 (Fall, Spring).*

ENGR 190. Mentor III (2)
The School of Engineering and Computer Science (SOECS) uses a specially designed capstone course that fulfills the Pacific requirements for Pacific Seminar III. The SOECS Mentor III course is designed to meet the requirements stated for the Pacific course while also meeting the requirements of the ABET accreditation guidelines. (Spring)

Bioengineering

BENG 5. Introduction to Bioengineering (1)
Introduction to the various sub-disciplines (biomedical, electrical, and mechanical) of bioengineering. *Prerequisite: ENGR 5 (Spring).*

BENG 103. Biomaterials (4)
This course will discuss biomaterials and lay the ground work for topics such as mechanical chemical, and thermal properties of replacement materials and tissues. Implantation of materials in the body will be studies from the biological point of view. *Prerequisite: ENGR 45 and BIOL 61 (Spring).*

BENG 161. Introduction to Bioinformatics (Also listed as COMP 161) (4)
This course provides an introduction to the field of Computational Biology known as Bioinformatics. The course provides an overview of genomics, proteomics, and pharmacogenomics. Students will use contemporary databases to research such topics as protein structure and function, hereditary disease, homology and phylogenetic inference, epidemiology and forensics, and drug discovery and design. Also included is an introduction to the methods used by computat6ional scientists for sequence alignment, data visualization and analysis, data mining and pat-

tern matching, and modeling and simulation. All classes are held in a computer lab and will include tutorial examples and hands-on experience working with a broad range of computer applications and databases. *Prerequisites: COMP 51, BIOL 51 and 61; or permission of instructor. Corequisite: BIOL 101 or permission of the instructor*.

BENG 171. Bioelectricity (4)
This course provides the student with an understanding of the origins, function, and measurement of electrical potentials and currents within biological tissues, such as nerve, muscle, and heart. Topics include: the bioelectrical properties of ion channels, neurons, the synapse and neuromuscular junction, adaptation and learning in small networks of neurons, the functional organization of bioelectrical systems, and bioelectrical measurement and stimulation of tissues such as the heart and brain. *Prerequisites: BIOL 61, ECPE 41/41L, MATH 55; or consent of the instructor.*

BENG 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.

BENG 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 from the department chairperson and the faculty members involved.*

BENG 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.

BENG 195. Senior Project (4)
Students apply basic sciences, mathematics and engineering topics to meet a stated objective; students will establish design objectives and criteria, and analyze solution alternatives, synthesize a problem, implement a solution, then evaluate design performance. Design documentation and demonstration are required. Includes both written and oral reports and presentations. *Permission of the instructor.*

BENG 197. Undergraduate Research (1-4)
Applied or basic research in bioengineering under faculty supervision. Approval by the faculty supervisor and department chair is required. Students must be in good academic standing.

Civil Engineering

CIVL 19. Civil Engineering Computing (3)
An introduction to the use of computers to solve problems related to the practice of civil engineering. Emphasis will be on the development of problem solving algorithms suitable for use on personal computers. Students will learn to use common analysis packages including spreadsheets and symbolic manipulators. Simulation programs will be explored and students will learn simple programming skills in a high level language. *Prerequisites: MATH 51 (may be taken concurrently), ENGR 5 (Spring).*

CIVL 22. Surveying (3)
An introduction to plane and topographic surveying including laboratory work. Additional coverage includes the principles of geometric design, GPS and the use of the computer. *Prerequisite: MATH 41 or equivalent college course or proficiency evidenced by successful completion of the University's trigonometry placement test. (Spring). CAN ENGR 10*.*

CIVL 60. Aquatic Chemistry for Environmental Engineers (4)
Chemical reactions and processes in aquatic systems with engineering applications. Chemical equilibrium and reaction kinetics. Introduction of organic chemistry concepts and biochemical processes relevant to environmental engineering. Laboratory included. *Prerequisites: CHEM 25, MATH 51.*

CIVL 100. Introduction to Structural Engineering (4)
An exploration of the fundamentals of structural analysis. Topics include: determination of loads, analysis of beams, trusses and frames, influence lines and indeterminate structures. *Prerequisites: CIVL 19, ENGR 121 (Summer).*

CIVL 130. Fluid Mechanics I (4)
The physical properties of fluids, statics and dynamics of incompressible fluids including hydrostatics, conservation of mass, energy and momentum principles; laminar and turbulent flow with emphasis on pipe flow. Laboratory included. *Prerequisite: ENGR 120 (Fall).*

CIVL 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 contaminant transport and remediation. *Prerequisite: CHEM 25 (Fall).*

CIVL 133. Water Resources Engineering (4)
Hydraulic analysis and design including pipe flow and open channel flow. Elements of the hydrological cycle. Deterministic and probabilistic analysis of rainfall-runoff data for estimation and design. Application of computers in hydrologic and hydraulic design. *Prerequisite: CIVL 130. (Spring)*

CIVL 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: CHEM 25, MATH 57.*

CIVL 136. Design of Water and Wastewater Facilities (4)
Advanced coverage of the physical, chemical, and biological processes involved in the design of water and wastewater treatment plant facilities. Includes applicable design standards and regulations. *Prerequisites: CIVL 130, 132.*

CIVL 138. Solid Waste Systems Design and Management (3)
Introduction to solid waste systems; analysis of problems associated with storage, collection, transport, processing, and disposal of solid wastes. Review of current and expected regulatory requirements. Planning and design of solid waste management components including systems and processes for solid waste prevention, recycling/composting, incineration, and landfilling. *Prerequisite: CIVL 132.*

CIVL 140. Introduction to Geotechnical Engineering (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 and deep foundations. Includes laboratory work. *Prerequisite: ENGR 121 or GEOS 114 (Fall).*

CIVL 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, cofferdams and trench bracing. Computer methods are applied to the design process. *Prerequisites: CIVL 140*

CIVL 142 Slopes and Retaining Structures (3)
A practical, hands-on design course to provide the basic concepts of rock and soil slope stability analysis and design. The design and analysis of retaining structures, including concrete, steel, and reinforced earth walls is also included. In addition, a review of the Uniform Building Code (UBC) and California Code of Regulations (cal-OSHA) regulations is conducted. An emphasis is placed on both hand solutions and computer

solutions using current, industry-standard software. *Prerequisite: CIVL 140.*

CIVL 145. Engineering Geology (4)
(Also listed as GEOS 145)
An introduction to the study of applied geology in which geologic principles, data and techniques are applied to civil engineering problems. *Prerequisite: GEOS 51 or 61 or CIVL 140.*

CIVL 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: ENGR 121, CIVL 22, CIVL 140.*

CIVL 151 Heavy Construction Methods (4)
This course covers a variety of topics in the areas of construction engineering and construction management. Construction engineering topics include construction methods of conventional and special structures such as bridges, tunnels and marine structures. Construction management topics include planning, bidding, scheduling and cost control are covered. A case study approach is used along with field trips and guest speakers. A term project is required. Intended for upper division students. *Prerequisite: Approval of the instructor.*

CIVL 160. Structural Analysis (3)
Analysis of buildings and bridges. Determination of earthquake and wind loadings by static and dynamic methods. Other topics include: analysis of shear wall – diaphragm buildings; use of structural analysis software; buckling of frames. Case studies of structures will be emphasized. *Prerequisites: CIVL 100 and MATH 57. (Fall)*

CIVL 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: CIVL 160 or MECH 120, MATH 57 recommended MATH 110.*

CIVL 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: CIVL 100.*

CIVL 166. Reinforced Concrete Design (4)
Design and proportioning of structural systems to satisfy design criteria for reinforced concrete and pre-stressed design in concrete. *Prerequisite: CIVL 100.*

CIVL 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: CIVL 100.*

CIVL 170. Engineering Administration (4)
Decision-making based upon engineering economy studies. This area covers techniques for economic evaluation of alternatives including time value of money, risk costs, effects of inflation, compound interest calculations, minimum attractive rate of return, capital budgeting, break-even analysis, sensitivity analysis and risk analysis. A second facet of the course covers the fundamental aspects of business management within an engineering context. This area covers the engineering procurement process, project management and project scheduling. *Prerequisite: upper-division standing in Engineering (Summer, Fall).*

CIVL 171. Water and Environmental Policy (3)
An introduction to Federal and State of California environmental regulations pertaining to air, water, hazardous wastes, and toxic substances. Includes an overview of water rights. Relevant case studies and monitoring and enforcement issues. Economic evaluations and impacts.

CIVL 180. Engineering Synthesis (4)
A culminating experience wherein a group of students synthesize their previous class work into one project. Both technical and non-technical concerns are addressed. One or more faculty members and/or professional engineers are involved depending upon the fields covered in the project. *Prerequisite: senior standing (Spring).*

CIVL 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.

CIVL 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.*

CIVL 193. Special Topics (1-4)
Upper-division elective subject area based on expertise of faculty member. *Prerequisite: approval of the instructor.*

CIVL 197. Undergraduate Research (1-4)
Applied or basic research in civil engineering under faculty supervision. Approval by both the faculty supervisor and department chair is required. Student must be in good academic standing.

Computer Science

COMP 5. Freshman Seminar (1)
This course allows students to explore computer-related career options using discussion with alumni and professionals in the field, and information on the Internet. Students will develop a program of study with computing electives and non-computing cognate courses. The program includes preparation for an internship and graduate studies. Students will be introduced to assessment tools a personal Web page, and the design, construction and maintenance of a portfolio. A course project includes a written report and an oral presentation with multimedia displays.

COMP 23. Computer Concepts and Applications (3)
A general introduction to computers with a focus on applications in word processing and spreadsheets. The students will also study the basic concepts of computer architecture, the Internet, and network communications. Students explore graphical design concepts with Web pages and PowerPoint presentations. The course may not be taken by students who have completed COMP 25. *Prerequisite: students must have completed the basic math skills requirement or completed MATH 5 or 35.*

COMP 25. Computers and Information Processing (4)
An introductory information technology course that focuses on computer architecture, networking, Internet technologies and the integration of productivity software. Lectures, readings, hands-on projects and lab assignments give a variety of learning experiences. Specific topics include computer architecture, digital data, networking, file management, spreadsheets, database systems and presentation applications. Students are exposed to Javascript and Visual Basic scripting. Particular emphasis is placed on HTML programming and creating an interactive student website for homework and lab linking throughout the semester. *Prerequisite: students must have completed the basic math skills requirement or completed MATH 5 or 35 (Fall Spring Summer)*

COMP 37. Data Communication Environment (3)
A first course in digital communication. Topics include: low level data structures: addressing, pointers, structures and unions; data transmission; local area network topologies and protocols;

wide area network protocols; internetworking; high speed networks; asynchronous transfer mode; sockets and application support protocols. This course has a significant programming component. *Prerequisites: COMP 53 or permission of the instructor.*

COMP 41 Great Ideas in Computing (4)
A broad introduction to the field of computing. The concepts that are the foundation of computing are presented and placed in historical context. Discussion topics include the ways of thinking and working that make computing effective, and the future of the field. Example topics include number representation, architecture of computing systems, intelligent computing systems, and the use of computing in art and games. *Prerequisite: students must have completed the basic math skills requirement.*

COMP 47. Discrete Math for Computer Science (3)
Designed to develop skills in deductive reasoning and applying concepts of discrete mathematics to computer science. Topics include logic, deductive reasoning, math induction, set theory, functions, recurrence relations, relations, graphs, trees, and Boolean Algebra. *Prerequisites: Students must have completed the basic math skills requirement.*

COMP 51. Computer Science I (4)
The course emphasizes program design and problem solving techniques using a high-level programming language. Introduces basic concepts such as assignment, control flow, iteration, and basic data structures. Course includes a supervised lab. *Prerequisites: Students must have completed the basic math skills requirement.*

COMP 53. Computer Science II (4)
The course continues the development of program design and problem solving techniques. Development of fundamental data structures and their associated algorithms. Topics include array-based algorithms, generics, dynamic memory, and recursion. Students will use these tools to implement simple container libraries. *Prerequisites: COMP 51*

COMP 73. Applied Operating Systems (3)
An introduction to operating system environments. Topics include file systems and storage, tasks and task dispatching, tools, scripts, installations and administration. At least one scripting language will be developed in some detail. *Prerequisites: COMP 51*

COMP 93. Special Topics (3-4)

COMP 101. Application Programming (4)
This course is intended to prepare students to transition to upper division courses. Students will learn to apply their existing knowledge and skills in the design and development of contemporary applications. This course includes a basic introduction to advanced topics such as graphical user interfaces, interfaces to database and file servers, event handling, multi-threaded applications and networking programming. *Prerequisites: COMP 47 or ECPE 71, COMP 51, 53, and 37 or ECPE 177*

COMP 125. Social, Legal, and Ethical Issues in Computing (1)
Social, legal, philosophical, political, constitutional, economics issues and their historical background related to computers. Examples include implications of Internet censorship, government policy concerning encryption, the protection of intellectual property in cyberspace, and the risks of new technologies.

COMP 127. Client-Server Systems (3)
This course integrates a number of tools in a full operational distributed data processing system. Students use tools and technologies such as: client and server side scripting, dynamic HTML, XML, CGI, ODBC and a variety of other tools to construct an operational distributed system. *Prerequisites: COMP 101*

COMP 129. Software Engineering (3)
Students will gain practical experience in dealing with medium to large scale software systems. This course is designed to provide experiential learning through application of current systems analysis and design methodologies. Students will learn how to use the methodologies to develop the abstractions necessary to understand large systems. Students will also learn how to use the methodologies and abstractions to communicate with coworkers and clients about the analysis and design. Because communication is an essential skill in large system development, students will be expected to produce documents and presentations of professional quality and depth. *Prerequisites: COMP 101*

COMP 135. Human-Computer Interface Design (3)
Human-Computer Interface (HCI) design focuses on the relationship between humans and computers or other physical devices. This course helps students develop an understanding of the common problems in designing these interfaces and presents a set of design techniques for ensuring that designs are both useful and usable. *Prerequisites: Junior or Senior standing*

COMP 137. Distributed Computing (3)
Distributed computing is a science which solves a large problem by giving small parts of the problem to many computers to solve and then combining the solutions for the parts into a solution for the problem. This course introduces architectures and implementation techniques to support distributed computation. Students will learn synchronization and communication techniques for dealing with distributed application states. Students will gain practical experience using current middleware architectures to support applications operating over heterogeneous networks. Students will be expected to research and report on at least two distributed computing topics. Students will also be expected to design and implement an original distributed application as a term project. *Prerequisites: COMP 101*

COMP 141. Programming Languages (3)
Topics in the evaluation, design, and development of programming languages. Topics include type systems, variables and scope, functions, parameter passing, data hiding and abstractions, recursion, memory allocation, grammars and parsing, compiler architecture, programming paradigms, and comparison of programming languages and environments. *Prerequisites: ECPE 173*

COMP 147. Computing Theory (3)
Study of automata, formal languages and computability. Topics include: finite state automata, regular languages, and their applications; push-down automata, context-free languages and their applications; Turing machines and phrase-structure languages; Turing machines and undecidability; Chomsky hierarchy of formal grammars and their corresponding classes of languages. *Prerequisites: COMP 53 and COMP 47.*

COMP 151. Artificial Intelligence (3) (Also listed as ECPE 151)
Basic concepts, techniques and tools used in Artificial Intelligence. Knowledge representation, search techniques, and problem solving strategies. Introduction to AI programming languages. *Prerequisite: COMP 51 (Spring, odd years).*

COMP 153. Computer Graphics (3) (Also listed as ECPE 153)
An introduction to two and three dimensional computer graphics. Basic representations and mathematical concepts, object modeling, viewing, lighting and shading. Programming using OpenGL and other computer graphics applications. *Pre-requisites: COMP 53 (Spring, even years)*

COMP 155. Computer Simulation (3) (Also listed as EMGT 155)
This course explores digital simulation, in which a model of a system is executed on a computer. The course will focus on modeling methodologies, mathematical techniques for implementing models, and statistical techniques for analyzing the results of simulations. Students will develop simulations using both simulation development toolkits and general purpose programming languages. P*rerequisites: COMP51, MATH 37 or 39, and MATH 53, or permission of instructor.*

COMP 157. Design and Analysis of Algorithms (3)
Topics include complexity analysis, algorithms for searching, sorting, pattern matching, combinatorial problems, optimization problems, backtracking, algorithms related to number theory, graph algorithms, and the limitations of algorithm power. *Prerequisites: COMP 47, 53 and MATH 53.*

COMP 159. Computer Game Technologies (4)
This course surveys the technologies and processes used for modern video game development. Course topics include software engineering, media creation and management, hardware interfaces, user interaction, 3D mathematics and common algorithms and data structures to support graphics, physics and artificial intelligence. Prerequisites: COMP 101, MATH 53.

COMP 161. Introduction to Bioinformatics (4)
This course provides an introduction to the field of Computational Biology known as Bioinformatics. The course provides an overview of genomics, proteomics, and pharmacogenomics. Students will use contemporary databases to research such topics as protein structure and function, hereditary disease, homology and phylogenetic inference, epidemiology and forensics, and drug discovery and design. Also included is an introduction to the methods used by computational scientists for sequence alignment, data visualization and analysis, data mining and pattern matching, and modeling and simulation. All classes are held in a computer lab and will include tutorial examples an hands-on experience working with a broad range of computer applications and databases. *Prerequisites: COMP 51, BIOL 51 and 61 and concurrent enrollment in BIOL 101.*

COMP 163. Database Management Systems (3)
A database management system (DBMS) is a computer application program designed for the efficient and effective storage, access and update of large volumes of information. This course will look at such systems from two perspectives: A user-centered perspective focusing on how a DBMS is used to build support a data intensive application. This perspective includes a look at the common data models, query languages and design techniques. A System implementation perspective focusing on the policies, algorithms and data structures used to design and implement a DBMS. *Prerequisites: COMP 101*

COMP 171. GUI Programming (3)
Graphical User Interface programming using object libraries. Development of Windows software using class libraries and visual programming tools. Object-oriented design is applied to GUI programming projects. Other topics may include: multiple document interface (MDI), Database, Active X, and COM programming. *Prerequisites: COMP 51, 53.*

COMP 173. Operating Systems (3)
An introduction to the fundamental concepts of modern operating systems. Topics include an overview of the computer hardware that supports the operating system, process management, threads, and CPU scheduling. Process synchronization using primitive and high-level languages. Virtual memory management, file systems, system protection, and distributed systems. *Prerequisites: COMP 53 or permission of instructor.*

COMP 195. Senior Seminar (1)
The senior seminar provides an opportunity for graduating seniors to complete professional portfolios and prepare for the transition to the beginning of their professional lives as computer scientists. Topics include: reflection and integration of the undergraduate experience, portfolio completion and presentation, development of interview skills and career development concepts, preparation for professional examinations and/or GRE. *Prerequisite: Senior standing as a computer science major.*

Experiential Learning

COMP 87. Industrial Fellowship (4)
Supervised experience in an approved work setting for outstanding lower division students. Students must apply and be selected for this fellowship opportunity. *Prerequisites: GPA 3.0 or above; COMP 47, 51, 53, 37, one additional COMP course and ENGR 25 (Summer).*

COMP 181-185 Professional Practice (1-18)
Cooperative employment in an approved professional environment. Requires satisfactory completion of the work assignment and written reports. (Fall, Spring, Summer) Pass/Fail only. *Prerequisite: GPA 2.7 or above. Normally a student will have taken additional COMP courses including some numbered 127 and above.*

COMP 187a,b,c. Internship in Computer Science (4, 2-4, 4)
Unpaid, supervised experience in an approved work setting to be contracted on an individual basis. *Prerequisites: GPA 2.7 or above, COMP 37, 47, 51, 53, 101, and ENGR 25.* Normally a student will have taken additional COMP courses including some numbered 127 and above. (Fall, Spring, Summer) Pass/No Credit only.

COMP 188. Senior Project I (2)
Students will establish design objectives and criteria, analyze solution alternatives, synthesize a problem, and evaluate design performance. Design documentation and demonstration are required. Includes both written and oral reports and presentations. *Prerequisites: COMP 129 (a pre or co-requisite) and senior standing.*

COMP 189. Senior Project II (2)
Continuation of Senior Project I. Project is completed, tested and reviewed. Final written and oral reports and project demonstration. *Prerequisites: COMP 188*

COMP 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.

COMP 193. Special Topics (3, 4)
Special courses will be offered from time to time to meet the interests of a group of students and/or faculty. *Prerequisite: Approval of the instructor.*

COMP 197. Undergraduate Research (2-4)
Students conduct supervised research that contributes to current active topics in Computer Science. Topics may be selected by the student, related to faculty research, or provided by industrial sponsors. *Prerequisite: Permission of the Undergraduate Research Coordinator.*

Electrical Engineering/Computer Engineering

ECPE 5. Introduction to Electrical and Computer Engineering (1)
Introduction to the various sub-disciplines of Electrical and Computer Engineering. Introduction to the tools, both hardware and software, that are used in Electrical and Computer Engineering. *Prerequisite: ENGR 5 (Spring).*

ECPE 41. Electric Circuits (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. *Prerequisite: computer literacy. Corequisites: PHYS 55, MATH 55, ECPE 41L (Fall, Spring, Summer). CAN ENGR 6.**

ECPE 41L. Electric Circuits Laboratory (1)
Basic electrical measurements laboratory of concepts discussed in ECPE 41. Must be taken concurrently with ECPE 41. *Prerequisite: computer literacy. Corequisites: PHYS 55, MATH 55, ECPE 41 (Fall, Spring, Summer). CAN ENGR 6.**

ECPE 71. Digital Design (3)
Number systems, binary arithmetic, Boolean logic. Analysis and synthesis of combinational and sequential circuits. Use of MSI, LSI, FPGA and CPLD devices. *Prerequisites: Completion of basic math skills requirement, COMP 51, computer literacy. Corequisite: ECPE 71L (Fall, Spring).*

ECPE 71L. Digital Design Lab (1)
Laboratory treatment of the concepts discussed in ECPE 71. *Prerequisites: Completion of basic math skills requirement, COMP 51. Corequisite: ECPE 71 (Fall, Spring).*

ECPE 121. Systems Analysis (4)
Analysis of continuous and discrete time systems in the time and frequency domains. Fourier, Laplace, and z-transforms, convolution. Difference equations. Zero-input and zero-state components. *Prerequisites: ECPE 41, MATH 57, computer literacy (Fall, Spring).*

ECPE 125. Introduction to Digital Signal Processing (4)
Sampling and quantization, DFT and FFT, z-transform, discrete time systems, digital signal processing hardware and software, A/D and D/A converters, anti-aliasing filters, FIR and IIR digital filters, digital data communications, image processing, speech coding/decoding. Includes laboratory. *Prerequisites: ECPE 71, 71L, 121, 131,131L, COMP 51 (Fall).*

ECPE 127. Random Signals (3)
An introduction to probability and statistics in engineering applications. Random signals in the time and frequency domains. Linear systems with random inputs. Noise sources and modeling of noisy networks. *Prerequisites: ECPE 121, computer literacy (Spring).*

ECPE 131. Introduction to Integrated Circuits (3)
Solid-state behavior of the diode, mosfet, and bipolar transistor with particular emphasis on the mosfet in digital circuit applications. IC processing, device modeling, and circuit simulation. *Prerequisites: ECPE 41, 41L, CHEM 25, COMP 51, MATH 55, PHYS 55. Corequisite: ECPE 71, 71L, 131L (Fall, Spring).*

ECPE 131L. Introduction to Integrated Circuits Lab (1)
Use of current software tools to model electronic devices, simulate circuit behavior, and layout integrated circuits. Use of electronic test equipment to verify operation of electronic devices. *Prerequisites: ECPE 41, 41L, CHEM 25, COMP 51, MATH 55, PHYS 55. Corequisite: ECPE 71, 71L, 131 (Fall, Spring).*

ECPE 132. Analog Circuits Design (4)
Analysis, design and applications of analog integrated circuits. Includes laboratory. *Prerequisites: ECPE 131, 131L (Fall).*

ECPE 135. Power Electronics (4)
Study of high voltage, high current switching in power systems. Thyristors and other power devices; bridge and polyphase rectifiers. Phase controlled converters. High frequency switching DC/DC converters. Variable frequency DC/AC converters. Cycloconverters. Computer Modeling of circuits. Laboratory. *Prerequisites: ECPE 131, 131L (Spring, even years).*

ECPE 136. VLSI Design (4)
Issues in VLSI design including: logic families, sizing, timing models, fabrication, layout, high speed and low power design tradeoffs, circuit simulation and device modeling. *Prerequisites: ECPE 71, 71L, 131, 131L (Spring, odd years).*

ECPE 141. Advanced Circuits (4)
Power in AC circuits. Three phase power systems. Frequency response. Operational amplifier circuits and applications. Filter design. *Prerequisites: ECPE 41, 41L. Corequisite: ECPE 121 (Fall).*

ECPE 144. Applied Electromagnetics (4)
The purpose of this course is for students to gain an understanding of transmission lines and field theory as it applies to communication circuits and systems. Electromagnetic wave propagation, reflection, and transmission through common materials will be examined. *Prerequisites: PHYS 55, MATH 57, ECPE 41 (Spring).*

ECPE 151. Artificial Intelligence (3) (Also listed as COMP 151)
Basic concepts, techniques and tools used in Artificial Intelligence. Knowledge representation, search techniques, and problem solving strategies. Introduction to AI programming languages. *Prerequisite: COMP 51 (Spring, odd years).*

ECPE 153. Computer Graphics (3) (Also listed as COMP 153)
An introduction to two and three dimensional computer graphics. Basic representations and mathematical concepts, object modeling, viewing, lighting and shading. Programming using OpenGL and other computer graphics applications. *Prerequisites: COMP 53 (Spring, even years)*

ECPE 155. Autonomous Robotics (4)
Overview of design of autonomous robotics. Study of architectures for robot organization and control. Configurations of fixed and mobile robots, sensors and actuators. Design of algorithms and knowledge representations. *Prerequisites: COMP 53, ECPE 71 or permission of the instructor. (Spring, even years).*

ECPE 161. Automatic Control Systems (4)
Component and system transfer functions. Open and closed loop response; stability criteria; applications to engineering systems. Includes laboratory. *Prerequisites: ECPE 121, 141 (Spring, odd years).*

ECPE 162. 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. *Prerequisite: ECPE 121 (Spring, even years).*

ECPE 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. Renewable energy resources. Includes laboratory. *Prerequisite: ECPE 121 (Spring, odd years).*

ECPE 165. Power Systems (4)
Study of electrical power generation and transmission. Three phase balanced and unbalanced networks. Power transformers and generators. Transmission lines. Power flow analysis. System stability. Fault analysis and system protection. Computer modeling of power systems. Laboratory. *Prerequisite: ECPE 121 (Spring, even years).*

ECPE 172. Microcontrollers (4)
Design and implementation of digital monitoring and control systems using micro-controllers. Hardware and software development. Interfacing input and output devices. Assembly and C programming. Representative applications. Includes laboratory. *Prerequisites: ECPE 71, 71L (Fall).*

ECPE 173. Computer Organization (4)
Organization and operation of computer architectures. Design of control, register, arithmetic-logic, memory and input/output units. Computer arithmetic. Assembly language and register transfer language. Implementation of central processing unit components. Overview of topics of computer architecture. *Prerequisites: ECPE 71, 71L, or COMP 47 and COMP 51 (Fall, Spring).*

ECPE 174. Advanced Digital Design (4)
Analysis, design and implementation of synchronous state machines using modern programmable logic devices. CAD-based development using schematic capture and hardware description languages (HDLs). System simulation. Representative applications. Includes laboratory. *Prerequisites: ECPE 71, 71L (Fall).*

ECPE 175. Embedded and Real-Time Systems (4)
Design of computer systems for embedded and real-time applications. Interfacing to peripheral devices. Scheduling and multitasking. Network and communication interfaces such as CeBUS, FireWire, and USB. Survey of industry microcontrollers. Includes laboratory. *Prerequisite: ECPE 173 (Spring).*

ECPE 176. Computer Architecture (3)
Study of computer systems with an emphasis on contemporary designs. Pipelining, cache and memory design, input/output. Single and multiple processor systems. *Prerequisite: ECPE 173 (Spring).*

ECPE 177. Computer Networking (4)
(Also listed as COMP 177)
Computer Networks and the Internet. LAN, WAN and Internet architectures. The 7-layer OSI model. The Internet protocol stack. Circuit-switched and packet switched networks. Connection oriented and connectionless networks. Routing. Security. Includes laboratory. *Prerequisites: ECPE 71, 71L and senior standing.*

ECPE 178. Computer Security (4)
(Also listed as COMP 178)
An introduction to security of computer systems and security of communication on networks of computers. Topics include TCP/IP protocols, Internet cryptography, Internet authentication, Trojans, viruses, worms. Emphasis is on network/system attack methods, and how to defend against those attacks. Two hours of lecture and three hours of lab per week. *Prerequisites: ECPE 177 (Computer Networking) or Comp 37 (Data Communication Environment).*

ECPE 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.*

ECPE 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 from the department chairperson and the faculty members involved.*

ECPE 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.

ECPE 195. Senior Project I (2)
Instruction in and application of design processes and teamwork; includes multiple interdisciplinary team design experiences of increasing complexity. Projects incorporate consideration of engineering standards and realistic constraints such as economics, the environment, sustainability, manufacturability, and safety. Instruction and practice in documentation and oral and written communications skills. Review and assessment of core objectives of EE, CpE and EPh majors. *Prerequisites: Completion of core course requirements for major and senior standing. (Fall, Spring)*

ECPE 196. Senior Project II (2)
Capstone design course that integrates earlier studies, including ECPE 195, to perform interdisciplinary team design projects. Student design teams define a requirements document, a test document, and a design document for a prescribed product, then design, build and test a prototype. Complete documentation is expected. Final oral and written reports and project demonstrations are required. *Prerequisite: ECPE 195; completion of core skills requirement for major. (Fall, Spring, Summer).*

ECPE 197. Undergraduate Research (1-4)
Applied or basic research in electrical and/or computer engineering under faculty supervision. Approval by the faculty supervisor and department chair is required. Student must be in good academic standing.

Mechanical Engineering

MECH 19. Computer Applications in Mechanical Engineering (3)
Identification and solution of engineering problems using computers and numerical methods. Computation methods such as finite differences and finite element. Design and development of software. Computer programming concepts. *Corequisite: MATH 55 (Spring).*

MECH 100. Manufacturing Processes (4)
A study of traditional manufacturing processes such as formatting, cutting, joining, casting, and heat treating as well as advanced processing methods. Manufacturing with polymers, composites, and ceramics in addition to metals. Tribology, nondestructive evaluation, and quality control. Laboratory projects on manufacturing skills, reverse engineering, automated machines, geometric dimensioning and tolerancing, and statistical process control. *Prerequisite: ENGR 45 or permission of the instructor (Fall).*

MECH 102. Materials in Engineering Design (3)
Evaluating and selecting materials for engineering design applications. Study of the interaction between design criteria, materials selection, economics and manufacturing methods. Generation of material design criteria and performance data using laboratory exercises. Design methodologies using nontraditional and traditional materials including metals, polymers, composites, and ceramics. *Prerequisites: ENGR 45, 121 (Fall).*

MECH 104. Introduction to Mechatronics (3)
A broad understanding of the main components of mechatronic systems. Understanding of the general principles involved in computer-controlled machinery, including sensing, actuation and control; practical knowledge of the development of simple embedded computer programs; understanding of the practical application of mechatronic systems in applications such as manufacturing, automobile systems and robotics. *Prerequisites: ENGR 79, 120, MECH 110 or permission of the instructor (Spring).*

MECH 110. Instrumentation and Experimental Methods (3)
Experimental techniques in the measurement of quantities such as strain, force, temperature, pressure, flow, motion and noise. Statistical analysis and errors in measurement; data analysis and transmission. Use of instruments in the laboratory; a measurement project. *Prerequisite: MATH 57, ENGR 45 or permission of the instructor (Fall).*

MECH 120. Machine Design and Analysis I (3)
This course builds on fundamental principles learned in statistics, dynamics, and mechanics of materials, and applies them to the design and analysis of machines. Methods for performing load and stress analysis will be learned along with analytical methods for solving deflection and stability problems. Static, impact, and fatigue failure theories for machines will also be studied. Statistical methods for solving machine design problems will be presented, and engineering design practices will be integrated throughout the course. *Prerequisites: ENGR 45, 120, 121 (Fall).*

MECH 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: ENGR 120, 121.*

MECH 125. Machine Design and Analysis II (3)
Students learn how to design, analyze, and incorporate a variety of standard parts and devices into machines. These parts and devices include fasteners, gear systems, belt drives, chain drives, shafts, couplings, bearings, springs, clutches, and brakes. Principles of tribology (friction, wear, & lubrication) are introduced and applied to the design of machines. Engineering design practices will be integrated throughout the course. *Prerequisites: MECH 120 (Spring).*

MECH 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: MATH 57, ENGR 120, MECH 19 or permission of the instructor (Fall).*

MECH 140. Engineering Design/ Senior Project I (3)
Methods of initiating, planning, conceptualizing, and configuring engineering designs are discussed. The student will use these methods to develop an engineering design for a product or process involving mechanical engineering. Product realization methods, project management, materials selection, manufacturing for designers, guided iteration, communication skills, economics, ethics, liability, and safety issues are put into practice through class activities. *Corequisite: MECH 120 or 150 (Fall).*

MECH 141. Engineering Design/ Senior Project II (3)
The student will complete the design phase of their project. Parametric design techniques such as guided iteration, optimization, and Taguchi's methods will be used to complete the detailed design of a product or process involving mechanical engineering. Manufacturing necessary to complete the product or process is a requirement. Weekly oral and written progress reports are required along with final comprehensive oral and written reports. *Prerequisites: MECH 100 (Spring).*

MECH 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. *Prerequisite: ENGR 122 (Spring).*

MECH 151. Applied Heat Transfer (3)
Applications and extensions of the topics in MECH 150. Multimode heat transfer; heat exchangers. Heat transfer with phase change. *Prerequisite: MECH 150.*

MECH 155. Solar Energy Engineering (3)
Introduction to solar energy, sun-earth geometry, radiation measurement, insolation on surfaces, principles of solar collectors, applications such as space heating and solar ovens, photovoltaics, laboratory experiments. *Prerequisites: MECH 150, ENGR 122.*

MECH 157. Thermodynamics II (3)
Continuation of topics in Thermodynamics I. Availability, 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: ENGR 122 (Fall).*

MECH 158. Air Conditioning (3)
Introduction to air conditioning purpose, terminology and typical systems. Study of analysis and design of air conditioning as applied to residential and small commercial buildings. Use codes and standards applicable to this field. *Prerequisites: ENGR 122 and permission of the instructor.*

MECH 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 turbomachinery, viscous flow and potential flow. *Prerequisites: CIVL 130, ENGR 122.*

MECH 175. Systems Analysis and Control (4)
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. *Prerequisites: ENGR 79, MECH 110, 129 or permission of the instructor (Spring).*

MECH 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: ENGR 121, CIVL 130, MECH 150 (Fall).*

MECH 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.

MECH 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.*

MECH 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.

MECH 195. Seminar (1-4)
Presentation of special topics of current interest by and for staff, students and guests (Fall, Spring).

MECH 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

EMGT 155. Computer Simulation (3) (Also listed as COMP 155)
This course explores digital simulation, in which a model of a system is executed on a computer. The course will focus on modeling methodologies, mathematical techniques for implementing models, and statistical techniques for analyzing the results of simulations. Students will develop simulations using both simulation development toolkits and general purpose. *Prerequisites: MATH 39, 53 and COMP 51.*

EMGT 170. Engineering Administration (4)
Decision-making based upon engineering economy studies. This area covers techniques for economic evaluation of alternatives including time value of money, risk costs, effects of inflation, compound interest calculation, minimum attractive rate of return, capital budgeting, break-even analysis, sensitivity analysis and risk analysis. A second facet of the course covers the fundamental aspects of business management within an engineering context. This area covers the engineering procurement process, project management and project scheduling. *(Summer, Fall)*

EMGT 172. Engineering Economy (3)
Decision-making based upon engineering economy studies. This course covers techniques for economic evaluation of alternatives including time, value of money, risk costs, effects of taxation, monetary inflation, compound interest calculations, minimum attractive rate of return, capital budgeting, break-even analysis, sensitivity analysis and risk analysis.

EMGT 174. Engineering Project Management (3)
Fundamentals of project management used in estimating, planning, coordinating and controlling engineering projects. Included are fundamentals of specifications and contracts, and the scheduling of projects. *Prerequisite: EMGT 170.*

EMGT 176. Systems Engineering Management (4)
This course provides an introduction to the concepts and processes of systems engineering. It uses interactive lectures, participatory class exercises and case studies to illustrate the framing and solution of problems through a systems engineering approach. The course stresses an understanding of the interdisciplinary aspects of sys-

tems development, operations and support. *Prerequisites: MATH 39 and 55 or permission of the instructor.*

EMGT 181-185. Professional Practice (1-18)
Cooperative employment in a professional engineering environment. Students may register for a variable number of units depending upon the length of the work period. *Requires satisfactory completion of the work assignment, an exit interview with the faculty adviser and a written report. Pass/Fail only.*

EMGT 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 from the faculty member involved. Student must be in good academic standing.*

EMGT 193. Special Topics (1-4)
Special courses will be organized and offered from time to time to meet the needs of interests of a group of students. *Prerequisite: Approval of the instructor*

EMGT 195. Engineering Management Synthesis (4)
The capstone course for Engineering Management majors. Emphasis on integration and application of management concepts, including project proposal and design, with periodic reviews and written and oral reports.

EMGT 197. Undergraduate Research
Applied or basic research in focused topics within Engineering Management under faculty supervision. *Approval by the faculty supervisor and the department chairperson is required.*

School of Engineering and Computer Science Faculty

Ravi K. Jain, 2000, Dean and Professor, B.S., California State University, Sacramento, 1961; M.S., 1968; Ph.D., Texas Tech University, 1971; MPA, Management and Public Policy, Harvard University, 1980.

Gary R. Martin, 1983, Assistant Dean of Administration and Professor 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.

Louise Stark, 1992, Associate Dean and Professor of Electrical and Computer Engineering, B.S.CpE, University of South Florida, 1986; M.S.CpE, 1987; Ph.D., Computer Science and Engineering, 1990. Computer vision, artificial intelligence, digital design, computer graphics, virtual reality.

Bioengineering Program

Jeffrey S. Burmeister, 2002, Program Director and Assistant Professor of Bioengineering, B.S., Mechanical Engineering, 1988, University of Delaware; Ph.D. 1995, Duke University, Biomedical Engineering.

George Carman, 2004, Associate Professor, B.A., Cornell University, 1979, Ph.D., California Institute of Technology, 1990.

Chi-Wook Lee, 1998, Associate Professor of Mechanical Engineering, B.S.M.E., Hanyang University (Korea), 1981; M.S.M.E., University of Wisconsin-Madison, 1984; Ph.D., Mechanical Engineering, University of Florida, 1991. Mechatronics, systems dynamics, and bio-mechanics.

Douglas Modlin, 2005, Visiting Assistant Professor, B.S., California State Polytechnic University, 1975; M.S., Stanford University, 1978; Ph.D., Stanford University, 1983.

Deborah Schenberger, 2006, Visiting Assistant Professor, B.S., Mechanical Engineering, University of the Pacific, 1989; M.S., Stanford University, 1995.

Camille Troup, 2005, Visiting Assistant Professor, B.A., University of Minnesota, 1986; Ph.D., University of California San Francisco, 1996.

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.

Roger C. Crawford, 1998, Visiting Professor of Civil Engineering, B.S., University of the Pacific, 1980; M.S., Sacramento State University, 1982. Registered Professional Engineer; Engineering Sciences, Structures.

Abel A. Fernandez, 2000, Associate Professor of Civil Engineering and Director of Engineering Management, B.S., Electric Power Engineering, Rensselaer Polytechnic Institute, 1974; M.E., Electric Power Engineering, 1976; M.B.A., 1976; Ph.D., Industrial Engineering, University of Central Florida, 1995. Registered Professional Engineer. Project Management, systems engineering, resource management, risk analysis and management, modeling and simulation, optimization.

Gary M. Litton, 1993, Associate Professor of Civil Engineering, B.S., University of California, Irvine, 1980; M.S., 1990; Ph.D., 1993. Registered Professional Engineer; Environmental engineering, water quality, engineering mechanics.

Justin M. Reginato, 2005, Assistant Professor of Civil Engineering and Engineering Management, B.S., Geological Engineering, University of Nevada, Reno, 1995; M.S., University of California, Berkeley, 1997; Ph.D., 2005. Registered Professional Engineer; Project management, project finance, management of technology, geotechnical and geological engineering.

Camilla M. Saviz, 1999, Associate Professor of Civil Engineering, B.S.M.E., Clarkson University, 1987; M.S.M.E., 1989; M.B.A., New York Institute of Technology, 1991; Ph.D., Civil and Environmental Engineering, University of California, Davis, 2003. Environmental Engineering, water resources, hydrodynamic and water quality modeling, fluid mechanics.

Manar Shami, 2002, Assistant Professor of Civil Engineering, B.S. Aleppo University (Syria); M.S. University of California, Berkeley, 1991; M.Eng., 1992; Ph.D., 1995, Construction Management, Infrastructure Renovation, Green Construction.

Computer Science Department

William H. Ford, 1974, Professor and Chair of Computer Science, B.S., Massachusetts Institute of Technology, 1967; Ph.D., University of Illinois, 1972.

George Carman, 2004, Associate Professor, B.A., Cornell University, 1979, Ph.D., California Institute of Technology, 1990.

Michael Doherty, 1998, Associate Professor of Computer Science, B.S., University of Florida, 1983; M.S., University of Rhode Island, 1992; Ph.D. University of Colorado at Boulder, 1998.

David A. Lundy, 1983, Senior Lecturer in Computer Science, B.S., University of Oregon, 1975; MBA, California State College, Stanislaus, 1987.

Charles E. Neilsen, 1986, Assistant Professor of Computer Science, B.S., University of the Pacific, 1982; M.S.S.M, University of Southern California, 1985.

Cathi Schuler-Sawyer, 1993, Assistant Visiting Professor in Computer Science, B.A., University of California, Santa Barbara, 1974; MSW, California State University, Sacramento, 1976

Doug Smith, 1970, Professor of Computer Science, B.S., University of Washington, 1964; MAT, Harvard University, 1965; Ph.D., University of Washington, 1970.

William R. Topp, 1970, Professor of Computer Science, B.A., St. Louis University, 1963; M.A., 1964, M.S. University of Washington, 1967; Ph.D., 1968.

Electrical and Computer Engineering Department

Rahim Khoie, 2002, Professor and Chair of Electrical and Computer Engineering , BSEE, 1977, Abadan Institute of Technology, Abadan, Iran; M.S., 1980, University of Pittsburgh,; Ph.D., 1986, University of Pittsburgh. High speed electron devices, Quantum effect devices, Solid state physics, Renewable energy, Analog and digital electronics, and Embedded Systems.

Michael Golanbari, 2003, Assistant Professor of Electrical and Computer Engineering, B.S.E.E., University of Texas, Dallas, 1989; M.S.E.E., 1991; Ph.D., University of California, Davis, 1999. Wireless communications, digital communications, digital signal processing, linear systems.

Kenneth F. Hughes, 1993, Associate Professor of Computer Engineering, B.S., Information and Computer Science, Georgia Institute of Technology, 1985; M.S., Computer Science, University of South Florida, 1989; Ph.D., Computer Science and Engineering, University of South Florida, 1994. Robotics, sensors and sensor fusion, computer vision, artificial intelligence, embedded systems, microprocessors and microcontrollers, digital systems.

Julie A. Kenrow, 1999, Associate Professor of Electrical and Computer Engineering, B.S., Physics, University of California, Davis, 1986; M.S.E.E., 1989; Ph.D., Electrical Engineering, University of California Berkeley, 1994. Electron-phonon scattering, semiconductor devices, electronic circuits, computational electronics, quantum electronics, electromagnetics, visualization.

W. Joseph King, 1983, Professor of Electrical 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, microprocessors, neural networks, computer graphics.

George W. Schroeder, 1981, Emeritus Professor of Electrical and Computer 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.

Charian Mathews, 2005, Associate Professor of Electrical and Computer Engineering, B.E. in Electrical Engineering, Anna University, Chennai, India, 1987; M.S. in Electrical Engineering, Purdue University, 1989; Ph.D. in Electrical Engineering, Purdue University, 1993; Statistical signal processing, Array signal processing, Direction of arrival estimation, Real-time digital signal processing using DSP processors, Microcontroller applications.

Louise Stark, 1992, Associate Dean and Professor of Electrical and Computer Engineering, B.S.CpE, University of South Florida, 1986; M.S.CpE, 1987; Ph.D., Computer Science and Engineering, 1990. Computer vision, artificial intelligence, digital design, computer graphics, virtual reality.

Richard H. Turpin, 1984, Emeritus Professor, 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, digital signal processing.

Engineering Management Program

Abel A. Fernandez, 2000, Associate Professor of Civil Engineering and Director of Engineering Management, B.S., Electric Power Engineering, Rensselaer Polytechnic Institute, 1974; M.E., Electric Power Engineering, 1976; M.B.A., 1976; Ph.D., Industrial Engineering, University of Central Florida, 1995. Registered Professional Engineer. Project Management, systems engineering, resource management, risk analysis and management, modeling and simulation, optimization.

Justin M. Reginato, 2005, Assistant Professor of Civil Engineering and Engineering Management, B.S., Geological Engineering, University of Nevada, Reno, 1995; M.S., University of California, Berkeley, 1997; Ph.D., 2005. Registered Professional Engineer; Project management, project finance, management of technology, geotechnical and geological engineering.

Engineering Physics Program

Julie A. Kenrow, 1999, Director of Engineering Physics Program and Assistant Professor of Electrical and Computer Engineering, B.S., Physics, University of California, Davis, 1986; M.S.E.E., 1989; Ph.D., Electrical Engineering, University of California Berkeley, 1994. Electron-phonon scattering, semiconductor devices, electronic circuits, computational electronics, quantum electronics, electromagnetics, visualization.

Mechanical Engineering Department

Brian L. Weick, 1995, Chair and Associate Professor of Mechanical Engineering, B.S.M.E., Union College, 1986; M.S.M.E., Virginia Polytechnic Institute and State University, 1990; Ph.D., Materials Engineering Science, 1993. Manufacturing Processes, Materials Science, Design, Tribology and Viscoelasticity.

Ashland O. Brown, 1991, Professor of Mechanical Engineering, B.S.M.E., Purdue University, 1966; M.S.M.E., University of Connecticut, 1968; Ph.D., 1974. Licensed Professional Engineer; fluid mechanics, thermal sciences and finite element analysis.

Jeffrey S. Burmeister, 2002, Assistant Professor of Bioengineering, B.S., Mechanical Engineering, 1988, University of Delaware; Ph.D. 1995, Duke University, Biomedical Engineering.

Chi-Wook Lee, 1998, Associate Professor of Mechanical Engineering, B.S.M.E., Hanyang University (Korea), 1981; M.S.M.E., University of Wisconsin-Madison, 1984; Ph.D., Mechanical Engineering, University of Florida, 1991. Mechatronics, systems dynamics, and bio-mechanics.

Jian Cheng Liu, 2006, Assistant Professor of Mechanical Engineering, B.S., Taiyuan University of Technology (China), 1984; M.S., 1987; Ph.D., Himeji Institute of Technology, now named University of Hyogo (Japan), 1996. Manufacturing, machine design.

Edwin R. Pejack, 1982, Professor of Mechanical Engineering, B.S.M.E., Rensselaer Polytechnic Institute, 1961; M.S.M.E., 1962; Ph.D., The Ohio State University.

Kyle A. Watson, 2003, Assistant Professor of Mechanical Engineering, B.S.M.E., Villanova University, 1995; M.S., North Carolina State University, 1997; Ph.D., 2002. Thermal sciences, fluid mechanics, combustion.

Office of Cooperative Education and Special Programs

Gary R. Martin, 1983, Assistant Dean of Administration and Professor 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.

Tod C. Bannister, 2000, Assistant Professor and Coordinator of Cooperative Education, B.A., California State University, Sacramento. Social Science (Government).

James A. Cardenas, 2002, Director of MEP (Multicultural Engineering Program)/Coordinator of Cooperative Education; 1998, M.B.A., University of Phoenix, San Jose Campus; 1992, BSEE, University of the Pacific, Stockton, CA.

MESA

Maria Garcia-Sheets, 1995, Director of MESA (Mathematics, Engineering and Science Achievement) Schools Program and the MESA Engineering Program, B.A., University of California, Davis, 1991; M.A., Communication, University of the Pacific, 1999.

school of international studies

Dean
Margee Ensign

Assistant to the Dean

Director of Student Affairs
Mary-Lou Tyler

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Website
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Degrees
Master of Arts in Intercultural Relations
Bachelor of Arts in International Relations and Global Studies
Concentrations:
- Regional Studies
- Peace and Conflict
- Global Economic Relations
- International Politics
- Self-Designed

Minor in International Studies

An undergraduate professional school devoted to the study of global affairs, offering students one major with a choice of concentrations, and including a semester of study abroad in one of more than 100 locations in over 50 countries.

The newest school at University of the Pacific, one of only six undergraduate schools of international studies in the country, SIS offers a unique and challenging program of study. The 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, geography, and anthropology. The major in International Relations and Global Studies is designed to prepare students for careers in government, business, law, journalism, education and other professions in the most globally integrated society in human history.

The School stresses close faculty-student contact, student participation in School governance, and a supportive community atmosphere. The international dimensions of experience are brought to the student by coursework and study abroad as well as the School's lecture series, internships, and student participation in world affairs conferences.

For a student planning a career in public service, cross-cultural understanding, research, business, or policy analysis and advocacy, the School of International Studies provides a small and supportive community of students and scholars dedicated to understanding and helping to shape the world of the 21st century.

General Education Requirements

Students entering college for the first time are required to take Pacific Seminar I, Pacific Seminar II, and Pacific Seminar III in addition to six courses from the breadth program. These breadth courses must come from sections IA, IB, IIA, IIC, IIIA and IIIB. Courses taken for the major can also fulfill these general education requirements.

Transfer students are required to take Pacific Seminar III and eight courses from the breadth program. These breadth courses must come from sections IA, IB, IC, IIA, IIB, IIC, IIIA, and IIIB. Courses taken for the major can also fulfill these general education requirements.

An Advanced Placement test score of 4 or 5, or an International Baccalaureate score of 5-7 in foreign language or calculus can fulfill the SIS General Education requirement in area IIA or IIIB.

Core Requirements

- INTL 10 Dean's Seminar (required for entering freshmen only)
- INTL 77 Contemporary World Issues
- POLS 11 Introduction to Political Science
- INTL 81 Perspectives on World History
- ANTH 53 Cultural Anthropology
- INTL 101 International Research Methods
- ECON 53 Introductory Microeconomics
- INTL 105 Globalization, the US & the World
- ECON 55 Introductory Macroeconomics
- INTL 113 World Geography for the Social Sciences
- POLS 51 International Politics
- INTL 151 Cross-cultural Training I
- Competence in a modern foreign language equivalent to four semesters of college work.
- At least one semester of study abroad. The semester abroad must be in a program approved by the adviser as appropriate to the major.
- INTL 161 Cross-cultural Training II
- ECON 71 Global Economic Issues
- INTL 165 Development, Modernization, and Cultural Change
- INTL 193 SIS Capstone

Seniors with a 3.0 GPA or above may choose to complete a four unit senior thesis/independent research project (INTL 197) under the supervision of a cooperating professor. Students completing a Senior Thesis with a B+ or better grade will earn an SIS Honors Research designation.

Concentrations

Students in the School of International Studies are encouraged to pursue an optional concentration. Concentrations include upper-division courses, often in a specific discipline, that allow students a deeper education in a particular arena of international relations and global studies. Concentrations are particularly important for students considering graduate school.

Regional Studies (10-12 units on one world region or country, TBA with adviser)

The multidisciplinary Regional Studies concentration is designed in consultation with a student's adviser. Students take coursework that allows them to develop a greater understanding of a particular country (i.e. Ireland) or particular world region (i.e. East Asia).

International Politics (10-12 units from POLS 160, 162, 164)

The International Politics concentration focuses a student's education on the politics of international relations. Students complete advanced coursework in political science, choosing from courses in foreign policy, international political economy, international conflict, international political theory, and/or international law and organizations.

Global Economic Relations (10-12 units from ECON 121, 123, 125, 190)

The concentration in Global Economic Relations encourages students to pursue a deeper education in international economics. Students take advanced economics coursework on topics such as international trade and finance, economic development, and the history of globalization.

Peace & Conflict (10-12 units from POLS 166, HIST 62, 64, 65)

The multidisciplinary Peace & Conflict concentration includes coursework in political science and history. As the name suggests, the concentration focuses on the specific issues of war and peace in the international system.

Self-design (10-12 units, TBA with adviser)

In consultation with their advisors, students may choose to take advanced coursework in a multidisciplinary or discipline-specific concentration in international relations and global studies. (Examples of self-designed concentrations might include Anthropology, International Law, International Development).

Modifications in SIS Major for Students From Abroad (Mirror Image Students)

1) Study Abroad requirement: May be waived by the SIS Academic Standards and Committee, on petition by the student.

2) Language requirement: This will be waived by the Director of Student Affairs for a student fluent in a first language other than English.

3) Cross-cultural Training I (INTL 151) and Cross-Cultural Training II (INTL 161) will be waived for all Mirror Image Students who do not go on a Pacific Study Abroad program.

Minor in International Studies

The minor in International Studies helps students from other disciplines prepare for globalization in the 21st century by systematically deepening their understanding of the world outside of the U.S. All minors in international studies start with an introductory course on the world of the 20th century, followed by one of three different international tracks. At least 10 units in the international studies minor must come from courses taken at University of the Pacific or through an approved study abroad program. Students pursuing a major in the School of International Studies are not eligible for an SIS minor. A student interested in the International Studies minor should consult with the SIS Director of Student Affairs early in his or her academic planning.

The specific requirements for the SIS minor are as follows:

Diverse Academic Track

- INTL 77 – Contemporary World Issues
- INTL 81 – Perspectives on World History
- A minimum of 14 units of courses selected from SIS Course Offerings, 8 of the units may include Modern Language and Literature courses.

Foreign Language Track

- INTL 77 – Contemporary World Issues
- Demonstrated competence in a modern foreign language at least equivalent to successful completion of the fourth semester of college language study. This language may not be the same one used to complete a major in the Department of Modern Language and Literature.
- One course in Modern Language and Literature taken at the University of the Pacific or on an approved study abroad program.
- A minimum of 12 units of courses selected from SIS Course Offerings.

Study Abroad Track

- INTL 77 – Contemporary World Issues
- INTL 151 – Cross-cultural Training I
- INTL 161 – Cross-cultural Training II
- A semester of an approved overseas study
- A minimum of 10 units of courses selected from SIS Course Offerings.

Study Abroad – International Programs and Services

University of the Pacific sponsors a wide variety of study abroad options for all students. Currently, International Programs and Services in the Bechtel International Center makes available 100 locations in more than 50 countries. Students should consult the most recent edition of the Study Abroad Directory, which is available in the Study Abroad library. The Directory gives brief descriptions of programs, admissions requirements, University policies pertaining to study abroad and general advice. International Programs and Services 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 Pacific grade point average of 2.75. SIS students must have a least a 2.75 Pacific GPA and have completed all university fundamental skills requirements at the time they apply to study abroad. Many programs require higher GPAs.

Course Offerings

INTL 10. Dean's Seminar (1)
A general introduction to making a successful transition to college. Emphasis on styles of learning, research, writing and presentation skills, collaborative learning, critical thinking and self-assessment. *Required for all SIS first year students.*

INTL 77. Contemporary World Issues (4)
An introduction to the most important current global issues through a look at their contemporaneous history over the last century. Examines the political, economic, and cultural changes around the world that have led to today's problems and opportunities.

INTL 77L. Twentieth Century Thru Videos (1)
Complementing INTL 77 (Contemporary World Issues), this video course offers historical footage of significant persons, events, and movements around the world throughout the 20th century. The discussion of the videos seeks to deepen our understanding of the atmosphere and attitudes surrounding significant events of the 20th century. *Prerequisite: Concurrent enrollment in INTL 77, or permission of the instructor.*

INTL 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. General education IIB.

INTL 93. Special Topics (1-4)
Occasional offerings on topics of current interest to faculty and students. Normally will have no prerequisite.

INTL 101. International Research Methods (4)
An introduction to how research is conducted in the social sciences, with emphasis on the problems that which occur in international studies research. Shows how qualitative and quantitative research complements each other. Compares research methodologies in the different social science disciplines. Introduces basic statistical methods for analyzing social scientific data, and introduces the use of computers for quantitative analysis.

INTL 105 Globalization, the U.S. and the World (4)
This interdisciplinary course surveys the changing nature of global relations, focusing on political, economic, and cultural aspects of globalization and the US role in global affairs. Studies US governance (including the institutions of government) in comparative perspective in order to better understand the country's position in the world. Addresses the meaning and implications of globalization: what impact does it have on democracy in the world, the global environment, etc.

INTL 113. World Geography for the Social Sciences (4)
An interdisciplinary course on economic, political, and cultural geography around the world, emphasizing the evolving pattern of globalization. Shows how the physical geography and historical geography in ten world regions have led to today's differences in economies, governance systems, and cultural patterns in those regions. Examines the extent to which convergence may be occurring due to globalization. *Prerequisites: ECON 53, sophomore standing.*

INTL 113L. Videos for World Geography (2)
Complementing INTL 113 (World Geography), this course offers documentary videos that which bring to life geographical concepts. Each video focuses on a different society, showing insights into the way that geography influences the economy, politics, and culture of a society. The discussion of each video gives a deeper appreciation of human geography – the similarities and differences among people and societies around the world. The discussion also shows the importance of geography in understanding the current international news. *Prerequisite: Concurrent enrollment in INTL 113, or permission of the instructor.*

INTL 123. 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 Lagos, Berlin, Sao Paulo, Tokyo, Paris or Mobile. General Education IC.

INTL 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. *Prerequisite: Students must have a Pacific GPA of at least 2.75 and have completed all university fundamental skills requirements at the time of enrollment.*

INTL 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, communication styles and channels, alterations in value structure, and models for characterizing personal and cultural change. *Prerequisite: CCTI and study abroad.*

INTL 165. Development, Modernization, and Cultural Change (4)
The purpose of this course is to examine what we know about defining and measuring sustainable human development in the areas of: economic development; political development (governance, democracy and civil society); human development (health, population, nutrition and gender issues); health, education, environmentally-sustainable development, and the areas of disasters and failed states. This course is interdisciplinary and problem-oriented. Using databases that will be made available, students will undertake country and context specific analyses and case studies. The successful completion of this course will equip students with an interdisciplinary and holistic understanding of sustainable human development. Finally the emphasis placed on comparative analysis will help the student to gain a deeper understanding of a country in a broader regional and international context. *Prerequisites: POLS 11, ANTH 53, ECON 53, or permission of the instructor.*

INTL 174. Global Environmental Policy (4)
An examination of the major environmental problems confronting the world today and an analysis of specific policies formulated to address those problems. Among the issues to be studied are deforestation, atmospheric and marine pollution, climate change, ozone depletion, and species loss. *Prerequisite: POLS 51.*

INTL 175. SIS Mentor III: Ethics Across Cultures (4)
An interdisciplinary approach to helping students become aware of how they think about ethics. Puts students' experiences in more than one culture into an ethical framework, and prepares students for ethical action in their professional lives. Looks at philosophical and religious bases for ethical decision making in different cultures. Uses case studies to show applications of different ways of approaching ethical dilemmas. As a capstone course for international studies students, it explores ethical issues associated with human rights, development, the environment, sovereignty, war, refugees, and international business practices. Students prepare an ethical biography of a significant person who has spent considerable time in two different cultures. Students also prepare their own ethical autobiographies. *Prerequisite: INTL 151 (Cross Cultural Training I) and overseas study for a semester, or a bi-cultural background (with instructor's permission).*

INTL 187. Internship (4)
An internship, approved and supervised by a faculty adviser, is an opportunity for a student to intellectually reflect on a supervised work experience in a setting appropriate for the student's career and life goals.

INTL 191. Independent Study (1-4)
Ordinarily limited to SIS juniors and seniors. Requires permission of the instructor.

INTL 193. Special Topics (1-4)
Occasional offerings on topics of current interest to faculty and students. Normally will have a prerequisite.

INTL 197. Independent Research (2-4)
Advanced students are offered the opportunity to design and complete an independent research project under the direction of a faculty member beyond the requirements of other course work. *Prerequisite: G.P.A. 3.0. Requires permission of the instructor.*

ANTH 53. Cultural Anthropology (4)
An introduction to the anthropological view of humanity, 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. General Education IC.

ANTH 112. Physical Anthropology (4)
A detailed examination of human origins and an evaluation of human's place in the natural world. Topics include geological environments, nature of life, reproduction and genetics, the fossil record, primatology, early human, 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. General Education IIIC.

ECON 71. Global Economic Issues (4)
An introduction to all aspects of the global economy. Consideration of how the U.S. economy is linked to the rest of the world and how the world's economic problems affect the well-being of every U.S. citizen. Reviews economic principles in covering the basics of international trade, international finance, globalization, economic development of the poor countries and a selection from world population problems, international environmental economics, and transaction economics. *Prerequisites: ECON 53 and 55 (or 51). (ECON 71 cannot be taken for credit if the student is currently enrolled in or has already taken ECON 121 or 123).*

ECON 121. International Trade (4)
A study of various economic trade theories and their application to major international issues today. Topics include the determination of trade patterns; the distributional effects of changing trade patterns; an analysis of tariffs, non-tariff barriers, dumping and trade blocs; and trade issues of developing countries. *Prerequisites: ECON 53 and 55.*

ECON 123. International Finance (4)
A study of the financial side of international economics. Topics include balance of payments accounts and the foreign exchange market; exchange rate determination and the macro economy; the international debt crisis and capital flight; and the history of international monetary systems. *Prerequisites: ECON 53 and 55.*

ECON 125. Economic Development (4)
Examines the plight of the world's poor countries and the extent of world poverty, reviewing the evolution of ideas on the topic of economic development. Asks: 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 geography and climate, natural resources, religious beliefs, the legal system, education, health and sanitation, technology, multinational corporations, and foreign aid? Can or should rich countries meaningfully help poor countries? Should a development plan emphasize the agricultural or the industrial sector? *Prerequisites: ECON 53 and 55 or permission of the instructor.*

ECON 190. Econometrics (4)
A study of the methods used to test economic theory with real-world data. The course presents the theory underlying common econometric methods and gives students experience in applying these analytical tools to data from a variety of sources. Students learn to develop testable hypotheses based on economic theories they have learned in earlier courses and to make reliable statistical inferences about these hypotheses. Students will gain a working, applicable knowledge of the skills and software used by many professional economists and sought by many employers. Prerequisites: ECON 53 and 55 (or 51) and MATH 37 or 39 or 130 or 131.

POLS 141. Western European Comparative Politics (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 Germany; 3) contemporary problems facing the advanced capitalist states of Western Europe. *Prerequisite: POLS 11 or permission of the instructor.*

POLS 148. Politics of the Middle East (4)
Comparative study of contemporary politics in the Middle East, emphasizing the problems of development, and the background, issues and political forces involved in the Arab-Israeli conflict. General Education IC.

POLS 150. Political Development (4)
A general introduction to the problems and politics of post-colonial or less developed countries, including case studies from Asia, Africa and Latin America.

POLS 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. General Education IC.

POLS 160. Theories of International Politics (4)
Intensive study of the principal analytical and normative theories of international politics and behavior. *Prerequisite: POLS 51 or permission of the instructor.*

POLS 162. International Organization (4)
Examination of the role of international organizations and international law 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: POLS 51 or permission of the instructor.*

POLS 164. International Political Economy (4)
An examination of the major analytical and substantive issues in the field of international political economy, 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: ECON 55 or permission of the instructor.*

POLS 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: POLS 51 or permission of the instructor.*

POLS 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., China, India, Europe, and certain smaller states. *Prior completion of a basic course in political science is recommended.*

POLS 170. U.S. 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. P*rerequisites: POLS 11 and 41.*

POLS. 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.

Additional Courses of Particular Interest to SIS Majors

National Courses

ARTH 120	Chinese Art History
ARTH 122	Japanese Art History
ENGL 43	British Literature after 1800
HIST 114	Modern Germany
HIST 115	History of Modern Russia
HIST 116	History of Soviet Foreign Policy
HIST 142	Modern Chinese History
HIST 143	Modernization of Japan
HIST 151	History of Mexico
FREN 51	French Literature in English
FREN 114	Civilisation Française B
FREN 118	Littérature Française B
FREN 120	Le Cinéma Française
FREN 124	Individu et Societe
FREN 126	Penseurs et Philosophes
FREN 128	Images et Voix de Femmes
GERM 106	German Culture and Society II
GERM 124	German Writers of the Nineteenth Century
GERM 134	Modern German Prose
GERM 136	Modern German Drama
JAPN 125	Advanced Japanese I
JAPN 126	Advanced Japanese II
JAPN 170	Japanese Literature in Translation
JAPN 172	Japanese Culture and Civilization
JAPN 174	Modern Japanese Theatre
JAPN 180	Modern Japanese Fiction
PORT 126	Reading and Discussion on Luso-Brazilian Culture
RUSS 73	Russian Culture and Civilization
RUSS 120	Russian Cinema
RUSS 193	Special Topics
SPAN 112	Civilización Española
SPAN 120	Narrativa hispánica
SPAN 128	Teatro hispánico
SPAN 135	Literatura hispanoamericana del Siglo XX

Regional Courses

ARTH 9	Survey of Western Art After 1400
ARTH 112	19th Century European Art
ARTH 114	20th Century European Art and Film
CHIN 120	Asian Cinema
HIST 11	History of Western Civilization II
HIST 31	East Asian Civilization II
HIST 41	Latin American Civilization II
HIST 104	The European Age, 1815-1914
HIST 111	Europe in Turmoil, 1900-1945
HIST 112	History of the Holocaust
HIST 113	Europe Since 1945
HIST 140	Southeast Asia and the West
HIST 150	Women in Latin America
POLS 141	West European Comparative Politics
POLS 146	Latin American Politics
POLS 148	Politics of the Middle East
SPAN 135	Literatura Hispanoamericana del Siglo XX

Courses Comparing World Regions

ARTH 116	Contemporary Art and Film
BIOL 35	Environment: Concepts & Issues
BUSI 169	Comparative Management (see catalog description for prerequisites)
COMM 143	Intercultural Communications
ECON 125	Economic Development
INTL 123	Literature Across Cultures
MHIS 6	Music of the World's Peoples
POLS 150	Political Development
POLS 152	Politics of Asia
POLS 168	Comparative Foreign Policy
RELI 74	Autobiography and Religion
RELI 134	World Religions
RELI 135	Asian Religious Traditions
RELI 170	Religion and Modern Literature
SOCI 108	Food, Culture and Society
SOCI 114	Social and Cultural Change
SOCI 123	Sex and Gender

Courses on Global and International Interaction

BUSI 163	International Financial Management
BUSI 165	International Marketing
BUSI 167	International Business Law
ECON 71	Global Economic Issues
ECON 121	International Trade
ECON 123	International Finance
HIST 62	History of Warfare
HIST 64	Peace and War-Honors
HIST 65	Women and War
HIST 116	History of Soviet Foreign Policy
HIST 140	Southeast Asia and the West
INTL 174	Global Environmental Policy
POLS 51	International Politics
POLS 162	International Organization
POLS 164	International Political Economy
POLS 166	International Conflict and Conflict Management
POLS 170	U.S. Foreign Policy
POLS 172	Inter-American Relations

Comparative Politics Courses

POLS 141	Western European Comparative Politics
POLS 146	Latin American Politics
POLS 148	Politics of the Middle East
POLS 150	Political Development
POLS 152	Politics of Asia

Foreign Policy Courses

HIST 116	History of Soviet Foreign Policy
POLS 168	Comparative Foreign Policy
POLS 170	U.S. Foreign Policy

International Politics Courses

BUSI 167	International Business Law
INTL 174	Global Environmental Policy
POLS 160	Theories of International Politics
POLS 162	International Organization
POLS 164	International Political Economy
POLS 166	International Conflict and Conflict Management

Global Economic Relations Courses

BUSI 163	International Financial Management
BUSI 165	International Marketing
BUSI 167	International Business Law
BUSI 169	Comparative Management
ECON 121	International Trade
ECON 123	International Finance
ECON 125	Economic Development
POLS 162	International Organization
POLS 164	International Political Economy

Affiliated Faculty

Margee Ensign, 1998, Professor and Dean, B.A., New College, 1977; Ph.D., University of Maryland, 1982.

Laura Bathurst, 2005, Assistant Professor of Anthropology, B.A., Kansas State University, 1997; M.A., University of California, Berkeley, 1999; Ph.D., 2005.

Gene E. Bigler, 2005, Visiting University Professor/Practioner, B.A., University of the Pacific, 1967; M.A., Johns Hopkins University 1972; Ph.D., 1979.

Martin Burt, 2005, Visiting Professor of Social Entrepreneurship, B.A., University of the Pacific, 1980; M.A., George Washington University, 1983.

Arturo Giraldez, 1990, Professor, B.A., Universidad Com-plutense de Madrid, 1976; M.A., 1979; Ph.D., Spanish and Portuguese, University of California, Santa Barbara, 1990; Ph.D., History, University of Amsterdam, 1999.

Gigi Gokcek, 2004, Assistant Professor of Political Science, B.A., University of California, Irvine, 1993; M.A., Monterey Institute of International Studies, 1997; M.A., University of California, Santa Barbara, 1999; Ph.D., 2004.

Gerald J. Hewitt, 1969, Professor Emeritus, B.A., University of Notre Dame, 1963; M.A., University of Chicago, 1966; Ph.D., 1973.

David Keefe, 1978, Associate Professor of Economics, B.S., Cornell University, 1965; Ph.D., University of California, Berkeley, 1980.

Bruce W. LaBrack, 1975, Professor of Anthropology, B.A., University of Arizona, 1967; M.A., 1969; M.Phil., Syracuse University, 1975; Ph.D., 1979.

Howard Moseley, 2005, Instructor, B.A., University of the Pacific, 1989; J.D., University of the Pacific, McGeorge School of Law, 1996.

Greg C. Rohlf, 2001, Assistant Professor of History, B.A., Luther College, 1988; M.A. University of Michigan, 1993; Ph.D. University of Iowa, 1999.

Susan Sample, 1999, Associate Professor of Political Science, B.A., University of Missouri, 1991; Ph.D., Vanderbilt University, 1996.

Elena Savelieva, 1992, Instructor, Area Studies in Russian, B.A., Leningrad State University, 1969; M.A., 1971.

Cortlandt B. Smith, 1970, Professor Emeritus, B.A., University of California, Berkeley, 1968; M.A., 1969; Ph.D., 1975.

Jean-Marie Stratigos, 2005, Visiting Professor, M.B.A., Institut Superieur de Gestion, 1988; M.A., Paris VII Sorbonne, 1998; Ph.D. candidate, Ecoles des Hautes Etudes en Sciences Sociales.

the thomas j. long school of pharmacy and health sciences

Dean
Phillip R. Oppenheimer

School Telephone
209.946.2561

Website
www.pacific.edu/pharmacy

Contents

A professional school dedicated to the training of pharmacists, physical therapists and speech-language pathologists in modern healthcare delivery.

Mission

The mission of the Thomas J. Long School of Pharmacy and Health Sciences is to prepare students for lifelong success in health careers by providing an excellent, student-centered learning environment. We want to develop in our students, leadership and a strong commitment to their professions and to society. These efforts are assisted by the linkages across the University's professional and liberal arts programs. We support outstanding professional and graduate teaching, research and other scholarly activity, and service as the means of achieving our mission.

The school administers four areas of study; the Doctor of Pharmacy Program, the Pharmaceutical and Chemical Sciences Graduate Program, the Physical Therapist Professional Education Program, and the Speech Language Pathology Program.

Pharmacy Mission

The mission of the Pharmacy program is to educate men and women to lead socially useful and productive lives serving the needs of society and the health-related professions. We are committed to providing an environment of academic excellence and social responsibility that facilitates the propagation and acquisition of knowledge related to the provision of pharmaceutical care and the disciplines in pharmacy education. We recognize a responsibility to professional and graduate students, practitioners, educators, scientists and others to provide the necessary skills and opportunities for their lifelong learning in a student- centered environment. Faculty advance knowledge through research and professional involvement. They provide their special expertise toward solving the challenges facing pharmacy, the health-related professions and society.

Degrees in Pharmacy

The Thomas J. Long School of Pharmacy and Health Sciences offers the Doctor of Pharmacy degree and graduate degrees in pharmaceutical sciences. 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 degree 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 in the senior year. This component is described in detail in other literature available from the Admissions Office.

In addition to the Doctor of Pharmacy professional degree, the graduate degrees Master of Science and Doctor of Philosophy are available through the Graduate School in conjunction with the Thomas J. Long School of Pharmacy and Health Sciences.

Pre-Pharmacy Advantage Programs

Pacific offers first-time undergraduate freshmen three options that can lead to guaranteed admission into the Doctor of Pharmacy program. The options are the five-year (2+3) Pre-Pharmacy/ Pharm.D. option, the six-year (3+3) Pre-Pharmacy/ Pharm.D. option and the seven-year (4+3) Bachelor's/ Pharm.D. option. Specific admission criteria for each ensure that students have the appropriate time to successfully prepare for advancement into the professional pharmacy program. Interested students should contact the Admissions Office and request information about the Pacific Pre-Pharmacy Advantage Program.

Accreditation

Organized in 1955, the Thomas J. Long School of Pharmacy and Health Sciences is a member of the American Association of Colleges of Pharmacy, and its Doctor of Pharmacy Program is fully accredited by the Accreditation Council for Pharmacy Education (ACPE). Specific accreditation documentation requests may be made to ACPE, 311 West Superior Street, Suite 512, Chicago, IL 60610; (312) 664-3575, (800) 533-3606, Fax (312) 664-4652.

Pharmacy Licensure

For California pharmacy licensure requirements write California State Board of Pharmacy, 1625 N. Market Blvd., Suite N219, Sacramento, CA 95834.

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 Doctor of Pharmacy program with a U.S. baccalaureate degree and students who have met the General Education requirements of another college or university are not required to meet the University General Education requirements. These requirements are listed elsewhere in this catalog.

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 and (2) organic chemistry with lab, eight semester units minimum. Coursework should be designed for chemistry or biology majors.
- Biological Sciences: General biology, eight semester units with laboratory both semesters; coursework may include two semesters zoology, one semester each botany and zoology, or two semesters of general biology designed for biology majors; general microbiology, four units.

Liberal Arts

- English Composition: Two semesters, minimum (Eng. 1A-1B or equivalent)
- Public Speaking: Three semester/four quarter units, minimum.
- Psychology: One semester, 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 pre-pharmacy 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 communicate with the Pacific Admissions Office regarding questions on the above requirements.

Admission to the Professional School

For information about admission to the Doctor of Pharmacy Program, see the "Special Requirements for Pharmacy Applicants" section under Admission Requirements at the front of this catalog. The pharmacy faculty determines admission requirements but the Office of Admission manages the admissions process. Questions regarding admission should be directed to the Office of Admission. The program places strong emphasis on the academic record, verbal and written communication skills, demonstrated interest in healthcare and leadership qualities in the selection process. The School attempts to select students with strength in all of these areas. After review of the completed application, the Office of Admission will invite qualified candidates to participate in interviews on campus and a writing demonstration. Admissions decisions will be based on the application, the interviews and the writing sample.

Continuation/Progression Requirements

Students must successfully pass each required course in each semester in order to be allowed to enroll in the subsequent semester. Because of the integrated nature of the pharmacy curriculum, students are not permitted to enroll in pharmacy courses out-of-sequence. In order to remain in good academic standing, a student must maintain a "C" average (a grade point average of 2.0 on a 4-point scale) in (1) all required professional course work in the Doctor of Pharmacy curriculum and (2) all University course work. A student who has a major grade point deficiency may not enroll in clinical experience rotations until the deficiency is removed.

All requirements for the Doctor of Pharmacy degree must be completed within 5 calendar years of the student's initial enrollment in the Doctor of Pharmacy program.

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 Thomas J. Long School of Pharmacy and Health Sciences reserves the right to modify or change the curriculum at any time without prior notice.

Minimum Unit Requirements

Doctor of Pharmacy — 200 semester units (pre-pharmacy plus pharmacy)

Residency Requirements:

Eight semesters of Thomas J. Long School of Pharmacy and Health Sciences residency are required for 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) Pharm.D. "major" courses (all required courses) and (2) Thomas J. Long School of Pharmacy and Health Sciences residency coursework (all courses taken while in residence in the professional program)

Thomas J. Long School of Pharmacy and Health Sciences Academic Standards:

Because of the integrated nature of the pharmacy curriculum, students are not permitted to enroll in Doctor of Pharmacy courses out of sequence. In order to remain in good academic standing, a student must maintain a C average in all required professional coursework. Students with a major, required course grade point deficiency of from 8.0 to 12.0 are not permitted to enroll in new required courses. Students with a major, required course grade point deficiency of 12.0 or greater are disqualified from the professional program.

Professional Electives:

All candidates for the Doctor of Pharmacy degree are required to complete a minimum of four semester units of career-related electives while in residence. These may be 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 Doctor of Pharmacy degree are required to complete a minimum of 28 semester units of liberal arts courses in pre-pharmacy.

Graduate Degree Programs in Pharmacy

The Thomas J. Long School of Pharmacy and Health Sciences has programs leading to the Master of Science and Doctor of Philosophy degrees, Combined Pharm.D./Ph.D. and Pharm.D./M.S. and Pharm.D./MBA degree programs are also offered. These unique dual-degree programs are intended for students who are interested in careers in research, teaching or business but who wish to also possess a professional degree in pharmacy. The entrance requirements include all pre-pharmacy Pharm.D. requirements, a baccalaureate degree with a minimum GPA of 3.0 and certain other standards.

A goal of the school is to provide a scholarly environment to support research in basic and applied pharmaceutical knowledge, to encourage fundamental discovery in healthcare sciences and the attainment of advanced degrees. The School attempts to provide students the opportunity for interdisciplinary programs within the pharmaceutical sciences. Students are encouraged to combine the specialties of several of the faculty into unique interdisciplinary programs which will meet their individual educational objectives.

Interested individuals may obtain further information by writing directly to the Dean of the Graduate School or the Dean of the Thomas J. Long School of Pharmacy and Health Sciences or the Director of the Pharmaceutical and Chemical Sciences Graduate Program.

Pharmaceutical and Chemical Sciences Graduate Program

The Pharmaceutical and Chemical Sciences Graduate Program is an interdisciplinary program offered by the Department of Chemistry in College of Pacific and the Departments of Physiology and Pharmacology, Pharmaceutics and Medicinal Chemistry, and Pharmacy Practice in the Thomas J. Long School of Pharmacy and Health Sciences. The program is very closely aligned with industrial interests and is guided by an external advisory board consisting of scientists, executives, practitioners, and Pacific Alumni from pharmaceutical, biotechnical and chemical companies as well as research institutes and other universities.

The mission of the Pharmaceutical and Chemical Sciences Graduate Program is to prepare Doctor of Philosophy and Master of Science graduates for increasingly complex and integrated research in the pharmaceutical, chemical, and biotechnological environment. This integrated, multidisciplinary program will provide a student-centered learning environment and will produce new scientists with broad and in-depth training, preparing them for careers involved with interdisciplinary research/development.

General Admission Information

Each department evaluates applicants on their record of academic performance, Graduate Record Exam scores, personal statement, and the availability of faculty as advisors to determine the qualification and potential of the students.

General Admission Requirements

- Graduate Record Exam (GRE, general exam)
- GPA of 3.0 or above in all upper division undergraduate work
- Three letters of recommendation
- Personal statement of professional goals
- Official transcripts of all undergraduate and graduate work

International Applicants

For applicants from countries where English is not the primary language, a minimum TOEFL score of 550 (paper-based), or 213 (computer-based), is required. Applicants applying for a teaching assistantship, minimum acceptable TOEFL scores are 575 (paper-based), or 231 (computer-based).

Pharmaceutical and Chemical Sciences Graduate Program

Course Descriptions

PCSP 201. Statistics and Experimental Design (3)
This course involves the study of the application and limitations of statistical methods of inference as they apply to the fields of chemistry and the pharmaceutical sciences. Topics include the use of parametric statistics for statistical inference, comparisons of means, analysis of variance, and linear regression. Parametric statistics and non-parametric measures of association and elements of good experimental design are also included. *Prerequisite: graduate standing.*

PCSP 203. Laboratory and Information Managements (1)
This course covers basic knowledge of Information Management, Intellectual Property and Patenting, Research Laboratory Operations and Safety, Good Maintenance Practice (GMP), and Good Clinical Practice (GCP). *Prerequisites: graduate standing.*

PCSP 205. Instrumental Analytical Chemistry (4)
Lecture focuses on the theory and physical principles of instruments for the analysis of matter. Laboratory lecturer will describe the actual operation of instruments. Students will gain hands-on experience on the operation of instruments. *Prerequisite: graduate standing.*

PCSP 207. Bio-Analytical Techniques (4)
This course will provide a conceptual understanding and practical familiarity with techniques used for analysis of proteins and nucleic acids. *Prerequisite: graduate standing.*

PCSP 209. Presentation and Technical Writing (1)
This course will cover common written and oral forms of communication and scientific material. *Prerequisite: graduate standing.*

PCSP 211. Drug Design (4)
A study of modern methods used in the design of new drugs. Target selection, lead compound discovery and molecular modifications to optimize activity will be studied. *Prerequisites: graduate standing or bachelor's degree and permission of the instructor.*

PCSP 213. Biotransformation of Pharmaceutical Agents (3)
This course teaches the graduate students the chemical and biological principles of the transformations of pharmaceutical agents in the body and the impact of such transformations on pharmacokinetics, pharmacodynamics, toxicity, drug design and drug delivery. *Prerequisites: graduate standing or permission of the instructor.*

PCSP 217. Drug Biotransformation (3)
This course generally meets two times a week (two 75-min lectures per week). In this course, a mechanistic approach is employed to study human drug metabolizing enzymes. Other aspects related to the differential expression of these enzymes will be discussed. Students will need to submit a research proposal at the end of the course. *Prerequisite: graduate standing.*

PCSP 221. Fundamentals of Dosage Forms (3)
In this course the fundamental physicochemical properties, composition of various dosage forms will be taught. *Prerequisite: graduate standing.*

PCSP 223. Applied Pharmacokinetics (4)
This course will emphasize principles to ascertain an understanding of drug behavior in the body. The design of advanced drug delivery systems driven by steady-state pharmacokinetics will also be covered. Additionally, students will estimate PK parameters based on Win-Nonlin programming and select appropriate models for plasma-time concentration data. *Prerequisites: graduate standing or permission of the instructor.*

PCSP 224. Diffusion in Pharmaceutical Sciences (3)
Discussion of diffusion theories, experimental methods, and application to pharmaceutical/ biological systems.

PCSP 225. Pharmaceutical Technologies (2)
A study of theory and practice in industrial pharmacy including pre-formulation, formulation, and pharmaceutical manufacture. *Prerequisites: graduate standing, PHAR 114, 123 and 133.*

PCSP 228. Mathematical Modeling in Pharmaceutical Research (3)
A study of mathematical modeling theory and application to problems in pharmaceutical research. Modeling will be applied to three major areas: drug delivery, metabolic/biological cascades, and pharmacological response kinetics. *Prerequisites: PHAR 113 or permission of the instructor. Recommended courses: MATH 57, PHAR 114 and 134.*

PCSP 229. Advances in Drug Delivery System (3)
In this course the design and formulation/fabrication of controlled release and other novel drug delivery systems for oral, transdermal, ocular and other routes of delivery will be covered. The biopharmaceutical rational and evaluation of such systems will also be discussed. *Prerequisite: graduate standing.*

PCSP 230. Molecular Pharmacology of Nucleic Acid (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.*

PCSP 231. Mechanisms of Drug Action I (4)
Effects of therapeutic agents and the mechanisms whereby these effects are induced. Prototype medicinals will be presented to illustrate the effects of drug classes in the treatment of disease. *Prerequisites: graduate standing or permission of instructor.*

PCSP 232. Mechanisms of Drug Action II (4)
A continuation of PCSP 231. Effects of therapeutic agents and the mechanisms whereby these effects are induced. Prototype medicinals will be presented to illustrate the effects of drug classes in the treatment of disease. *Prerequisites: graduate standing or permission of the instructor*.

PCSP 234. Neurochemical Pharmacology (3)
A study of neurobiology of nerve cells and the neurochemical pharmacology associated with function of central and peripheral nervous systems. *Prerequisite: graduate standing.*

PCSP 237. Cell Culture Techniques (3)
The course is designed to teach students basic techniques in mammalian cell culture. In addition, advanced topics of cellular techniques are demonstrated and discussed representative of current research methods. *Prerequisites: permission by PCSP Program Director.*

PCSP 241. Advanced Organic/Bioorganic 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. *Prerequisites: CHEM 121 and 123 with a "C" or better.*

PCSP 242. Selected Topics: Advanced 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. *Prerequisites: CHEM 121 and 123 with a "C" or better.*

PCSP 244. High-Resolution NMR Spectroscopy (4)
A study of one and two dimensional FT-NMR techniques used for structure elucidation of organic molecules. Emphases will be placed on understanding the capabilities and limitations of these techniques, the information they provide, and the practical aspects of their implementation.

PCSP 245. Proteins and Nucleic Acids (4)
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: CHEM 151 with a "C" or better.*

PCSP 247. Mass Spectrometry (4)
Fundamentals of mass spectrometry, theory, instrumentation and applications to organic and biological molecules. *Prerequisite: PCSP 205*.

PCSP 248. Enzymology (4)
This class gives an introduction into the biochemistry of the various classes of enzymes with emphasis on laboratory techniques. *Prerequisite: CHEM 151 with a "C" or better*.

PCSP 255. Long Term Care Practice (3)
A clinical pharmacy component on a long term facility with special emphasis on opportunities and research needs; a systematic approach to monitoring the drug therapy of the long term care patient. *Prerequisite: graduate standing.*

PCSP 257. Ambulatory Care Practice (3)
Application of clinical pharmacy to ambulatory care settings in an affiliated clinic or community pharmacy, with special emphasis on opportunities and research needs. *Prerequisite: graduate standing.*

PCSP 259. Topics in Acute Care Practice (3)
Application and investigation of clinical pharmacy in acute care setting with emphasis on medical management of common diseases and rational drug selection and dosing. *Prerequisite: graduate standing.*

PCSP 260. Advances in Neuropsychiatric Pharmaceutical Care (2)
Pharmaceutical care for the patient with neurologic and psychiatric disorders, emphasizing appropriate use of drug therapy in the management of these disorders. *Prerequisites: graduate standing and permission of instructor.*

PCSP 261. Advances in Cardiovascular Care (3)
Application of Drug Therapy to patient care with assignments expanding students knowledge of background material supporting therapeutic guidelines. *Prerequisites: permission of instructor*.

PCSP 262. Vascular, Renal and Pulmonary Care (4)
Pharmaceutical care for the patient with cardiovascular, respiratory, and renal diseases, emphasizing appropriate use of drug therapy in the management of the disease. *Prerequisites: successful completion of all courses in semesters 1-3 of the Doctor of Pharmacy Program.*

PCSP 283. Multidisciplinary Project (1)
Students in the Pharmaceutical and Chemical Science Graduate Program will design an interdisciplinary project based upon the relevant contributions of their backgrounds. *Prerequisites: enrollment in PCS Graduate Program.*

PCSP 287/387. Internship (2-4)
An experiential learning program at a pharmaceutical/ chemical/ biotechnological industry, research institute or a clinical site that entitles the students to learn advanced techniques and practical application of the theoretical principles learned in a number of courses. *Prerequisites: graduate students that have completed Category I course work, or obtained permission of the coordinator shall enroll in this course. For students in thesis/dissertation tracks, concurrence of thesis/dissertation advisor(s) is required.*

PCSP 291/391. Independent Study (1-4)
Restricted to masters or doctoral (Ph.D.) candidates. May be repeated with permission as progress warrants. No more than eight credits may be used toward doctoral degree requirements. *Prerequisites: graduate student in good standing, permission of the instructor, and completion and approval of the required contract for Independent Graduate Study.*

PCSP 295/395. Graduate Seminar (1)
Seminar presentation on research-related topics given by both PCSP faculty and graduate students. Enrolled students are required to attend all seminars given throughout the pharmacy academic year and to give one seminar in that year. This course is required for all graduate students for the first three years of their tenure in the PCSP. Students who have already enrolled in this course for three years are encouraged to come to seminars without official enrollment. PCSP faculty members present a short talk on their research areas at the beginning of the fall semester each year. *Prerequisites: graduate standing.*

PCSP 297/397. Graduate Research (1-4)
Limited to masters or doctoral (Ph.D.) candidates. May be repeated with permission as progress warrants. No more than eight credits may be used toward doctoral degree requirements. *Prerequisites: admission to the graduate program and permission of research director.*

PCSP 299. Thesis Research (1-6)
Only open to MS candidates. Minimum four credits will be required. Prerequisites: admission to MS-thesis program (PCSP) and permission of research advisor.

PCSP 399. Dissertation Research (1-6)
Only open to doctoral (Ph.D.) candidates. No more than eight credits may be used toward doctoral degree requirements. *Prerequisites: admission to Ph.D. program (PCSP) and permission of research advisor.*

Further Information Contacts

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e-mail: gradschool@pacific.edu
web-site: http://www.pacific.edu/graduate

Pharmacy Practice Experience

All pharmacy students are required to complete introductory and advanced clinical experiences as part of their formal program of study. The introductory practice experience is included in the Pharmacy Systems course sequence, providing experience in a variety of community settings. The advanced practice experience consists of two semesters during the senior year of clinical experience rotations in acute care, long term care, and ambulatory care settings, and in community pharmacies. The student is required to enroll in six-week rotations including Community Practice Rotation, Institutional Pharmacy Practice Rotation, Ambulatory Care Rotation and Internal Medicine Rotation. In addition, each student will complete two six-week elective rotations.

Practice Experience Placement Policy

Upon admission, each student is required to sign a form giving the Thomas J. Long School of Pharmacy and Health Sciences 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 Thomas J. Long School of Pharmacy and Health Sciences.

Major Course Requirements for the Doctor of Pharmacy Degree

Special Note: The following courses must be taken in the prescribed sequence because of the integrated nature of the pharmacy curriculum.

Department of Pharmacy Practice

PRAC 171-179 Clinical Experience Rotations
PRAC 181-189 Clinical Experience Rotations

Interdepartmental

PHAR 111 Pharmacy Systems and Experience I
PHAR 112 Pharmacy Calculations and Statistics
PHAR 113 Integrated Biological Sciences I
PHAR 114 Integrated Pharmaceutical Sciences I
PHAR 121 Pharmacy Systems II
PHAR 122 Dermatologic Pharmaceutical Care
PHAR 123 Integrated Biological Sciences II
PHAR 124 Integrated Pharmaceutical Sciences III
PHAR 125 Integrated Biological Sciences II
PHAR 131 Pharmacy Systems III
PHAR 132 Disease Processes
PHAR 135 Integrated Pharmaceutical Sciences III
PHAR 134 Mechanisms of Drug Action I
PHAR 141 Pharmacy Systems IV
PHAR 142 Neuropsychiatric Pharmaceutical Care
PHAR 143 Cardiovascular Care
PHAR 144 Mechanism of Drug Action II
PHAR 151 Pharmacy Systems V
PHAR 153 Renal and Respiratory Care
PHAR 154 General Pharmaceutical Care I
PHAR 161 Pharmacy Systems and Experience VI
PHAR 162 Self Care and Triage
PHAR 163 Infectious Diseases
PHAR 164 General Pharmaceutical Care II
Career-related Electives –6 units
PHAR 171 Internal Medicine Rotation
PHAR 172 Ambulatory Care Rotation
PHAR 173 Hospital Pharmacy Practice
PHAR 174 Community Pharmacy Practice

Course Offerings

Department of Pharmaceutics and Medicinal Chemistry

Xiaoling Li, Chairman

Professors: Floriddia, Fries, Li

Associate Professor: Chan, Jasti

Assistant Professor: Uchizono, Guo, Park, Russu

Assistant Clinical Professor: Wagner

Adjunct Professors: Barr, Berner, Chu, Cleland, Crison, Goskonda, Hodges, Hou, Jarulula, Kenkare-Mitra, Klein, Letendre, Liu, Ma, Modlin, Mudumba, Ng, Nyshadham, Otulana, Parasrampuira, Quan, Redkar, Sastry, Sharma, Shenoy, Singh, Strickley, Tammara, Vemuri, J. Wang, W. Wang, Wu, Zhang, Zioncheck.

PMED 111a, b. Teaching the Pharmaceutical Dosage Forms Laboratory (1)
A course designed to train pharmacy students in supervising a laboratory as a teaching assistant. *Prerequisite: this course will be open to students who have completed all first year courses and are in good standing.*

PMED 138. Lectures in Nuclear Pharmacy Science (3)
A study of radioactivity, radionuclides, and nuclear radiations. Methods of detection and measurement of radiations. Basic rules of use for nuclides and radioactive material.

PMED 149. Special Topics (1-4)

PMED 153. Pharmaceutical Compounding (2)
Study of current compounding practice, regulations governing compounding, USP recommendations and making compounded products with evaluation and analysis as is currently part of a pharmacy practice. *Prerequisite: professional school standing and PHAR 114, 123 and 125.*

PMED 155. Herbal Remedies (3)
A study of herbal preparations and other phytomedicinals which are widely used by the general public as self-selected products for therapeutic or preventive purposes. Emphasis is placed on the need for herbs and phytomedicinals as alternative therapies, the safety and efficacy of phytomedicinals, and the role of pharmacists in helping consumers select useful and safe botanical products. The regulatory and legislative aspects of marketing and selling phytomedicinals in the U.S. will be discussed. *Prerequisites: available to second year Doctor of Pharmacy students.*

PMED 164. Advances in Applied Pharmacokinetics (2)
A systematic approach to a rational application of basic pharmacokinetics to patient specific clinical practice.

PMED 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 lectures per week.

PMED 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: PMED 184.*

PMED 193. Undergraduate Independent Study (1-5)
Independent study involving library and/or laboratory.

PMED 249. Special Topics (1-4)

Department of Pharmacy Practice

William Kehoe, Chairman

Professors: Abood, Carr-Lopez, Gundersen, Kehoe, Norton, Oppenheimer, P. Williams

Associate Professors: Kang, Lee, Moon, S. Ravnan, Shek

Assistant Professors: Fuentes, Kim, Manzo, Moise-Broder, Nguyen, O'Dell, Palmieri, Patel, Tovar-Brandy, M. Ravnan, K. Smith, Song

Assistant Clinical Professors: Bearce, Kaye, Jankowski, Wataoka

Instructors: Bandy

Adjunct Professors: See complete listing with adjunct faculty at the end of the Pharmacy and Health Sciences section.

PRAC 70. Clinical Experience Rotations (18)

PRAC 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 and Health Sciences regulations and pre-pharmacy requirements.

PRAC 121. Basic Life Support (2)
Training program to prepare instructors to teach basic life support courses.

PRAC 123. Health Care Delivery Systems(2)
The structure and function of Health Care in the U.S., with emphasis on the effects on the practice of pharmacy.

PRAC 127a-f. RxTract Writer (1)
Students write and publish pharmacotherapy reports in a newsletter format.

PRAC 128. Gerontology and Geriatric Therapy (2)
An exploration of the social and psychological 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.*

PRAC 135. Student Journal Club (2)
An application of principles of literature analysis and evaluation including statistics and study design and coverage of therapeutics and treatment recommendations.

PRAC 137a-c. RxTract Editor (2)
Students organize and edit reports that are published in a newsletter format. *Prerequisite: Second year status.*

PRAC 138. Behavioral Medicine in Pharmaceutical Care (2)
Basic principles of behavior, behavioral medicine, and health psychology. Application of these principles to diabetes, asthma, chronic pain, cardiovascular disease, and pain. *Prerequisite: professional school standing.*

PRAC 145. Foundations of Clinical Outcomes Research (2)
An introduction to the design and implementation of clinical/outcomes research studies. Emphasis will be placed on methods appropriate for evaluating health care services and assessing the long term outcomes of pharmacological interventions. The course is designed for students who have an interest in conducting clinical and outcomes research. The multidisciplinary focus of the course makes it appropriate for students in Pharmacy, Physical Therapy, and Speech Language Pathology. *Prerequisites: Pharmacy Calculations and Statistics, Pharmacy Systems and Experience I and II, or permission of the instructor.*

PRAC 146. Developmental Disabilities (2)
Pharmaceutical care for the patient with developmental disabilities, with a focus on appropriate drug therapy in the management of specific conditions. *Prerequisites: second year standing in the professional program.*

PRAC 148. Introductory Biostatistics (2)
An introductory course in the terminology and use of biostatistics.

PRAC 149. Special Topics (1-4)

PRAC 156. Opportunities in Pharmacy Practice (2)
Personal and business tools to make the transition from the academic environment to the daily practice of pharmacy, with an emphasis on entrepreneurship.

PRAC 160. Pain Management (2)
Pharmaceutical care for the patient with pain disorders, emphasizing pathophysiology, pharmacology and toxicology, pain assessment skills, appropriate medication therapy, side effect management and non-medication management of these disorders. *Prerequisites: Successful completion of all courses in semesters 1-4 of the Doctor of Pharmacy program.*

PRAC 161. Communicating in the Research (2)
The course gives students an opportunity to develop the communication skills needed to write a research proposal, write a manuscript for publication, write an abstract for submission to a scientific conference via either a poster session or podium presentation, and write a review of a manuscript submitted for publication. The course is designed for students who have an interest in conducting clinical/outcomes research. The multidisciplinary focus of the course makes it appropriate for students in Pharmacy, Physical Therapy, and Speech-Language Pathology. *Prerequisite: PRAC 145.*

PRAC 165. Business Law for the Pharmacist (2)
An introduction to the business laws affecting the pharmacist.

PHAR 171. Internal Medicine Rotation (6)

PHAR 172. Ambulatory Care Rotation (6)

PHAR 173. Hospital Pharmacy Practice Rotation (6)

PHAR 174. Community Pharmacy Practice Rotation (6)

PRAC 176a. Anticoagulation Clinic Rotation (6)

PRAC 176b. Antimicrobial Drug Monitoring Rotation (6)

PRAC 176c. Critical Care Rotation (6)
PRAC 176d. Drug Information Rotation (6)
PRAC 176e. Cardiology Rotation (6)
PRAC 176f. Clinical Pharmacokinetics Rotation (6)
PRAC 176g. Gynecology (OB/GYN) Rotation (6)
PRAC 176h. Home Health Care Rotation (6)
PRAC 176i. Industrial Pharmacy Rotation (6)
PRAC 176j. Geriatrics/Long Term Care Facility Rotation (6)
PRAC 176k. Psychopharmacy Rotation (6)
PRAC 176l. Institutional Pharmacy Administration Rotation (6)
PRAC 176m. Community Pharmacy Management Rotation (6)
PRAC 176n. Neurology Rotation (6)
PRAC 176o. Oncology Rotation (6)
PRAC 176p. Pediatrics Rotation (6)
PRAC 176q. Quality Assurance Rotation (6)
PRAC 176r. Non-Prescription Therapy and Management Rotation (6)
PRAC 176s. Surgery Rotation (6)
PRAC 176t. Total Parenteral Nutrition Rotation (6)
PRAC 176u. Drug Utilization Review Rotation (6)
PRAC 176v. Association Management Rotation (6)
PRAC 176x. Poison Control Rotation (6)
PRAC 176y. Women's Health Rotation (6)
PHAR 176z. Advanced Community Rotation (6)
PRAC 175. Elective Rotation (3)
PRAC 177. Elective Rotation (3)
PRAC 181. Advanced Elective Rotation (3)
PRAC 182. Advanced Elective Rotation (3)
PRAC 184. Advanced Elective Rotation (6)
PRAC 185. Advanced Elective Rotation (6)

PRAC 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 of the instructor.*

PRAC 193. Undergraduate Independent Study (1-5)
Library, conference and clinical studies in clinical pharmacy. *Prerequisite: permission of the instructor.*

Department of Physiology and Pharmacology

Timothy J. Smith, Chairman

Professors: Blankenship, Smith

Associate Professors: Halliwell, Livesey, Meerdink, Smith

Assistant Professors: Faridi, Rahimian, Thomas

Lecturer: Ferguson

PHYP 111. Veterinary Pharmacology (2)
The application of pharmacology to the problems of animal health. One two-hour lecture per week.

PHYP 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: prior or concurrent enrollment in PHYP 146, or permission of instructor.*

PHYP 113. Teaching Anatomy and Physiology Laboratory (1)
Preparation necessary to act as a teaching assistant in PHAR 123. *Prerequisites: permission of the instructor and grade of C or better in the course. Course may be repeated twice for credit.*

PHYP 149. Special Topics (1-4)

PHYP 158. Fundamentals of Toxicology (2)
An introduction to the general principles of toxicology. The toxic effects of various classes of non-medical 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: PHAR 144.

PHYP 193. Undergraduate Independent Study (1-5)
Independent study involving library and laboratory work and the writing of a report. *Prerequisite: permission of the instructor.*

Interdepartmental Pharmacy

PHAR 111. Pharmacy Systems and Experience I (5)
An exploration of the place of pharmacy in the healthcare system with emphasis on oral, written, and electronic communication, and development of initial practice competencies. Five lectures per week or equivalent. *Prerequisite: first professional year standing.*

PHAR 112. Pharmacy Calculations and Statistics (2)
Mathematical and statistical concepts as they apply to the practice of pharmacy. Emphasis on weights and measures, with methodology for calculating doses and procedures to determine actual ingredients for various formulations. *Prerequisite: first year pharmacy status.*

PHAR 113. Integrated Biological Sciences I (5)
A conceptual study of cellular function and control mechanisms at the molecular level. *Prerequisite: first year pharmacy status.*

PHAR 114. Integrated Pharmaceutical Sciences I (5)
A study of dosage forms and the relationship between the physicochemical properties of drugs and drug reaction. *Prerequisites: first year pharmacy status in the Doctor of Pharmacy program.*

PHAR 121. Pharmacy Systems and Experience II (3)
A continuation of PHAR 111; literature analysis, ethical dilemmas and the development of introductory practice competencies. *Prerequisites: second semester standing in the Doctor of Pharmacy Program.*

PHAR 122. Dermatological Pharmaceutical Care (2)
An integrated study of dermatological disorders with emphasis on triage, medication options, pharmaceutical care, and dispensing medications. *Prerequisite: Professional school standing.*

PHAR 123. Integrated Biological Sciences II (5)
An introduction to the biology, anatomy, and physical assessment of the nervous and cardiovascular organ systems.

PHAR 124. Integrated Pharmaceutical Sciences II (2)
A continuation of PHAR 114, with emphasis on parenteral dosage forms, biopharmaceutics, and basic pharmacokinetics.

PHAR 125. Integrated Biological Sciences III (5)
A continuation of PHAR 123 with emphasis on the anatomy and physiology of the respiratory, endocrine, hepatorenal, and gastrointestinal systems. *Prerequisite: Professional school standing.*

PHAR 131. Pharmacy Systems and Experience III (2)
A continuation of PHAR 121; a practice-based experience with emphasis on oral communication, applications of pharmaceutical care, and problem solving in a community practice setting. *Prerequisite: third semester standing in the Doctor of Pharmacy Program.*

PHAR 132. Disease Processes (5)
A study of the human defense and disease processes including consideration of organ-specific disorders. *Prerequisite: Professional school standing.*

PHAR 134. Mechanisms of Drug Action I (5)
Effects of therapeutic agents and the mechanisms whereby these effects are induced. Prototype medicinals will be presented to illustrate the effects of

drug classes in the treatment of disease. *Prerequisites: PHAR 123, PHAR 125.*

PHAR 135. Integrated Pharmaceutical Sciences III (4)
A continuation of PHAR 114 and PHAR 124. Utilizing the L.A.D.M.E. framework to understand biopharmaceutic and pharmacokinetic/pharmacodynamic principles governing drug behavior in the body. The design of advanced controlled drug delivery systems will be covered.

PHAR 141. Pharmacy Systems and Experience IV (2)
A continuation of PHAR 131, a practice based experience focusing on the long term care patient. Two hours of discussion and two hours of experiential learning per week or equivalent. *Prerequisites: PHAR 111, 121 and 131, and fourth semester standing in the Doctor of Pharmacy program.*

PHAR 142. Neuropsychiatric Pharmaceutical Care (3)
Pharmaceutical care for the patient with neurologic and psychiatric disorders, emphasizing appropriate use of drug therapy in the management of these disorders. *Prerequisite: PHAR 144 (may be taken concurrently). Successful completion of all courses in semesters 1-3 of the Doctor of Pharmacy Program.*

PHAR 143. Cardiovascular Care (5)
Pharmaceutical care for the patient with cardiovascular diseases, emphasizing appropriate use of drug therapy in the management of the disease. *Prerequisites: Successful completion of all courses in semesters 1-3 of the Doctor of Pharmacy program.*

PHAR 144. Mechanism of Drug Action II (5)
A continuation of PHAR 134. Effects of therapeutic agents and the mechanisms whereby these effects are induced. Prototype medicinals will be presented to illustrate the effects of drug classes in the treatment of disease. *Prerequisite: Professional school standing.*

PHAR 149. Prof. Comm. and Interviewing (1)

PHAR 151. Pharmacy Systems and Experience V (4)
A continuation of PHAR 141, financial and personnel issues in pharmacy practice; problem solving with a focus on pharmacoeconomics. Three and one-half lectures and one hour of discussion per week or equivalent. *Prerequisites: fifth semester standing in the Doctor of Pharmacy program.*

PHAR 153. Renal and Pulmonary Care (5)
Pharmaceutical care for the patient with respiratory and renal diseases, emphasizing appropriate use of drug therapy in the management of disease. *Prerequisites: Successful completion of all courses in semester 1-4 of the Doctor of Pharmacy program.*

PHAR 154. General Pharmaceutical Care (5)
Pharmaceutical care for the patient with common disorders, emphasizing appropriate use of drug therapy in the management of these disorders. *Prerequisite: Successful completion of all courses in semester 1-4 of the Doctor of Pharmacy program.*

PHAR 161. Pharmacy Systems and Experience VI (4)
A continuation of PHAR 151, law, regulations and case law related to pharmacy practice; problem solving using practice scenarios. Three and one-half lectures and one hour of discussion per week or equivalent. *Prerequisite: sixth semester standing in the Doctor of Pharmacy program.*

PHAR 162. Self Care and Triage (2)
Principles of triage and self care using non-prescription pharmacotherapy and dietary supplements. Prerequisite: Successful completion of all courses in semesters 1-5 and sixth semester standing in the Doctor of Pharmacy program.

PHAR 163. Infectious Diseases (5)
Pharmaceutical care for the patient with infectious disease, emphasizing appropriate use of drug therapy in the management of disease. *Prerequisites: Successful completion of all courses in semester 1-5 of the Doctor of Pharmacy program.*

PHAR 164. General Pharmaceutical Care II (5)
Pharmaceutical care for the patient with common disorders, emphasizing appropriate use of drug therapy in the management of these disorders. *Prerequisites: Successful completion of all courses in semester 1-5 of the Doctor of Pharmacy program.*

PHAR 171. Internal Medicine Rotation (6)
A clinical pharmacy practice rotation at an affiliated hospital or medical center with emphasis on the medical management of disease states, rational drug therapy, and patient monitoring using the pharmaceutical care practice model. *Prerequisites: Successful completion of all courses in semesters 1 through 6.*

PHAR 172. Ambulatory Care Rotation (6)
A clinical pharmacy practice rotation at an affiliated clerkship site with emphasis on providing pharmaceutical care for ambulatory care patients, including the medical management of disease states, rational drug therapy, and patient monitoring. *Prerequisites: Completion of all courses in semesters 1 through 6.*

PHAR 173. Hospital Pharmacy Rotation Practice (6)
A clinical pharmacy practice rotation at an affiliated clerkship site with emphasis on providing hospital pharmacy practice skills. Students will have experience in selecting drug products, compounding, dispensing, monitoring and evaluation, communicating with patients, communicating with other health professionals, drug information, public health and management. *Prerequisites: Successful completion of all courses in semesters 1 through 6.*

PHAR 174. Community Pharmacy Rotation
A required experiential learning rotation designed to teach students community pharmacy practiced oriented skills. Students will have experience in selecting drug products, compounding, dispensing, monitoring and evaluating, communicating with patients, communicating with other health professionals, drug information, public health, and management. *Prerequisites: Successful completion of semesters 1 through 6.*

Physical Therapy

Cathy Peterson, Chair

Associate Professor: Mansoor, Swan

Assistant Professors: Bellamy, Gibbs, Little, Peterson, Stuart, Wilson

Visiting Instructors: Tirone, Mardini, Graves, Boyd, Lazaro, Johnson, Merrill, Nance, Serra, Schneider, Gundersen, Kehoe

Physical Therapy Mission

The mission of Pacific's physical therapy program is to prepare lifelong learners who are skilled, reflective, autonomous practitioners. The program is committed to educating individuals who will be leaders within the profession advocating for optimal health, wellness and performance for all members of society.

We accomplish this through a concise program of study emphasizing evidence-based reasoning and creative skills grounded in the basic and clinical sciences. Our academic program is enhanced by a wide variety of innovative clinical experiences and involvement in professional societies.

Program Offered

The Department of Physical Therapy offers the entry-level Doctor of Physical Therapy (DPT). The DPT program is designed for individuals seeking to enter the physical therapy profession.

The (Entry-Level) Doctor of Physical Therapy Degree

The entry level Doctor of Physical Therapy (DPT) degree is a highly structured 25-month course of study, consisting of six consecutive trimesters. Coursework includes foundational sciences (anatomy, physiology, pathophysiology), clinical sciences, management of professional life and practice, clinical applications, and substantive clinical practical experiences.

A major element of the program is the opportunity for students to be involved in meaningful professional clinical experiences under the supervision of carefully selected practitioners. Opportunities include acute care facilities, skilled nursing facilities and rehabilitation sites in the Central Valley, in the San Francisco Bay Area, in Southern California and in selected sites out of state. All students must successfully complete the clinical internship requirements as an inherent part of the professional program.

Prerequisites to participation in the clinical internships are:

1. Satisfactory completion of all other required courses with a minimum GPA of 3.0;
2. Admission to degree candidacy; and
3. Permission of the department faculty.

To receive the Doctor of Physical Therapy degree, each student must demonstrate clinical competence as well as academic success. Academic success means:

1. Maintenance of a cumulative GPA of at least 3.0
2. No grade below a B- (2.7) in any course at the 300 level will be counted toward the degree program.

Clinical competence means:

1. The ability to evaluate individuals with movement dysfunction and identify problems appropriate for physical therapy intervention.
2. The ability to establish appropriate treatment goals and plans, including specific physical therapy procedures or modalities.
3. The ability to effectively apply the various physical therapy procedures and modalities.
4. The ability to relate effectively to clients, their families and other health care providers.

Assessment of these competencies will be made by faculty before recommending award of the degree.

Accreditation and Licensing

The Physical Therapy Program is accredited by the Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association. Successful completion of an accredited program qualifies the graduate to take the licensing examination. Admission to the program is selective and limited to 36 openings each year.

Prerequisites

Prerequisites for admission to the program include the following:

1. Bachelor's degree with a major of student's choice.
2. Successful completion of the listed prerequisite courses.
   a. Prerequisite courses must be completed with a grade of "C" or above.
   b. Courses are taken on a graded basis; pass/fail courses are not acceptable without approval from the Admissions Committee.
   c. Biological science, chemistry and physics courses must all include significant laboratory experiences.
   d. Prerequisite science courses must be taken within the last ten years.
   e. It is strongly recommended that the science courses be distributed over the four years with physics being taken in the fourth year.
   f. Correspondence, on-line or extension coursework is not acceptable without approval from the Admissions Committee or Department Chair. All coursework must have defined objectives, course description, an objective grading system, and meet the content expectations of the prerequisite.
3. At least 50 hours spent in one or more physical therapy practice settings, including at least 25 hours in an acute care hospital setting.
4. GRE test scores must be less than 5 years old at the time of application.
5. A personal interview at the invitation of the selection committee is required.

Prerequisite Coursework

General Biology with lab:

4 semester credits/5-6 quarter hours minimum. The course should include animal biology.

Human Anatomy with lab:

4 semester credits/5-6 quarter hours minimum. Vertebrate anatomy is acceptable if human anatomy is not available.

Human Physiology with lab:

4 semester credits/5-6 quarter hours minimum. Animal physiology is acceptable if human physiology is not available.

Note: A single semester course combining anatomy and physiology does not meet this requirement. However, a two-semester sequence of the combined subjects will meet this requirement.

General Chemistry with Lab:

8 semester credits /12 quarter hours minimum. A standard full-year course.

General Physics with lab:

8 semester credits /12 quarter hours minimum. A standard full-year course. Calculus level physics not required but is accepted.

Abnormal Psychology plus one other Psychology course

6 semester credits /9 quarter hours minimum.

Statistics:

3 semester credits/4-5 quarter hours minimum.

Exercise Physiology:

3 semester/ 4-5 quarter hours minimum. Introduction to the study of human physiological responses and adaptations resulting from muscular activity, including measurement of basic physiological responses.

Medical Terminology:

1-3 semester credits/2-4 quarter hours minimum. A basic course in bioscientific terminology, analyzing the Latin and Greek elements in scientific English.

For the most current information regarding the application process and requirements, please visit the web site:
www1.uop.edu/pharmacy/ptdegree-prereq.html

Course Offerings

PTHR 311. Gross Human Anatomy (6)
Detailed regional analysis of the structure of the human body including the lower extremity, upper extremity, head, neck and trunk. Functional correlates to the structures will also be presented and discussed. *Prerequisite: Admission to the entry level Doctor of Physical Therapy Program. (Fall)*

PTHR 312. Exercise Physiology in Physical Therapy (2)
Discussion of the normal physiological responses to exercise and the mechanisms responsible for those changes. The physiological responses to exercise in people with some disabilities are discussed. Includes content on muscle anatomy, physiology and specific responses to training, energy transfers/expenditures, systemic responses to exercise, body composition. *Prerequisite: Admission to the entry level Doctor of Physical Therapy Program. (Fall)*

PTHR 313. Clinical Kinesiology I (3)
Examination of the normal and pathological structure and function of human joints. Basic biomechanical and kinesiologic principles of

human joints and the relationship of these principles to patient care are presented. This course focuses on the basic kinesiologic concepts and the kinesiologic examination of the lower extremity. *Prerequisite: Admission to the entry level Doctor of Physical Therapy Program. (Fall)*

PTHR 314. Introduction to Physical Therapy and Patient Care I (1)
Introductory course to the principles and practice of physical therapy. Students explore the history and role of the profession of physical therapy in the healthcare system and healthcare team and begin to develop professional behaviors and communication skills required to function in that role. Includes an introduction to the various practice areas of Physical Therapy. *Prerequisite: Admission to the entry level Doctor of Physical Therapy Program. (Fall*)

PTHR 316. Physical Therapy Examination and Evaluation (4)
Discussion of basic examination techniques employed in the practice of physical therapy. Included are history taking, vital signs, inspection, palpation, range of motion measurement, manual muscle testing, sensory testing, selected special tests and other functional tests. *Prerequisite: Admission to the entry level Doctor of Physical Therapy Program. (Fall)*

PTHR 318. Physical Therapy and Patient Care Skills (1)
Continuation of PTHR 314. Introduction to the principles and practice of physical therapy. Included are content pertaining to basic concepts of patient education and basic patient care procedures. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course or permission of instructor. (Fall)*

PTHR 319. Physical Agents (1)
Physiological responses of each physical agent modality and indications, contraindications and precautions for use of each modality. This course will enable the student to properly select and safely and competently apply the various physical agents used by physical therapists, to instruct supportive personnel on the use of these modalities and to instruct patient and families in the appropriate use of modalities in the home setting. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course. (Fall)*

PTHR 321. The Nervous System and Behavior (5)
Understanding of the structure and function of the nervous system, how it controls movement and behavior, and how deficits in the system affect movement and behavior. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in PTHR 321 or permission of instructor. (Winter)*

PTHR 323. Clinical Kinesiology II (3)
Continuation of PTHR 313. This course examines the normal and pathological structure and function of human joints. Basic biomechanical and kinesiologic principles of human joints and the relationship of these principles to patient care are presented. The focus of this course is the kinesiologic examination upper extremities, trunk and the TMJ. *Prerequisites: a "B" or better in PTHR 311 and 313.*

PTHR 326. Therapeutic Exercise: Basic Theory and Application (4)
Theories, principles and techniques of therapeutic exercise. Included are the physiologic bases, procedures and techniques of functional mobility training, gait training with assistive devices, stretching, strengthening and power building exercises. This course also includes Proprioceptive Neuromuscular Facilitation (PNF), Aquatic Therapy, and preliminary lectures in Orthopedics. *Prerequisite: PTHR 311, 312 and 316. (Winter)*

PTHR 327. Clinical Experience II (0)
Clinical experience for practicing learned examination and intervention techniques and other professional behaviors under the supervision of qualified licensed physical therapists. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course. (Winter)*

PTHR 328. Research: Theory and Application (2)
This course will help the student develop an understanding of the scientific method of inquiry, research design and methodologies, critical analysis of health science information including research articles and development of clinical research projects through application of the basic principles of the scientific method. This course will provide the fundamental background to help students understand evidence-based practice in Physical Therapy.

PTHR 329. Pathophysiology (4)
This course involves the detailed analysis of the structure, function and pathology and pathophysiology of the systems of the human body. Functional correlates to physical therapy care will be included. *Prerequisite: a "B-" or better in PTHR 311, 312. (Winter)*

PTHR 332. Electrotherapy (2)
Discussion of physiological reactions to various forms of electrical stimulation, clinical techniques for selection and use of various types of currents to effect desirable changes in the neuromuscular system for increasing strength and managing pain, and to accelerate wound healing. Also includes content on Electrodiagnosis, Biofeedback and Mechanical Traction. *Prerequisite: successful completion of PTHR 322. (Spring)*

PTHR 333. Analysis of Movement Through the Lifespan (5)
Foundations leading to an understanding of a dynamic system's model: motor development, motor learning, motor control, cognitive/ perceptual/ emotional development, and their integrated influence on the motor system through differential diagnosis of movement patterns. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in PTHR 333 or permission of instructor. (Spring)*

PTHR 334. Medical Conditions and Screeningfor Medical Disease (4)
Focus on the process of screening for medical disease in the practice of physical therapy. The students will learn the major signs and symptoms of various neuromusculoskeletal conditions and systemic diseases, the medical and pharmacologic management of these diseases and conditions and the possible sources of referred pain from systemic diseases that may mimic or increase neuromusculoskeletal pain. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course. (Spring)*

PTHR 335. Cardiovascular and Pulmonary Physical Therapy (4)
This course addresses physical therapy examination, evaluation and intervention of the individual with cardiovascular and/or pulmonary disease. *Prerequisites: successful completion of PTHR 311, 312, 313, 314, 316, 317, 321, 323, 324, 326, and 329. (Spring)*

PTHR 336. Clinical Experience II (1)
Clinical experience for practicing learned examination and intervention techniques and other professional behaviors under the supervision of qualified licensed physical therapists. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course. (Spring)*

PTHR 338. Clinical Experience III (1)
Clinical experience for practicing learned examination and intervention techniques and other professional behaviors under the supervision of qualified licensed physical therapists. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course. (Spring)*

PTHR 341. Integumentary Physical Therapy (1)
Introduction to the integumentary system with primary focus on wound and burn care. Lecture and lab sessions covering the physical therapy

evaluation and treatment options for burns and wounds of various etiologies including vascular, traumatic, and surgical. Other topics to include: cells involved in healing, how disease states can affect healing, integumentary changes over the lifespan, and precautions and contraindications for different treatment options. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course or permission of instructor. (Fall)*

PTHR 342. Administration and Management of Physical Therapy Services I (2)
Introduction to principles of management, with emphasis on the application of these principles in health care facilities and other patient care settings. The application of these principles within the field of physical therapy and the various physical therapy practice settings is specifically addressed. As appropriate, discussion of issues facing the profession of physical therapy is included. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course or permission of instructor. (Fall)*

PTHR 343. Geriatric Physical Therapy (1)
Introduction to the special needs of the elderly and the physical therapy examination and intervention of the geriatric patient/client. The physical changes associated with normal aging as well as the pathological changes will be discussed and analyzed. *Prerequisite: PTHR 312, 316, 321, 326 and 333, or permission of instructor. (Fall)*

PTHR 344. Neuromuscular Physical Therapy (5)
Examination, evaluation and intervention of patients and clients with neuromuscular dysfunction. This course will emphasize the establishment of a diagnosis by a physical therapist, identification of a realistic prognoses and selection of various interventions options. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course or permission of instructor. (Fall)*

PTHR 345. Advanced Clinical Problems I (1)
Integration of all prior course work using case studies and actual patient contacts to perform physical therapy examination, evaluation, diagnosis, and prognosis, and carry out appropriate interventions. Case studies and patient contacts will include examples of patients/clients with orthopedic, neurological, integumentary, cardiopulmonary, and multiple systems disorders. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course or permission of instructor. (Fall)*

PTHR 346. Seminar (2)
During this course students will have opportunities to practice the range of physical therapy problem solving through analysis and discussion of various case studies. The continuum from evaluation to diagnosis to prognosis to treatment selection will be incorporated into each presented case, with emphasis on clinical decision-making and systems interaction approach to patient management. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course. (Fall)*

PTHR 347. Musculoskeletal Physical Therapy I (5)
This course provides the foundation for the study of orthopedic conditions including physical therapy examination, evaluation, diagnosis, prognosis and intervention, as well as medical and surgical aspects of some orthopedic conditions of the extremities. The emphasis of the course is on developing the basic competencies required to examine and evaluate patients/clients, as well as providing a diagnosis, prognosis and intervention for patients/clients with an orthopedic problem, whether or not this is the primary condition/diagnosis. Students will also develop a basic competency in Manual Therapy techniques as they apply to this patient population. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course. (Fall)*

PTHR 351. Prosthetics and Orthotics (1)
Discussion of the types, components, prescription criteria, function, training, and examination and documentation of upper- and lower-extremity orthotic and prosthetic appliances. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course. (Winter)*

PTHR 352. Administration and Management of Physical Therapy Services II (2)
Continuation of PTHR 342. Emphasis is on the physical therapy profession and the practice of physical therapy as it is affected by the health care delivery system, professional organizations, State and Federal laws, professional ethics, professional issues and societal trends. *Prerequisite: a "B-" or better in PTHR 342 or permission of instructor. (Winter)*

PTHR 353. Diagnostic Imaging for Physical Therapists (2)
Basic principles and interpretation of diagnostic imaging modalities as they apply to the physical therapist. The emphasis is on plain film radiography, including basic physics of the imaging technique, viewing and interpreting films, radiographic anatomy, and clinical correlation with patient cases. Other types of imaging, including contrast films, magnetic resonance imaging, and computed tomography will also be introduced. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course. (Winter)*

PTHR 354. Pediatric Physical Therapy (1)
Discussion of the common pediatric problems encountered by physical therapists. The students will analyze a variety of impairments and disabilities seen in children, formulate diagnosis, prognosis and discuss possible intervention strategies commonly practiced by physical therapists. *Prerequisite: PTHR 311, 312, 316 and 323, or permission of instructor. (Winter)*

PTHR 355. Advanced Clinical Problems II (1)
Integration of all prior course work using case studies and actual patient contacts to perform physical therapy examination, evaluation, diagnosis, and prognosis, and carry out appropriate interventions. Case studies and patient contacts will include examples of patients/clients with orthopedic, neurological, integumentary, cardiopulmonary, and multiple systems disorders. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course or permission of instructor. (Winter)*

PTHR 356. Psychosocial Aspects of Illness and Disability (3)
Survey of psychological and social factors related to physical illness and disability. Scientific, theoretical and clinical literature are highlighted with emphasis upon understanding the impact of illness and/or disability in terms of the individual, the family, and the health care professional. Stress management and professional burn-out are included. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course or permission of instructor. (Winter)*

PTHR 357. Musculoskeletal Physical Therapy II (2)
Continuation of PTHR 347. Continues the study of examination, evaluation, diagnosis, and interventions for patients in the orthopedic setting, with emphasis on the spine and TMJ regions. Students will also develop a basic competency in applying musculoskeletal PT concepts to the industrial setting. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course or permission of instructor. (Winter)*

PTHR 358. Clinical Education and Professional Behavior (1)
This course will prepare students for their full-time clinical experiences by orienting them to the performance instrument that will be used to evaluate their clinical performance, familiarizing

them with teaching and learning methods that will be used by their clinical instructors, and exploring options for problem-solving and conflict resolution in the clinical setting. *Prerequisite: successful completion of all DPT courses the semester preceding enrollment in the course (P/NC only). (Winter)*

PTHR 359. Clinical Internship I (4)
Full time clinical internship for practicing learned examination and intervention techniques and other professional behaviors. Toward the end of this internship, students will be expected to function with a high level of independence while still under the supervision of qualified licensed physical therapists. *Prerequisite: Students must be enrolled in the PT Professional Education program and have completed all academic courses with a grade of "B-" or better, with an overall GPA of 3.0 or above (P/NC only). (Winter)*

PTHR 368. Clinical Internship II (6)
Full time clinical internship for practicing learned examination and intervention techniques and other professional behaviors. Toward the end of this internship, students will be expected to function with a high level of independence while still under the supervision of qualified licensed physical therapists. *Prerequisite: Students must be enrolled in the PT Professional Education program and have completed all academic courses with a grade of "B-" or better, with an overall GPA of 3.0 or above (P/NC only). (Spring)*

PTHR 369. Clinical Internship III (6)
Full time clinical internship for practicing learned examination and intervention techniques and other professional behaviors. Toward the end of this internship, students will be expected to function with a high level of independence while still under the supervision of qualified licensed physical therapists. *Prerequisite: Students must be enrolled in the PT Professional Education program and have completed all academic courses with a grade of "B-" or better, with an overall GPA of 3.0 or above (P/NC only). (Spring)*

PTHR 391. Graduate Independent Study (1-3)

PTHR 398. Research Literature Review (1)
This course will help the student apply the basic principles of the scientific method to read and interpret professional literature and to critically analyze new concepts and findings in that literature. The student will choose a research topic in health science, perform a literature search of primary research articles related to their topic, critically analyze those research articles, and write a related literature paper summarizing and synthesizing the information gathered from their literature search. Prerequisite: a "B-" or above in PTHR 328.

Application information for the entry level Doctor of Physical Therapy Degree

Applications postmarked by November 1 of the year prior to that of admission will receive first priority. Admissions is on a rolling basis until the class is filled. After November 1, other applications may be considered, space permitting. Students are admitted to begin classes only in the fall of each year. Admission to the program does not guarantee successful completion; ability to work successfully in clinical settings is as important as academic achievement.

For further information and application forms for the entry level DPT, contact the Department of Physical Therapy, or visit the web site at: pharmacy.pacific.edu/ptdegree-intro.html.

Speech-Language Pathology

Robert Hanyak, Chair

Associate Professors: Fogle, Hanyak, Smith-Stubblefield, Ward-Lonergan

Assistant Professor: Susca

Clinical Coordinator: Nimtz

Clinical Instructors: Kost, Germino

Mission

The mission of the Speech-Language Pathology department is to prepare reflective speech-language pathologists for lifelong success by providing an excellent, student-centered experiential learning environment. Our students are mentored in developing leadership, critical thinking skills, and a strong commitment to their profession and society. These efforts are assisted by the department's commitment to professional and liberal arts programs. The faculty is dedicated to continued professional growth through clinical practice, scholarly activity, and service to the profession and the community. The graduate professional preparation program is developed in accordance with state and national accreditation standards and guidelines to ensure that graduates provide exemplary professional practice throughout their careers.

The Study of Speech-Language Pathology

Speech-Language Pathology is a professional program of habilitative and rehabilitative services. This program leads to varied occupations involved with persons with communication handicaps.

Speech-Language Pathologists work with people of all ages and are prepared to evaluate speech and language problems. They plan and carry out programs to correct or modify the disorder, or develop other means of communicating. Some examples of the types of problems include articulation disorders, stuttering, voice, delayed language development and aphasia.

The Bachelor of Science in Speech-Language Pathology is a pre-professional program leading toward a career in rehabilitative services for speech, hearing and language impaired individuals. The department has a designed major which, when combined with the graduate program, leads to the academic and in-residence clinical requirements for the Certificate of Clinical Competence in Speech-Language Pathology. This certificate is awarded by the American Speech-Hearing-Language Association.

Special Features

In addition to demonstrating satisfactory academic performance, students will be allowed to demonstrate clinical competence. This includes:

1. The ability to identify individuals with communication disorders.
2. The ability to perform comprehensive evaluation of individuals with communicative disorder.
3. The ability to effect positive changes in the communicative skills of individuals with communicative disorders.
4. The ability to relate effectively to clients, their families and fellow professionals.
5. The ability to conduct oneself as a prospective professional, accepting the responsibilities and exhibiting the interest which this requires.

Clinical competencies are assessed throughout the clinical experience and are considered in the recommendation to grant the B.S. degree.

Clinical practicum experiences are performed in the University's Speech, Hearing and Language Center and the Stockton Scottish Rite Childhood Language Disorders Center. These local centers allow the student to directly observe and participate in the habilitative and rehabilitative processes. At the junior level, students may participate in a junior clinician role in conjunction with more advanced students. At the senior level, students are directly responsible for their own clients in the Center. All clinical experiences are under the direct observation of licensed and certified personnel.

Accreditation

The program in Speech-Language Pathology is accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association.

Speech-Language Pathology Facilities

The department is housed in quarters designed specifically for the clinical aspects of the program. Observation mirrors and audio-monitoring systems are installed in each of the 18 therapy rooms. Facilities allow for close student-faculty interaction and clinical experiences incorporating all persons involved in the therapeutic process. The University Speech, Language and Hearing Center and the Scottish Rite Center strengthens the clinical aspect of the program and serves to abet the development of strong clinical skills.

Career Options

Speech-language pathologists are members of health care teams. Depending upon the nature of the problem, they may work with physicians, surgeons, orthodontists, psychologists, educators, counselors or social workers. Employment settings of the speech-language pathologist include public schools, clinics, hospitals and private practice.

Recommended High School Preparation

A strong college preparatory program will serve the student very well in this major. Although not required, experience in a foreign language, good writing skills, behavioral and biological sciences and mathematics will enhance the student's skills for performance in the major.

Speech-Language Pathology Advantage

Students who complete their speech-language pathology major requirements at the University of the Pacific are given priority admission to the Master's degree program provided that they meet all of the following conditions:

1. Obtain a Speech – Language Pathology faculty advisor and complete the prerequisite requirements, including general education courses in an approved sequence.
2. Complete a minimum of 54 semester units that must be taken at the University of the Pacific (124 units are necessary for the bachelor's degree)
3. Complete all coursework and clinical practicum requirements and meet overall and departmental grade point averages upon the completion of the Bachelor's degree.
4. Maintain a minimum grade point average in both of the following categories:

   Overall GPA 3.2
   all transferable college level courses.

   Major GPA 3.5
   all required speech-language pathology courses, all SLPA courses must be completed with a grade of B or better, all others C or better.

   (The University Grade Replacement Policy applies to both grade point averages)
5. Satisfactorily complete the prerequisite clinical practicum with a grade of B+ or better, both semesters.
6. Submit satisfactory scores from the Graduate Record Examination by February 1 of the calendar year in which the student expects to begin the graduate program. Contact department faculty advisor for current minimum satisfactory scores. The Graduate School must receive official results directly from ETS.
7. Apply to the Graduate School:

   Application will consist of completing an abbreviated form accompanied by a non-refundable deposit that will reserve a space in the program. This deposit will be applied to tuition for the first semester if the student attends Pacific.

Admission Criteria

To be accepted into the Speech-Language Pathology Advantage Program the student must be admitted to the University and have:

Freshman:	High school GPA of 3.4 and SAT combined score of 1100 (with at least a 500 in both Verbal and Math)
Transfers:	Overall GPA of 3.2

This policy applies to all freshman, sophomore and junior speech-language pathology students enrolling at the University of the Pacific after Fall, 2006 and is subject to change for anyone entering the program after that date. Students may reapply to the program at the junior level if not accepted earlier.

Typical First-Year Program

No courses within the major are required during the first year. However, students interested in the major are encouraged to take SLPA 51-Introduction to Speech-Language Pathology for an overall survey of the field during their first semester. The student is also encouraged to take a broad selection of courses in the Humanities, Social and Behavioral Sciences and the Physical Sciences toward fulfillment of the general education requirements.

Program Requirements

The B.S. degree in Speech-Language Pathology is viewed as a pre-professional degree which requires a year of clinical experience. In order to participate in Beginning and Intermediate Clinical Practicum, the student must have a 3.0 GPA in the major and successfully complete a junior clinician experience.

In order to be certified, licensed and/or credentialed in the field the student must acquire the Master's degree. Further information regarding advanced work may be obtained by contacting the Speech-Language Pathology Department.

Major Requirements		Units
51	Introduction to Speech-Language Pathology	3
101	Clinical Methods I	1
103	Clinical Methods II	1
105	Clinical Methods III	1
107	Clinical Methods IV	1
121	Speech and Language Development	3
123	Language Disorders I	3
125	Articulation and Phonology	3
127	Audiology	3
129	Anatomy and Physiology of Speech	3
131	Phonetics	3
137	Speech and Hearing Science	3
139	Diagnostics	3
141	Research Methods – Speech-Language Pathology	3
143	Multicultural Populations	3
145	Disorders of Fluency	3
147	Neuroanatomy and Physiology	2
149	Organic Disorders	2
183	Diagnostic Lab or 181	1
189a	Beginning Clinic or 110a	1
189b	Intermediate Clinic or 110b	1
PSYC 29	Child Development	4
MATH 35, 37 or PSYC 103	Statistics	4
and	Introduction to Psychology/ Sociology Course	4
One Bio & One Physical Science Course selected from the following:		
BIOL 11	Human Anatomy and Physiology	4
BIOL 41	Introduction to Biology	4
CHEM 23	Elements of Chemistry	4
PHYS 17	Concepts of Physics	4
PHYS 39	Physics of Music	4
Major Total		**63**

Speech-Language Pathology Minor

A minor in Speech-Language Pathology 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, Psychology, Communication and Pre-Health Profession Preparation.

Requirements (20-21 units)

12 units of the following core courses:

SLPA 51	Introduction to Speech-Language Pathology
SLPA 121	Speech/Language Development
SLPA 127	Audiology
SLPA 129	Anatomy and Physiology of Speech
SLPA 131	Phonetics

8-9 units selected from the following in consultation with a departmental adviser.

SLPA 53	Sign Language I
SLPA 123	Language Disorders I
SLPA 125	Articulation and Phonology
SLPA 137	Speech and Hearing Science
SLPA 143	Multicultural Populations
SLPA 145	Disorders of Fluency
SLPA 147	Neuroanatomy and Physiology
SLPA 149	Organic Disorders

A minimum of 12 units must be completed at the University of the Pacific.

Course Offerings

JCTR 75. Introduction to Helping Professions (2)
The purpose of this course is to familiarize undergraduate students with the fields providing health and education services to individuals and their families. Students will be introduced to various career options through panel presentations, discussions, and case studies focusing on prevention, assessment, treatment, and intervention issues. Faculty from several departments on campus, including Speech-Language Pathology, Special Education, Education, Counseling Psychology, Psychology, Physical Therapy, Pharmacy, Music Therapy, and Adapted Physical Education, will present information on their respective professions during the course of the semester. Other related fields such as Occupational Therapy, Nursing, and Social Work will be integrated into the design.

SLPA 51. Introduction to Speech-Language Pathology (3)
An introduction to language, voice, fluency, articulation and hearing disorders in children and adults. Open to non-majors.

SLPA 53. Sign Language I (3)
An introduction to comprehension and expression through sign language. Open to non-majors, with permission from Dept.

SLPA 55. Sign Language II (3)
A major part of the instruction for this course will be conducted in sign language. This course requires active participation by the students to further develop beginning sign language skills.

SLPA 101. Clinical Methods I (1)
Observations and analysis of: therapy, materials, teaching methods, behavioral management and data collection. *Corequisite: SLPA 125.*

SLPA 103. Clinical Methods II (1)
Methods, materials, treatment of communicative disorders: staffings, case studies, presentations, demonstrations, and class discussion. *Corequisite: SLPA 123.*

SLPA 105. Clinical Methods III (1)
To assist the beginning clinician with: writing professional reports, accountability issues, exploring a variety of therapy delivery models. *Corequisite: SLPA 189a.*

SLPA 107. Clinical Methods IV (1)
Discussion and analysis of current clinical experiences. Exploration of different disorders, populations and work environments. *Corequisite: SLPA 189b.*

SLPA 110. Clinical Observations (1)
Structured clinical observations for seniors not enrolled in SLPA 189a or 189b. *Prerequisites: SLPA 101, 103, 123, 125.* Pass/No-Credit only.

SLPA 121. Speech and Language Development (3)
A course designed to provide basic information relative to speech and language acquisition in normal children. Phonological, morphological, syntactic, semantic and pragmatic development will be considered, as well as psychosocial and intellectual correlates. Open to non-majors.

SLPA 123. Language Disorders I (3)
An introduction to the speech, language and behavioral characteristics associated with mental retardation, hearing impairment, emotionE7al disturbance and neurological involvement. Discussion of appropriate diagnosis and therapeutic techniques. *Corequisite: SLPA 103.*

SLPA 125. Articulation and Phonology (3)
Etiology, development and management of articulation and phonologic disorders. *Corequisite: SLPA 101.*

SLPA 127. Audiology (3)
Introductory course in audiology, emphasizing basic acoustics and psychoacoustics, anatomy and physiology of the ear, hearing measurement (pure-tone, speech and tympanometry) and types and causes of hearing impairment. Open to non-majors.

SLPA 129. Anatomy and Physiology of Speech (3)
Examination of the anatomy and physiology of the mechanisms of speech and hearing. Open to non-majors.

SLPA 131. Phonetics (3)
Analysis and classification of the phonemes of standard and nonstandard dialects of American English; intensive practice in the use of the International Phonetic Alphabet; intensive use of Visual Phonics; and the application of phonetics to communicative disorders.

SLPA 137. Speech and Hearing Science (3)
Provides the student with academic and laboratory training in the sciences that provide the foundation of clinical practice in communication disorders. Students will gain proficiency with various types of clinical equipment through hands-on experience.

SLPA 139. Diagnostics (3)
Principles, models and methods of assessment of speech and language disorders, including interview, testing and reporting procedures.

SLPA 141. Research Methods – Speech-Language Pathology (3)
Exploration of various research methodologies and statistical designs applicable to communicative disorders. Study and critical evaluation of empirical studies from current literature. Scholarly and professional writing skills. Application of the scientific method, including use of qualitative and quantitative data, to assessment and treatment of clients with communicative disorders.

SLPA 143. Multicultural Populations (3)
Theoretical models of normal second language acquisition and bilingualism; emphasis on relationship to accurate identification of communication disorders. Distinguishing between language differences due to differing cultural linguistic variables and underlying, cross-lingual language impairment. Current research and trends in diagnosis and re-mediation techniques for multicultural clients. Problem-solving approaches for specific clinical cases.

SLPA 145. Disorders of Fluency (3)
Introductory course in fluency disorders (stuttering) with emphasis upon etiology, theory, diagnosis, and treatment of this speech disorder.

SPLA 147 Neuronanatomy and Physiology (2)
A study of the structure and function of the human nervous system as it relates to speech, language and hearing. *Prerequisite: SPLA 129.*

SPLA 149. Organic Disorders (2)
"Organic Disorders" in speech-language pathology usually include a cleft palate, voice disorders, and the various neurological disorders such as aphasia, apraxia, and dysarthria. The students will be presented information on the anatomy and physiology of each of these disorders as well as characteristics for identification and diagnosis. General principles of therapy for these disorders will be briefly presented.

SPLA 181 Diagnostic Observation (1)
Structured observations for senior not enrolled in SLPA 183. *Prerequisites: SLPA 139 (may be taken concurrently)*. Pass/No credit only.

SLPA 183. Diagnostic Laboratory (1)
A weekly three-hour lab experience that includes demonstration and practicum in assessment of speech and language disorders. *Corequisite: SLPA 139.*

SLPA 189a. Beginning Clinic (1)

SLPA 189b. Intermediate Clinic (1)

SLPA 191. Independent Study (1-4)

SLPA 193. Special Topics (2 or 4)

SLPA 201. Professional Issues (1)
Seminar in ethical and legal issues, practice standards, employment and business considerations for the practice of speech-language pathology.

SLPA 205. Adult Neurological Disorders (3)
Neurologically based speech and language disorders in adults will be investigated. The understanding and management of aphasia and similar language disorders are included. *Prerequisite: graduate standing.*

SLPA 209. Language Disorders II (3)
Assessment and treatment of children and adolescents with language disorders in the language-for-learning and advanced language stages. An overview of language disorders in children and adolescents and the relationship between language and literacy are also components of this course.

SLPA 211. Language Disorders III (3)
Assessment and treatment of children with language disorders in the prelinguistic, emerging, and developing language stages. Causation, prevention, and early intervention issues, as well as considerations for special populations, are also covered in this course. *Prerequisites: SLPA 209 or permission of the instructor.*

SLPA 213. Advanced Clinical Audiology (3)
Audiologic tests for site of lesion, functional auditory disorders, and central auditory dysfunction; test procedures include advanced speech, acoustic reflex, and auditory brain stem response testing. *Prerequisite: graduate standing.*

SLPA 215. Aural Rehabilitation (3)
Theory and methods of habilitation/rehabilitation of hearing impaired children and adults. Procedures include speech and language development, speech conservation, speech reading, auditory training and amplification with individual and group hearing aids. *Prerequisites: SLPA 127 and graduate standing.*

SLPA 217. Voice Disorders (3)
This graduate course concerns the study of the human voice and related disorders. Course content includes normal vocal development as well as functional and organic voice disorders. The primary course objective is to instruct students in the etiology, diagnosis, and treatment of vocal pathologies. *Prerequisite: graduate standing.*

SLPA 219. Phonological Disorders (3)
Critical analysis of research and theory in etiology, diagnosis, and treatment of phonological and articulatory disorders. Emphasis on current scientific research findings and their application to clinical work. Assessment and intervention techniques for disorders of articulation and phonology. *Prerequisite: graduate standing.*

SLPA 221. Motor Speech Disorders (2)
Disorders associated with apraxia and dysarthria in adults and children, including cerebral palsy and head injury. *Prerequisite: graduate standing.*

SLPA 223. Counseling Skills for SLPs (1)
This course is designed to help Speech-Language Pathologists develop their counseling and communication skills when working with clients/patients and families, and that counseling skills are involved in every interaction. The purpose of this course is not to make "counselors" of Speech-Language Pathologists, but to help incorporate knowledge and skills of counseling in order to enhance their clinical effectiveness. The course will integrate principles from speech-language pathology, counseling psychology, and family therapy.

SLPA 225. Public School Issues (1)
Seminar in organization and administration of language, speech, and hearing programs in public schools. Review of federal and state legislation and legal decisions influencing public school speech-language pathologists. *Prerequisite: graduate standing.*

SLPA 229. Dysphagia/Swallowing Disorders (3)
This graduate-level course investigates the nature of normal and abnormal swallowing function, the causes of dysphagia, its assessment and clinical management. *Prerequisite: graduate standing.*

SLPA 231. Augmentative/Alternative Communication (2)
The course will provide students with information about unaided and aided systems for alternative and augmentative communication. Students will gain information and laboratory experiences which help them determine the most appropriate devices and methods of therapy for an individual and how to incorporate them into a complete communication system. *Prerequisite: graduate standing.*

SLPA 233. Cleft Palate and Syndromes (2)
Analysis of research and theory in etiology, diagnosis and treatment of craniofacial anomalies and other genetic syndromes involving communicative disorders. Diagnosis and treatment of speech disorders associated with cleft palate will be emphasized. *Prerequisite: graduate standing.*

SLPA 235. Gerontology (2)
Prepare students to work with the geriatric population, primarily in skilled nursing facilities and to understand and better cope with the aged people in their own lives. *Prerequisite: graduate standing.*

SLPA 237. Managed Care (1)
Graduate seminar in ethical and legal issues, practice standards, employment and government regulations for the speech-language pathologist practicing in the medical environment.

SLPA 245. Disorders of Fluency (2)
Introductory course in fluency disorders with emphasis upon etiology, theory, diagnosis, and treatment of stuttering and cluttering.

SLPA 285. Colloquium in Speech-Language Pathology (2)
Lectures presented by invited professionals covering current issues in speech-language pathology. SLPA 285 may be repeated annually.

SLPA 287a. Internship in Speech and Hearing (2-4)

SLPA 287b. Fieldwork in Speech and Hearing (2)

SLPA 288. Externship (9)
Graduate student status. This experience is designed to provide students with a full-time, supervised experience in the field. Educational and medical settings are available. Prerequisite: Open only to graduate students in the Department of Speech-Language Pathology who have completed all of their academic coursework, comprehensive examinations and have maintained a graduate GPA of 3.0 or higher.

SLPA 289a.	Advanced Clinic	(1-3)
SLPA 289b.	Advanced Clinic	(1-3)
SLPA 291.	Independent Graduate Study	(1-4)
SLPA 293.	Special Topics	(2-4)
SLPA 297.	Graduate Research	(1-4)
SLPA 299.	Thesis	(2 or 4)

Thomas J. Long School of Pharmacy and Health Sciences Faculty

Administrative Officers

Phillip R. Oppenheimer, 1997, Dean, School of Pharmacy and Health Sciences, Professor of Pharmacy Practice, Pharm.D., University of California, San Francisco, 1972.

Sian M. Carr-Lopez, 1990, Vice Chair of Pharmacy Practice, Advanced Practice Experience, Northern California; Professor of Pharmacy Practice, Pharm.D., University of the Pacific 1985.

Donald G. Floriddia, 1968, Associate Dean, Professor of Pharmaceutics, B.S., Massachusetts College of Pharmacy, 1966; M.S., 1968; Ph.D., University of the Pacific, 1971; M.S. University of Southern California, 1971.

Robert E. Hanyak, 1985, Chair, Department of Speech-Language Pathology, Associate Professor, B.A., University of the Pacific, 1979; M.S., University of the Pacific, 1981; Au.D., University of Florida, 2005.

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Department of Pharmacy Practice

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Susan L. Ravnan, 1998, Associate Professor of Pharmacy Practice, Pharm.D., University of the Pacific, 1994.

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Parminder "Bobby" Singh, 2006, Adjunct Professor, B.Pharm., Punjab University, 1985; M.Pharm., Punjab University, 1987; Ph.D., University of Queensland, 1992.

Andrew Simental, Jr., 1990, Adjunct Professor, B.S., California State University, San Bernardino, 1980; Pharm.D., University of the Pacific, 1983.

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Martha R. Speckman, 1996, Adjunct Professor, B.A., California State University, Long Beach, 1989; Pharm.D., University of California, San Francisco, 1993.

Steve Spinetti, 2001, Adjunct Professor, B.S., University of California, Davis, 1977; Pharm.D., University of Southern California, 1982.

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Ryan T. Suemoto, 1999, Adjunct Professor, Pharm.D., University of the Pacific, 1999.

James Sullivan, 2001, Adjunct Professor, B.S. Pharmacy, Mass. College of Pharmacy, 1992.

Wesley K. Sumida, 1998, Adjunct Professor, B.S., University of Washington, 1987; Pharm.D., University of Washington, 1989.

Victoria Y. Sun, 1992, Adjunct Professor, B.S., Taipei Medical College, 1980; M.S., St. John's University, Jamaica, NY, 1980.

Susan Sung, 1999, Adjunct Professor, Pharm.D., University of California, San Francisco, 1997.

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Susan Takeda, 2003, Adjunct Professor, Pharm.D., University of the Pacific, 1986.

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Mary Tong, 2000, Adjunct Professor, B.S., San Francisco State University, 1990; Pharm.D., University of California San Francisco, 1994.

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Gregory M. Umeda, 1999, Adjunct Professor, Pharm.D., University of the Pacific, 1996.

Jim Umino, 2003, Adjunct Professor, Pharm.D., University of California, San Francisco, 1969.

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Michael S. Ureda, 1999, Adjunct Professor, B.S., University of California, Riverside, 1973; Pharm.D., University of the Pacific, 1977.

David D. Valenzuela, 1994, Adjunct Professor, B.S.Pharm., University of Arizona, 1976.

Barbara E. Van Mater, 1996, Adjunct Professor, Pharm.D., University of the Pacific, 1992.

Nicole S. Varnell, 2004, Adjunct Professor, B.A., University of California, Berkeley, 1995; Pharm.D., University of the Pacific, 1999.

Sriram Vemuri, 2003, Adjunct Professor, B.Pharm, Andhra University, 1972; M.S., Purdue University, 1975; Ph.D., University of Rhode Island, 1995.

Gary L. Viale, 2000, Adjunct Professor, Pharm.D., University of California, San Francisco, 1973.

Eleadon O. Vita, 1998, Adjunct Professor, B.S., University of California, Irvine, 1990; Pharm.D., University of California, San Francisco, 1994.

Jacqueline H. Vo, 2000, Adjunct Professor, Pharm.D., University of California, San Francisco, 1992.

Mai P. Vu, 2000, Adjunct Professor, B.S., University of California, Davis, 1988; Pharm.D., University of California, San Francisco, 1997.

Helga B. Wachholz, 2000, Adjunct Professor, Pharm.D., University of Arizona, 1986.

Steven L. Waite, 1992, Adjunct Professor, Pharm.D., University of California, San Francisco, 1987.

Michael D. Wakefield, 1996, Adjunct Professor, B.S., University of La Verne, 1981; Pharm.D., University of the Pacific, 1984.

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Mike Walsh, 2003, Adjunct Professor, Pharm.D., University of the Pacific, 1982

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Cathy Wong, 2002, Adjunct Professor, Pharm.D., University of the Pacific, 1995.

Cecy S. Wong, 2002, Adjunct Professor, Pharm.D., University of the Pacific, 1999.

Darlene Wong, 2003, Adjunct Professor, Pharm.D., University of the Pacific, 1995.

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Christopher A. Woo, 1991, Adjunct Professor, Pharm.D., University of the Pacific, 1988.

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Chester Yee, 2005, Adjunct Professor, B.S., Idaho State University, 1961; B.S.Pharm., 1962.

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Larry A. Zelman, 1985, Adjunct Professor, Pharm.D., University of Southern California, 1983.

Winnie Zing, 2005, Adjunct Professor, Pharm.D., University of California, Berkeley, 1988.

Thomas F. Zioncheck, 2002, Adjunct Professor, B.S., State University College at Oneonta, 1984; Ph.D., Purdue University, 1988.

Dongxiao Zhang, 2006, Adjunct Professor, B.S., Nakai University, 1990; Ph.D., Case Western Reserve University, 1996.

Matthew J. Zoolakis, Pharm.D., University of the Pacific, 1993.

graduate school

Dean
Denis J. Meerdink
School Telephone
209.946.2261
Website
www.pacific.edu/graduate

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.

Unique and Distinctive Programs

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.

Pharmaceutical & Chemical Sciences

Interdisciplinary programs in the Thomas J. Long School of Pharmacy and Health Sciences 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. Therefore, its programs emphasize a multi-disciplinary perspective and skills for solving basic problems in individual and community health.

Biological Sciences

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 a variety of techniques such as slab gel electrophoresis, electron microscopy and computerized data reduction.

Education

The Gladys L. Benerd School of Education prepares thoughtful, reflective, caring, and collaborative professionals for service to diverse populations. The School of Education directs its efforts toward researching the present and future needs of schools and the community, fostering intellectual and ethical growth, and developing compassion and collegiality through personalized learning experiences. Undergraduate, graduate, and professional preparation programs are developed in accordance with state and national accreditation standards and guidelines to ensure that students who complete these programs will represent the best professional practice in their positions of future leadership in schools and the community.

Communication

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.

Business

In the Eberhardt School of Business, MBA students work with senior managers throughout their studies in internship and mentorship programs researching and solving actual business problems in the workplace.

Psychology

In psychology, students work toward a Master of Arts degree in behavioral psychology emphasizing either applied behavior analysis/therapy or behavioral medicine. Students prepare for positions that provide 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 elsewhere for those students who wish to study beyond the master's degree.

Speech Language Pathology

The Master of Science degree in speech-language pathology prepares students for California licensure and national certification. Both on-campus and off-campus practicums are comple-

ments to the academic program. Students may also elect to obtain the Clinical Rehabilitative Services Credential/Speech, Hearing and Language.

Music

In the Conservatory of Music, some students are being prepared to enter college teaching or music education in public or private schools and others study music therapy. Music education students have the opportunity to become involved in a carefully developed micro-rehearsal program.

Physical Therapy

The mission of the Physical Therapist Professional Education Program is to provide a learning environment of academic excellence and to ensure excellence in clinical education in order to facilitate and encourage acquisition of the knowledge, problem solving and clinical skills as well as of the humanitarian and professional values and behaviors necessary for the successful practice of physical therapy. The Doctor of Physical Therapy (D.P.T.) program is committed to educating men and women to lead useful and productive lives in response to their personal needs, the needs of society, and of the profession. Programs of learning are offered to prepare students for entry into the profession of physical therapy as well as to prepare graduates for life-long learning.

Sport Sciences

The Master of Arts program in sport sciences provides for scholarly study in the areas of sport pedagogy, sports medicine, sport management, adapted physical education sport psychology and sociology of sport.

Intercultural Relations

The School of International Studies, in a partnership with the Intercultural Communication Institute in Portland, Oregon, offers a Master of Arts degree in Intercultural Relations. The program is limited residency, and designed to meet the needs of working professionals who wish to earn an advanced degree while maintaining employment or other commitments. Students complete their core coursework in 18 months, through attendance at three 2-week residencies in Portland, or every January and July. The core curriculum emphasizes a theory-into-practice model, stressing the application of relevant theoretical frameworks and concepts to real-world contexts, including both domestic diversity and international settings. Students develop knowledge and skills in the principles of intercultural relations, leadership and managing change across cultures, problem-solving in intercultural settings, adult learning in a cultural context, culture in the organization, and research and analysis. The program requires a thesis.

Degrees

The Graduate School offers programs through the departments of the College of the Pacific, the Eberhardt School of Business, the Gladys L. Benerd School of Education, the Thomas J. Long School of Pharmacy and Health Sciences, the School of International Studies and the Conservatory of Music. Advanced degrees are the Master of Arts; the Master of Science; the Master of Business Administration; the Master of Music; the Master of Education; the Educational Specialist; the Doctor of Education; and the Doctor of Philosophy.

Degree Programs

The Graduate School offers the following graduate degrees:

Biological Sciences (M.S.)

Business Administration (M.B.A.)

Communication (M.A.)

Education (M.A., M.Ed. Ed.S., Ed.D., Ph.D.)

Intercultural Relations (M.A.)

Music (M.M.)

Music Therapy (M.A.)

Pharmaceutical/Chemical Sciences (M.S., Ph.D.)

Physical Therapy (D.P.T.)

Psychology (M.A.)

Speech-Language Pathology (M.S.)

Sport Sciences (M.A.)

Degree programs leading to the Ph.D. are offered in a newly redesigned interdisciplinary program with faculty from physiology-pharmacology, medicinal chemistry, pharmaceutics, clinical pharmacy and chemistry.

Degree programs leading to the Ed.D. are offered in the following areas: educational administration; educational psychology; and curriculum and instruction.

A degree program leading to the Ed.S. and a Ph.D. is offered in School Psychology.

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 Speech-Language Pathology is accredited by the American Speech-Language-Hearing Association. The Physical Therapy degree program is accredited by the American Physical Therapy Association. The School of Business is accredited by the American Assembly of Collegiate Schools of Business.

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 two specialist programs (Special Education and Bilingual/Cross-cultural Education [Spanish-English]).

Degree Requirements

Master's

Satisfactory completion of a minimum of 30 or 32 units of graduate work, depending on whether the student follows a thesis plan, a non-thesis plan or a plan which also meets certain State certification requirements.

Consult with the Graduate School for specifics relating to graduate unit requirements and the number of units which may be taken outside the major field. For the Master of Education degree, the minimum number of units is 38 and the completion of a preliminary teaching credential.

Ed.D., Ed.S. and Ph.D.

Degree requirements are outlined in information sheets specific to the program.

For detailed program listings and admission requirements, write for information at the following address:

Dean of Research and Graduate Studies
University of the Pacific
Stockton, California 95211
or
e-mail: gradschool@pacific.edu;
fax: (209) 946-2858;
telephone: (209) 946-2261;
www.pacific.edu/graduate.

Financial Assistance

Contact the appropriate academic 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 Gladys L. Benerd School of Education and the Financial Aid Office.

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Dean
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A professional school offering the Doctor of Dental Surgery degree in a unique 36-month program that prepares graduates to provide quality dental care and to supplement and adapt their knowledge and skills throughout their professional lives.

University of the Pacific Arthur A. Dugoni School of Dentistry prepares competent general dentists in a humanistic environment. 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 instruction as well as research facilities. The school also has nearby, reasonably-priced student housing, a completely renovated community-based teaching clinic in Union City, and a new, state-of-the-art dental clinic on the Stockton campus.

In addition to the Doctor of Dental Surgery degree, Pacific has a graduate program in orthodontics leading to a certificate and the Master of Science in Dentistry degree; a graduate program in oral and maxillofacial surgery leading to a certificate; an International Dental Studies program which grants a D.D.S. degree after two years of training to individuals who already have graduated from a foreign dental school; a baccalaureate program in dental hygiene offered in conjunction with the College of the Pacific; and a residency program in Advanced Education in General Dentistry (AEGD) with locations in San Francisco, Union City, and Stockton.

The Arthur A. Dugoni School of Dentistry is well known for the quality of its clinical education, its 36-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. All dental education programs are fully accredited by the Commission on Dental Accreditation. The School of Dentistry is a member of the American Dental Education Association. In 2004 the school was named in honor of its long-standing dean, Dr. Arthur A. Dugoni. Dr. Pat Ferrillo assumed the deanship upon Dr. Dugoni's retirement in 2006.

Mission

The mission of the School of Dentistry is to:

1. Educate individuals who, upon completion of the program, will be professionally competent to provide quality dental care in an evolving profession.
2. Provide patient-centered, comprehensive, quality care in an efficient clinical model which demonstrates the highest standards of service achievable.
3. Conduct research and disseminate findings which promote the scientific practice of dentistry.
4. Assist dental professionals with their diverse needs for continuous professional growth through information, formal advanced training, and other services.

The school as a community, its members, and its graduates will be distinguished by the following attributes:

- Continuous enhancement through professional development.
- Humanistic values that respect the dignity of each individual and foster the potential for growth in all of us.
- Application of theory and data for continuous improvement.
- Leadership in addressing the challenges facing the profession of dentistry, education, and our communities.

Curriculum

Basic biomedical, pre-clinical, and clinical arts and science subjects are combined with applied behavioral 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 36-month curriculum leading to the degree of Doctor of Dental Surgery begins in July and is divided into 12 quarters, each consisting of 10 weeks of instruction, one week of examinations, and a vacation period of between one and four weeks.

During the first quarter, students practice use of dental instruments and materials, working position and posture using direct and indirect vision, and basic dental laboratory procedures, and are introduced to study and test-taking skills and methods of time management that will assist them in succeeding in this professional curriculum. Biomedical science instruction in anatomy, biochemistry, physiology, pharmacology, and microbiology is offered in the first eight quarters, followed by multi-disciplinary presentations of basic science foundations for

clinical topics such as the importance of saliva, tissue aging, nutrition, and infection control. Throughout the program, students learn application of basic sciences to biomedical problems of dentistry using the scientific method of inquiry.

Pre-clinical instruction takes place in the first four quarters with students learning to work from a seated position in a state-of-the-art pre-clinical simulation laboratory and with a chair-side assistant in conjunction with pediatric dental practice. Clinical work with patients is initiated in the fourth quarter.

The school's comprehensive patient care philosophy is based on the concept of private dental practice where the student assumes responsibility for assigned patients' treatment, consultation, and referral for specialty care. Second-year students practice clinical dentistry 15 hours per week; during the third year the number of clinical hours increases to 29 per week (evening clinic appointments supplement patient care opportunities and are available to second- and third-year students). In the clinic students learn to provide comprehensive dental care under the direction of group practice administrators and multi-disciplinary faculty 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 orthodontic residents in adjunctive orthodontic care and oral development clinics.

Advanced clinical dentistry and evaluation of new developments and topics that involve several disciplines are learned in the third year in conjunction with patient care. Second and third-year students participate in patient care at an ever increasing number of extramural sites. Extramural clinics are located in the numerous treatment facilities throughout the Bay Area and beyond, and include hospitals, community clinics, and skilled nursing facilities. Pacific currently has affiliations with 24 clinics, a figure expected to grow in the future. At extramural clinic sites students are taught by Pacific faculty in conditions that more closely mirror private practice. Students typically treat from 4-6 patients during the course of a day. Rotations at these sites occur at a number of different times, including weekdays during the academic year, weekends, and vacation periods. Students typically find these experiences to be highly educational, teaching them how to provide excellent patient care in a more condensed time frame.

Every student must participate in extramural patient care during their enrollment.

Behavioral science aspects of human resource and practice management, ethics, and dental jurisprudence are presented throughout the curriculum. Epidemiology and demography of the older population, basic processes of aging and dental management of hospitalized patients, geriatric patients and those with the most common disabling conditions are studied during the third year.

Students are counseled individually with regard to establishing practices and applying for post-graduate education. A weekend conference devoted to new developments in dentistry serves to acquaint students with opportunities for post-graduate education and with alumni views of the realities of dental practice.

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 through the American Dental Education Association's Application Service (AADSAS), 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 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.

Students are encouraged to develop their course of study with the assistance of a pre-dental adviser. Pre-dental advisers can identify courses that meet School of Dentistry requirements and help prepare individuals for the rigors of professional education and practice. They are also aware of courses that would best prepare a student for competitive scores on the Dental Admission Test (DAT).

Number of Required Pre-dental Courses

Semesters	
Biological Sciences with laboratory*	4
General Physics with laboratory	2
Inorganic Chemistry with laboratory	2
Organic Chemistry	2
English Composition, Communication or Speech**	2

** Predental students are advised to complete one course in anatomy or physiology as part of the biological sciences requirement. The admissions committee requires applicants to complete two semesters of organic chemistry or, upon direction of the predental adviser, one semester each of organic chemistry and biochemistry.*

*** 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.*

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 knowledge of required subjects and/or those in areas such as economics, computer science, business administration and the humanities are recommended.

The Dental Admission Test

The computer-based format of the DAT is available on almost any day of the year. To be considered for admissions the exam must have been taken within 18 months of the date of the application. Preference for admission is given to students who provide scores no later than September for the class entering the following July. Information and applications are available from the Dental Admission Test Program, Division of Education, American Dental Association at 800-621-8099 or visit www.ada.org.

Application Materials

The University of the Pacific School of Dentistry participates in the American Association of Dental Schools Application Service (AADSAS). AADSAS is an information clearinghouse which transmits to a dental school the biographical and academic data required by admission committees, thereby relieving the applicant of the burden of completing multiple and repetitious individual applications. All AADSAS applicants must submit an online application at the ADEA web site **www.adea.org/aadsas.** Submit official transcripts from each college and university attended, *three letters of evaluation, and a check or money order for the AADSAS process-

ing fee to AADSAS , 1400 K Street, Suite 1100, Washington DC 2005. Completed application materials **must be received** by AADSAS no later than December 1 for an applicant to be considered for the class entering in July; however, it is recommended that students apply as early as June. A nonrefundable fee of $75 is required by the school before processing of an application is initiated. The University of the Pacific does not require any secondary application.

*If the applicant's undergraduate institution has a pre-health science advisory committee, a committee evaluation is recommended. Otherwise, three letters of evaluation are required, one from a predental adviser and two from predental or upper division science course professors. At the applicant's discretion, additional letters may be submitted if these provide supplemental information regarding the applicant's character, special abilities, and professional motivation. Evaluations from health care professionals who know the applicant well are encouraged.

Personal Interview

Applicants whose credentials appear to meet predental requirements may be invited to the school for an interview with one or more members of the Admissions Committee and a current dental student. Applicants selected for interview are notified by phone 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 evaluation, evidence of manual dexterity (including the perceptual ability portion of the DAT), other personal attributes and qualities as well as demonstration of his or her understanding about a career in the dental profession. Applicants who are offered the opportunity to enroll must complete planned coursework at a specified performance level.

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 underrepresented minorities and females.

Accelerated Programs

In cooperation with College of the Pacific on the Stockton campus, the School of Dentistry offers three accelerated programs for pre-dental students. The programs were initiated in 1984 and have been refined over the years.

Five-Year Program Leading to a D.D.S. Degree

This program provides the minimum foundation in pre-dental education through two years of study on the Stockton campus for a select group of highly qualified students. Students admitted to the program take a prescribed list of general education and science courses as undergraduates in College of the Pacific. After two years of study, they will be evaluated for admission to the School of Dentistry. Freshmen who meet the following criteria will be considered for admission to this highly selective program.

1. An ACT composite score of 31 or a combined SAT-I score of 1,350 with a minimum verbal score of 630.
2. A minimum 3.7 grade point average (on a 4.0 scale) based on a substantial number of math and science courses in a college preparatory program.
3. Acceptable scores on the Pacific fundamental skills tests in reading, writing, and quantitative analysis administered upon entering the University.

Six-Year Program Leading to a B.A. or B.S. Degree and a D.D.S. Degree

Students also have an opportunity to enroll in a selective six-year program of study. Those accepted into the program major in biological sciences or chemistry and obtain a Bachelor of Science or Arts in Biological Sciences or a Bachelor of Arts in Chemistry from 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 School of Dentistry, makes possible the completion of all requirements for both the Bachelor of Science or Arts degree and the Doctor of Dental Surgery degree in a total of six years. Students must meet the following criteria in order to be considered for the program.

1. An ACT composite score of 27 or a combined SAT-I of 1210 with a minimum verbal score of 600.
2. A minimum 3.6 grade point average (on a 4.0 scale) in a solid college preparatory program.
3. Substantial coursework in English, sciences and mathematics.

Seven-Year Program Leading to a B.A. or B.S. Degree and a D.D.S. Degree

This program is designed to provide students with the opportunity to spend four full years earning a bachelor's degree in any discipline, and then complete their dental education at the School of Dentistry in San Francisco. Students benefit by knowing early in their careers that they will be granted an interview to the School of Dentistry provided they meet the requirements outlined in their pre-dental program acceptance letter. Students admitted to this program can major in any subject, but must complete a series of science courses as prescribed by a pre-dental adviser. Freshmen applying for the program should meet the following guidelines:

1. An ACT composite score of 26 or a combined SAT-I of 1,150 with a minimum verbal score of 600.
2. A minimum 3.5 grade point average (on a 4.0 scale) in a solid college preparatory program.
3. Substantial coursework in English, sciences and mathematics.

School of Dentistry Expectations for Admission

To be admitted to the School of Dentistry, accelerated students must: (1) meet all course requirements for the pre-dental programs, including grade point standards; (2) achieve scores of 18 or above in total science, perceptual ability, reading comprehension, and academic average. In all other categories, students must achieve a score of 17 or above; (3) successfully complete an interview at the School of Dentistry; (4) file a competitive and complete AADSAS application by September 1; (5) submit the $75 application fee; and (6) obtain at least three letters of evaluation from science faculty, including one from a pre-dental faculty adviser.

Graduate Orthodontic Program

The advanced orthodontic education program was instituted in 1971. Classes begin each July for the 27-month graduate program in orthodontics. Instruction prepares the resident to provide excellent treatment based on contemporary biologic orthodontic principles and is recognized for education eligibility by the American Board of Orthodontics.

Courses of instruction include principles of orthodontics, cephalometrics, biomechanics, craniofacial biology, research methodology, appliance laboratory, pediatrics, statistics, anatomy, oral pathology, research design, oral physi-

ology, cleft lip and palate, comparative appliances, occlusion and gnathology, orthodontic surgery, restorative-orthodontic relationships, practice management, and periodontic/orthodontic care. Faculty fosters a collegial atmosphere with informal professional relationships and mutual respect between residents and faculty.

Clinical instruction and practice are conducted in the school's orthodontic clinic in seven half-day clinics per week including four general orthodontic, one mixed dentition, one adult care and one surgical orthodontic clinic. Adult patients constitute about one fourth of a student's caseload. Each resident starts 60-70 new patients and 80-90 transfer patients during their training. Residents are also rotated through facial pain research clinic and the Kaiser Craniofacial Panel. All residents participate in a 5-7 day mission for the care of craniofacial cases. Fixed appliance treatment employs the edgewise technique, although instruction permits a wide latitude of clinical variation based on patient needs and special faculty expertise. Experience in treating the entire range of orthodontic problems is provided. From 1998 to 2002 the orthodontic department was the initial testing site for the new Invisalign technology, and today provides a state-of-the-art approach to treating a wide variety of patients with Invisalign. Each resident generally starts 8-12 patients with this appliance.

Each resident engages in an investigative project and completes an acceptable thesis to qualify for the Master of Science in Dentistry degree. Theses are additionally submitted for publication in scientific journals.

Residents are scheduled for didactic and clinical instruction five full days per week, and full participation is required. While there is no prohibition of weekend private dental practice, students' commitments during 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 International Dental Studies Program

University of the Pacific Arthur A. Dugoni School of Dentistry

2155 Webster Street

San Francisco, CA 94115-2399, U.S.A.

Phone: (415) 929-6428
(415) 929-6688

Email: IDS@pacific.edu

The International Dental Studies (IDS) curriculum includes pre-clinical 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; the behavioral sciences include 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 consideration requirements and application procedures are described in a separate brochure available from the coordinator of the International Dental Studies program. Basic prerequisites for consideration are: 1) a certified or notarized copy of a dental degree from a foreign dental school (any degree in a language other than English must be accompanied by a certified translation from a bona fide U.S. translator); 2) successfully passing all four sections of Part I of the Dental national Board Examination and receiving a minimum overall average of 80 or above; 3) submission of a minimum score of 93 or above on the internet-based or 237 or above on the computer-based version of the Test of English as Foreign Language (TOEFL), and if applicable, an English proficiency examination administered at the School of Dentistry; 4) a course-by-course transcript evaluation from ECE; 5) two letters of recommendation no more than 12 months old; and 6) a CV describing the applicant's experience since receiving the dental degree. *Any notarized copy received by the dental school must bare the original notary stamp. Copies of a notarized copy are not acceptable. Provisional degrees are likewise not accepted.*

The IDS admissions committee will consider the following factors in selecting applicants for admission: dental school achievement, National Dental Board Examination scores, English language proficiency, professional experience and advanced degrees. Applicants who meet preliminary requirements and whose documented applications indicate potential for success in the program will be invited to take a technical examination and will go through an interview process administered at the dental school.

Advanced Education in General Dentistry Program

The University of the Pacific Arthur A. Dugoni School of Dentistry has three sites for its Advanced Education in General Dentistry Program. The San Francisco site is located in the dental school. The Union City site is located approximately 35 miles southeast of San Francisco. The third site is on the University of the Pacific Stockton campus in Stockton, California in the Thomas J. Long Health Sciences Center.

The AEGD program at all three sites are one-year, accredited postgraduate residencies in general dentistry with an optional second year. The core of the program involves advanced clinical treatment of patients requiring comprehensive general dental care. There is a comprehensive seminar series attended by residents at all sites that covers all the dental specialties as well as areas such as implantology, and providing dental care to people with complex medical, physical, and psychological situations.

In San Francisco, advanced clinical instruction in all the dental specialties is supplemented by a variety of medical and dental seminars and by rotations in anesthesia and hospital dentistry. There is also training on dental care for persons who have developmental disabilities and people who are medically compromised or elderly.

In Union City, four senior undergraduate students regularly rotate from the main campus in San Francisco. Union City residents are directly involved in the clinical education of these students, giving the residents at this site unique teaching experience.

In Stockton, residents provide comprehensive dental care, attend supplemental seminars and rotations, supervise dental students and work with dental hygiene students in the combined hygiene and dental services community clinic.

At all sites, there is an opportunity to gain more in-depth training in an optional accredited second year residency training program. The second year allows greater flexibility to pursue individual interests, advanced clinical cases, teaching, or research projects.

The start date for the program is July 1. Residents have time off during school holidays including the school's Christmas break and 5 days leave.

There are no tuition requirements to participate in the program. Residents receive an educational stipend plus an incentive bonus based on clinical production. The program uses the American Dental Education Association's PASS application to receive application materials. For

on-line information about Pacific's AEGD Program application process, please visit our site on the Web at http://www.dental.uop.edu. Follow the links to Applicants, and Advanced Education in General Dentistry-Admissions Information

Oral and Maxillofacial Surgery Residency Program

The School of Dentistry offers a residency program in oral and maxillofacial surgery at Highland Hospital in Oakland, California. The program has been in place since 1926, and in 2001 became affiliated with the University of the Pacific. The program is accredited by the Commission on Dental Accreditation. Upon completion of the program the resident is prepared to practice the full scope of oral and maxillofacial surgery and is eligible to apply for certification by the American Board of Oral and Maxillofacial Surgery.

Residents are educated in the basic sciences—anatomy, pathology, pharmacology, and physiology. Clinical practice includes dentoalveolar surgery, comprehensive management of the implant patient, comprehensive management of dentofacial and craniofacial deformities, surgical management of pathologic lesions, temporomandibular joint surgery, aesthetic surgery, reconstructive surgery and management of cleft lip and palate, and trauma management.

There are several hospitals and clinics to which the resident is assigned including: Highland Hospital, Kaiser Hospital in Oakland, Oakland Children's Hospital, La Clinica de La Raza, and the University of the Pacific School of Dentistry clinics.

The residency is forty eight (48) months in length, and is made up of thirty months of oral and maxillofacial surgery, and 18 months of medical rotations including medicine, surgery, plastic surgery, oral pathology, and anesthesiology as well as electives in various surgical or medical subspecialties.

A dental degree is prerequisite to apply to the program. A candidate must submit an application package including a completed PASS application, and three letters of recommendation. University of the Pacific/Highland participates in the National Matching Service.

Dental Hygiene

Recognizing the ever-increasing need for dental hygienists, the Arthur A. Dugoni School of Dentistry and the University have combined forces to offer the nation's only 36 month Bachelor of Science Degree in dental hygiene. Pacific has created this unique three-year accelerated bachelors program (seven semesters and a summer session) to attract highly qualified students. In addition to clinical practice, the baccalaureate hygiene degree allows entry into many positions in teaching, research, administration, public health, private industry, and other areas of hygiene practice, as well as application for entry into advanced degree programs.

Mission

The mission of the University of the Pacific Baccalaureate Dental Hygiene program is consistent with the mission and educational goals of the University and the Arthur A. Dugoni School of Dentistry.

The dental hygiene program will:

- Educate individuals who, upon completion of the program will be professionally competent to provide quality dental hygiene care in an evolving profession
- Provide patient-centered, quality care in an efficient clinical model that demonstrates the highest standards of service achievable
- Provide opportunities for community based, experiential learning

The program and its graduates will be distinguished by the following attributes:

- Continuous enhancement through professional development
- Humanistic values that respect the dignity of each individual and foster the potential for growth in all of us
- Application of theory and data for continuous improvement
- Leadership in addressing the challenges facing the profession of dental hygiene, education, and our communities

The Study of Dental Hygiene

Dental hygiene is a professional program where students learn to provide educational and clinical services for patients with emphasis on recognition, treatment, and prevention of oral diseases. In addition to performing a variety of preventive and therapeutic functions, the dental hygienist also has a major role in counseling and educating patients, community groups, and other health professionals. The curriculum offers educational, communicative, and clinical skills necessary for the dental hygiene student to work in co- therapy with the dental team.

Facilities

The program is located on the Stockton campus in a state of the art facility shared with Pharmacy, Physical Therapy and Speech-Language Pathology Programs as well as the Arthur A. Dugoni School of Dentistry's newest Advanced Education in General Dentistry (AEGD) program. The AEGD clinic, staffed by dental residents and faculty, provides outstanding patient co-therapy experiences for both dental hygiene students and dental students on extramural rotation from the San Francisco campus. The University of the Pacific's Health Sciences Learning Center and Clinics offers students an outstanding learning environment and the community an excellent resource for dental services.

Admission Requirements

Admission to the Dental Hygiene Program is competitive. Students may apply either as freshman or transfer students. After review of the completed application, the Office of Admissions will invite qualified candidates to participate in interviews on campus. In addition to a personal interview, applicants are invited to participate in an orientation seminar and financial aid seminar, meet informally with current students, and tour the campus. Admission will be based on the combination of application information and interview.

Freshman Application

The Freshman application deadline is November 15 for the following fall semester.

Recommended High School Preparation: Completion of high school or its equivalent is mandatory. Pass/Fail evaluations in required subjects are acceptable only when accompanied by a narrative transcript provided by the awarding school.

Required courses: Students applying to dental hygiene must take two years of high school algebra. High school physics is recommended. Applicants are also expected to complete a college preparatory program. Preparatory courses are those in the fields of English, social sciences, foreign languages, laboratory sciences, and mathematics.

It is strongly recommended, to all students applying to the University, that the following be included in the secondary school program: four years of English; at least three years of mathematics, including geometry and intermediate algebra; at least two years of a laboratory science in at least two disciplines (biology, chemistry, or physics); at least two years of the same foreign language; three years of social science; one year of fine or performing arts; and additional academic courses - all aiming at improving analytical abilities, promoting artistic development, and strengthening written skills.

Recommended Courses:

English	4 years
Fine Arts/Performing Arts	1 years
Foreign Language (one)	2 years
Social Science 2 years	
Mathematics* 4 years	
Laboratory sciences**	3 years
Academic Electives***	1 years

**Suggested math sequence for science majors (including dental hygiene): algebra, geometry, algebra II, trigonometry or calculus.*

***Physics biology and chemistry are recommended for dental hygiene applicants.*

****Academic elective courses should be advanced foreign languages, mathematics, laboratory science or other solid college preparatory courses.*

GPA: Special emphasis is placed on coursework selected, the grades achieved in those courses, and the cumulative grade point average.

SAT-1 Test or ACT Exams: The Admissions Committee will review the results of the student's SAT or ACT scores.

Essay: A one to two page essay is required of all University applicants.

Recommendation: One academic recommendation on official letterhead is required. It should be from a science instructor, counselor or adviser. Additional letters of evaluation from health care professionals are recommended

Extracurricular activities: Other factors considered (but not required) in selecting the class include: work experience in the dental field, community service and involvement, and volunteer activities.

Transfer Student Application:

Transfer application deadline for entry into the program is September 1 for the following spring semester.

Transfer students will be asked to meet the requirements listed above, with the following exceptions: SAT or ACT exam scores will NOT be required.

Sixty-three units of lower division college courses that are UOP transferable and include the following prerequisites or equivalents are required:

General Biology and lab (one year or 3 quarters) must articulate to UOP BIOL 51/ 61

General Chemistry and lab (one year or 3 quarters) must articulate to UOP CHEM 25/ 27

Microbiology (minimum of one 3 unit semester course or one 4 unit quarter class) must articulate to UOP BIOL 145

General (Introductory) Psychology (minimum of one 3 unit semester course or one 4 unit quarter class) must articulate to UOP PSYC 31

Introductory Sociology (minimum of one 3 unit semester course or one 4 unit quarter class) must articulate to UOP SOCI 51

Mathematics (statistics) (minimum of one 3 unit semester course or one 4 unit quarter class) must articulate to UOP MATH 37

English Composition (minimum of one 3 unit semester course or one 4 unit quarter class) must articulate to UOP ENGL 25

Communication (Speech) (minimum of one 3 unit semester course or one 4 unit quarter class) must articulate to UOP COMM 27

Anatomy and Physiology (one semester or 2 quarters) must articulate to UOP BIOL 111

Organic Chemistry (one semester or 1 quarter/ no lab) must articulate to UOP CHEM 33

Health Requirements:

Prior to entry into the professional portion of the program (final 4 semesters), health requirements must be met and documentation submitted to as follow

- Medical Examination: Following acceptance for admission, submit the University's "Entrance History and Physical," form signed by a physician confirming that a medical examination was completed within 3 months of the date of matriculation into the professional portion of the Dental Hygiene program.
- Measles, Rubella (German Measles), and Mumps: Provide *documentation of presence of positive titres.* Documented vaccination with live attenuated measles and rubella virus is adequate. A history of measles and rubella as childhood diseases is not sufficient.
- Tuberculosis: Submit the report of a *Mantoux tuberculosis skin test* done within 3 months of entering professional program. With a history of tuberculosis OR a positive skin test, submit the physician's report of a chest X-ray taken within the year prior to matriculation. Chest X-rays may be required at intervals, and suppressive medication may be recommended.
- Hepatitis B: Every student is required to submit documented *proof of presence of antibodies to the Hepatitis B virus* or to complete the Hepatitis B vaccination series. It is recommended that this be done prior to matriculation; in all cases, however, it must be done before a student is allowed to treat patients. If a student does not have documented proof of having antibodies to this virus, the vaccination series is available at the school for a fee.
- Tetanus Diphtheria Vaccination within past 10 years
- Varivax (Chicken Pox) Provide documentation of 2 dose vaccination series or presence of titer if history of having chicken pox.

Inquiries about health requirements and supporting documentation are handled through the University's Cowell Wellness Center (209) 946-2315.

Program Description

The B.S. degree in Dental Hygiene is a professional program presented in an accelerated year-round format of seven semesters and a summer session.

Presented in the first half of the program are general education courses providing a strong science background, and a broad base in the humanities designed to provide prerequisite strengths for dental hygiene science and clinical practice. Students will undertake this portion of their course work, which is provided by the College of the Pacific, with the general undergraduate student population on the main campus. The student must maintain a 2.5 GPA or better in lower division coursework to proceed into the professional portion of the program.

The professional portion of the program is a highly structured four semesters of upper division coursework including both didactic training and clinical experience. This portion of the program is presented by the School of Dentistry on the Stockton campus. Accreditation requirements and curriculum changes may necessitate changes in the following requirements. Students will be advised of curriculum revisions, if any, at the beginning of the professional portion of the program.

Dental Hygiene Licensure

Completion of the program enables graduates to take national and state licensure examinations. For California examination information contact: California Dental Board of California 1432 Howe Ave., Ste. 85-B Sacramento, CA 95825, www.dbc.ca.gov, (916) 263-2300.

Degree Requirements

General Education Curriculum

First Semester (17 units)

Biology 51 (General Education III requirement fulfilled)	(4 units)
Chemistry 25 (General Education III requirement fulfilled)	(5 units)
Psychology 31 - Intro (General Education I requirement fulfilled)	(4 units)
Pacific Seminar I	(4 units)

Second Semester (16 units)
Biology 61 (4 units)
Chemistry 27 (5 units)
Sociology 51 (Intro) (4 units)
(General Education I requirement fulfilled)
Pacific Seminar II (3 units)

Summer Session (15 units)
General Education: (4 units)
(Gen. Ed. II, section b or c, requirement fulfilled)
Elective (4 units)
Mathematics 37 - Statistics (4 units)
Organic Chemistry Chem 33 - without lab (3 units)

Third Semester (15 units)
English 25 (Intro) (4 units)
(Gen. Ed. II requirement fulfilled)
Communications 27 (Public Speaking) (3 units)
Biology 145 - Microbiology (4 units)
Biology 111 - Anatomy and Physiology (4 units)
Total Units: 63 units

Dental Hygiene Curriculum

Fourth Semester (14 units)
Head & Neck Anatomy
Dental Anatomy
Oral Radiology
Oral Histology/Embryology
Dental Hygiene Practice
Pre-Clinical Dental Hygiene
Dental Health Education

Fifth Semester (16 units)
Medical & Dental Emergencies (Incl. BLS) I
Pharmacology
Dental Hygiene Clinic I
General & Oral Pathology
Periodontics I
Pain Management

Sixth Semester (16 units)
Medical & Dental Emergencies II
Dental Hygiene Clinic II
Periodontics II
Community Oral Health
Patient Management/ Special Needs
Pacific Seminar III

Seventh Semester (17 units)
Biochemistry & Nutrition
Dental Materials
Dental Hygiene Clinic III
Ethics & Jurisprudence
Senior Project

Total: 63 units
Major Total: 126 units

Course Offerings

DHYG 110. Oral Health Education (1)
Students are introduced to principles and practices of prevention and control of oral disease. Oral health promotion, to include plaque control, patient education, and behavior modification are stressed.

DHYG 111. Head And Neck Anatomy (2)
This course is designed to expand student knowledge of the anatomical structures of the head and neck. Students examine clinical correlations relevant for dental professionals.

DHYG 112. Dental Anatomy (1)
The study of dental terminology, tooth morphology and the relationship of teeth in form and function to each other and to supporting structures. Root morphology, hard tissue charting, occlusion and dental anomalies correlated to basic clinical applications.

DHYG 113. Oral Radiology (2)
This course is designed to examine the fundamentals of dental radiography to include history, principles, legal considerations, and radiation safety. Clinical applications including exposure technique, film processing, preparing and interpreting dental roentgenograms, and correction of technical error are performed.

DHYG 114. Oral Histology and Embryology (2)
Lectures, clinical examples, classroom discussions and slide materials designed to help student develop knowledge of oral histology and embryology, to be applied to the clinical practice of dental hygiene.

DHYG 115. Dental Hygiene Practice (3)
An introduction to the contemporary role of the dental hygienist, the evolving profession of dental hygiene, procedures and techniques utilized in the dental hygiene process of care. Emphasis is placed on development of a comprehensive medical and dental database and history, diagnostic tools, oral cancer examination, clinical systems and protocol, infection control, basic instrumentation and polishing, and patient communication.

DHYG 116. Pre-Clinical Dental Hygiene (3)
Provides the opportunity for application of materials presented concurrently in DHYG 115.

DHYG 120. Periodontics I (2)
Introduction to periodontology. Emphasis is placed on etiology, histology and epidemiology, diagnosis and classification of periodontal disease. Principles of periodontal disease preventive therapy, treatment planning, reassessment and supportive periodontal therapy will be introduced. Students learn under which circumstances referral to periodontal specialty practices is appropriate.

DHYG 121. Pharmacology (3)
This course is designed to classify and study therapeutic agents commonly encountered and/or utilized in the practice of dentistry. Students learn chemical and physical properties, therapeutic effect, methods of administration, dosage, contraindications and side effects of these agents.

DHYG 122. Oral Pathology (2)
Study of etiology, pathogenesis, clinical and histiogenic features oral diseases. Recognition of basic tissue reaction and lesions that occur in the mouth, jaws, and neck formulation of differential diagnosis of lesions seen in the practice of dentistry.

DHYG 123. Medical and Dental Emergencies I (1)
Students learn basic methods of medical and dental emergency prevention and management in the dental office. Emphasis on recognizing signs, symptoms, and treatment of the more common emergencies which may occur in the dental setting. Drugs and equipment utilized in the management of medical emergencies are outlined. Students are trained in Basic Life Support Systems (BLS).

DHYG 124. Pain Management (2)
Comprehensive information and skills for providing comfortable dental treatment. Local anesthesia and nitrous oxide-oxygen administration are stressed.

DHYG 125/126. Dental Hygiene Clinic I (2) (4)
This lecture/lab/clinic course is designed to provide students beginning clinical experience in the treatment of child, adolescent, adult, and geriatric patients. Promotion of oral health and wellness is stressed through lecture and clinical experiences in: patient assessment; dental hygiene care treatment planning; case presentation and implementation; and treatment outcomes evaluation. Principles, rational and application of ultrasonic scaling are introduced. Cariology considerations and additional fluoride delivery options are discussed. Students integrate knowledge and skills developed in DHYG110 DHYG 115, DHYG 116, DHYG 120, and DHYG 124.

DHYG 130. Periodontics II (2)
This course is designed to enable students to enhance and develop knowledge and skills applicable in the treatment of patients with advanced periodontal disease. Concepts and treatment techniques of surgical and non-surgical periodontal therapy are stressed.

DHYG 131. Community Oral Health (2)
This course is designed to enable students to examine the principles and practices of oral health in diverse public health settings. Emphasis is placed on the role of the dental

hygienist as an innovator and educator in community dental health programs with consideration to needs assessment, research study utilization, biostatistic utilization, program planning, and results evaluation. The social and professional responsibility of the dental professional with regard to public promotion of oral health and access to care is examined.

DHYG 132. Patient Management/ Special Needs (2)
This course is designed to enlighten the viewer to the world of people with special needs, the issues they face, the programs in place to help them, and dental treatment modalities.

DHYG 133. Medical and Dental Emergencies (1)
This course provides a continuation of DH 123, Medical and Dental Emergencies I. Students review methods of medical and dental emergency prevention and management in the dental office. Emphasis on recognizing signs, symptoms, and treatment of the more common emergencies which may occur in the dental setting. Drugs and equipment utilized in the management of medical emergencies are outlined.

DHYG 134. Senior Project I (3)
This course is designed to provide students the opportunity for supervised practical application of previously studied theory in a variety of settings. Through outside program affiliation, faculty assistance, and mentorship, students choose a specific area of hygiene practice to explore in depth.

DH135/136. Dental Hygiene Clinic II (1) (5)
This lecture/ lab/ clinic course is designed to enable students to expand their experience in treatment of the periodontally involved patient. Students refine techniques for treatment planning, root planing, and non-surgical periodontal treatment. Desensitization techniques, pit and fissure sealants, and bleaching are introduced. Utilization of radiographs, local anesthesia and nitrous oxide sedation in patient care is further developed. Students integrate knowledge and skills developed in DH 130, DH 132, and all previous course work to-date.

DHYG 141. Dental Materials (2)
This course is designed to examine structure and physical properties of dental materials utilized in the practice of dental hygiene. Emphasis on concepts and principles of clinical application.

DHYG 142. Ethics and Jurisprudence (2)
Students study ethical theories and issues related to the practice of dental hygiene. A personal philosophy of professional conduct, continuous quality assurance and self-assessment is explored. Fundamental factors necessary to practice within existing regulatory frameworks are stressed.

DHYG 43. Biochemistry and Nutrition (2)
Basic principles of biochemistry and nutrition related to dentistry. Students complete patient dietary surveys and develop correctional nutritional plans.

DHYG 144. Senior Project II (3)
This course is designed to provide students the opportunity for supervised practical application of previously studied theory in a variety of settings. Through outside program affiliation, faculty assistance, and mentorship, students choose a specific area of hygiene practice to explore in depth.

DHYG 145/146. Dental Hygiene Clinic III (1) (7)
This course is designed to provide advanced clinical experience in performing treatment for a variety of clinical patient cases. Students use local anesthesia, nitrous oxide, oral antimicrobials, and nutritional analysis. State Board Examination requirements and protocol, are reviewed and simulated through practical exercises. Identification of an appropriate patient for licensure examination is made. Students integrate knowledge and skills developed in all previous course work to-date.

Dental Hygiene Faculty

Leigh C. Anderson, Professor of Anatomy, BS, University of Minnesota, 1971, DDS, University of Minnesota, 1977, PhD, University of Minnesota, 1979.

Shelly Azevedo, Clinical Instructor, Department of Peridontology, BS, Loma Linda University, 1984.

Mark Buchman, Clinical Instructor, Department of Periodontology, DDS, University of California San Francisco, 1981, Indiana University, 1993.

Dorothy T. Burk, Associate Professor of Anatomy, BA, University of New Hampshire, 1972, PhD, University of Michigan, 1976, MA, University of the Pacific, 1994.

William M. Carpenter, Professor of Pathology and Medicine, DDS, University of Pittsburgh, 1964, MS George Washington University, 1973.

Howard H. Chi, Assistant Professor of Dental Practice, BA, University of the Pacific, 1985, DMD, Temple University, 1989, MA, University of the Pacific, 2000.

Cathleen Dornbush, Clinical Instructor, Department of Periodontology, BS, University of Southern California, 1977, RDHAP, University of the Pacific, 2004.

James S. Dower, Clinical Associate Professor of Restorative Dentistry, AA, College of Marin, 1967, BS, California State University, Hayward, 1973, DDS, University of the Pacific, 1976, MA University of the Pacific, 1994.

Elena Francisco, Clinical Instructor, Department of Periodontology, BS, Loma Linda University, 1976, RDHAP, University of the Pacific, 2005.

Lisa A. Harpenau, Associate Professor of Peridontics, BS, Loyola Marymount University, 1986, DDS, University of California, San Francisco, 1990, DDS, University of California, San Francisco, 1990, BS, University of California, San Francisco, 1990, MS, Baylor University , 1992, MBA, University of the Pacific, 1999.

Deborah Horlak, Assistant Professor, Department of Peridontology, BA, Ohio State University, 1973; MA, California State University, Fresno, CA, 2003.

Tanya Jones, Clinical Instructor, Department of Periodontology, BA, Brigham Young University, 1982, RDHAP, University of the Pacific, 2004.

Joseph V. Levy, Professor of Physiology, BA, Stanford University, 1950, MS, University of California, Los Angeles, 1959, PhD, University of Washington, 1959.

William P. Lundergan, Professor of Periodontics, AA, College of the Sequoias, 1970, BS, University of California, Irvine, 1973, DDS, University of the Pacific, 1981, MA, University of the Pacific, 1994.

Cindy Lyon, Assistant Professor, Department of Periodontology, BS, University of Southern California, 1978, DDS, University of the Pacific, 1986.

Phillip W. Merrell, Associate Professor of Pathology and Medicine, BS, Indiana University, 1967, DDS, Indiana University, 1971.

John Muller, Clinical Instructor, Department of Periodontology, BS, University of San Francisco, 1978, DDS, University of the Pacific, 1985.

Bruce Peltier, Professor of Dental Practice, BS, United States Military Academy, West Point, 1970, Med, Wayne State University, West Berlin, 1974, PhD, Wayne State University, Detroit, 1979, MBA, University of the Pacific, 1999.

Thomas Schiff, Professor of Radiology, DMD, University of Alabama, 1961.

Liz Soderstrom, Clinical Instructor, Department of Periodontology, BSDH, University of California San Francisco, San Francisco, CA, MA Education, University of the Pacific, San Francisco, CA, 1994.

Paula Watson, Clinical Instructor, Department of Periodontology, AA, Foothill College, 1990, BS, Chapman University, 2001, MS, University of New Haven, 2004, RDHAP, West Los Angeles College, 2003.

mcgeorge school of law

Dean
Elizabeth Rindskopf Parker

School Telephone
916.739.7191

Website
www.mcgeorge.edu

A professional school offering a Juris Doctor degree in a full-time or part-time program, and a Master of Laws degrees in Government and Public Policy, Transnational Business Practice, and International Water Resources.

Founded in 1924, the University of the Pacific McGeorge School of Law has grown into one of the leading law schools in the country. Its 13-acre campus in Sacramento is a dynamic center for legal education, research and training in the skills of legal advocacy.

Approximately 1,100 students are enrolled in the school's full-time day and part-time evening divisions as well as its graduate law program. More than 100 undergraduate institutions are represented in a typical entering class.

The law school is less than five miles from the State Capitol and surrounding federal, state, and local offices and courts. Students are thus able to observe law- and decision-making processes at their sources and there are many opportunities to learn from supervised placements in state, federal and local agencies.

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, 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 features some of the finest legal education facilities in the nation. It includes on-campus housing, dining facilities and a recreational center with swimming pool, in addition to modern classrooms, one of the largest private law libraries in California, and a courtroom. Facilities are accessible to the handicapped.

The Gordon D. Schaber Law Library is a comprehensive legal research facility of nearly 500,000 volumes, and extensive electronic legal databases. Librarians, experts in legal research methodology, are available to assist patrons in using the library's print and electronic resources. The library makes a variety of study accommodations available to McGeorge students, including individual carrels, study group rooms, and videotape viewing rooms, all equipped with wireless technology for laptop access. The Information Commons, a computer learning and research center, contains computers available for use by McGeorge students for computerized legal research, Internet search, word processing and e-mail.

The law school's Center for Advocacy and Dispute Resolution 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's main purpose is to serve as a classroom for training in the skills of trial advocacy.

Admission Requirements

The school of law will consider applications for admission from individuals who have completed, or will have completed by the time of enrollment, a bachelor's degree from an accredited college or university. Pacific McGeorge's 3+3 Program, described later, also allows gifted undergraduate students at the University of the Pacific to begin work on their law degree after their junior year on the Stockton campus.

Application materials include:

1. Completed application form, available from the Admissions Office;
2. Law School Admission Test results;
3. Law School Data Assembly Service (LSDAS) report;
4. Personal Statement;
5. Nonrefundable application fee.

Review of application files begins early in each calendar year for the entering fall semester class. The number of seats available for each entering class is limited so early completion of application materials by May 1 is advised.

In reviewing applicants, preference is given to University of the Pacific graduates when compared to equally qualified graduates of other schools.

To receive the law school's Admissions Bulletin with application forms, write to:

Admissions Office
University of the Pacific
McGeorge School of Law
3200 Fifth Avenue
Sacramento, CA 95817
or e-mail: admissionsmcgeorge@uop.edu
or go online at www.mcgeorge.edu

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 in the Day Division requires three years of law study, while the part-time Evening Division program requires four years. Evening Division students may earn the J.D. degree in three and one-half years by satisfying graduation requirements through enrollment in an accelerated evening program. The required first-year curriculum for full-time students includes Criminal Law, Contracts, Torts, Property, Legal Process and Civil Procedure. In advanced years, students take a combination of required and elective courses. The current program contains over 100 electives in the areas of business, commerce, labor law, environmental law, child and elder law, property and land use planning, personal relationships, torts, criminal justice, taxation, public and administrative law, comparative and international law, clinical and practice-oriented electives, and special programs and activities.

Joint degree programs are available with limited cross-credit for acquisition of the J.D./M.B.A. (Master of Business Administration) through the University's School of Business or through CSU Sacramento's School of Business. A J.D./M.P.P.A. (Master of Public Policy and Administration) is also available in cooperation with CSUS.

The faculty is composed of 45 full-time and 50 adjunct instructors. The law school has a tradition of close and personal relationships among the faculty, administrators and students which helps to create an environment in which professional ideals are developed and maximum learning takes place.

University of the Pacific McGeorge 3+3 Program

University of the Pacific undergraduates may plan a course of study which leads to enrollment at the University's McGeorge School of Law during the fourth undergraduate year. Both a bachelor's and a J.D. degree may be earned in a total of six years rather than the usual seven. To be eligible for admission to McGeorge under the 3+3 program, undergraduates must meet grade point average, course, and unit requirements prior to enrolling at the law school as well as have a minimum LSAT score within the 50th percentile range. Further information is available from the Dean of Admissions or the Pre-Law Adviser on the Stockton campus and the Office of Admissions at McGeorge.

Activities

The McGeorge Law Review, published quarterly, is edited and managed by a board of student editors. The law school's location in the state capital has led to a natural emphasis on California legislation, and a special supplement, "Review of Selected California Legislation" is published annually. *The Pacific McGeorge Global Business & Development Law Journal*, another student-edited 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. Organizations open to all law students include the Governmental Affairs Student Association, Women's Caucus, minority law students' organizations, legal fraternities, Nevada Law Students Association, religiously affiliated organizations, the Environmental Law Forum, the International Law Society, the Public Legal Services Society and other interest and social groups.

McGeorge mock trial, appellate advocacy and international advocacy teams compete with other law schools in regional, national and international competitions. A McGeorge team placed sixth in a prestigious National Tournament of Champions competition in the fall of 2003 while another finished 21st in the world in an international event in Vienna, Austria. In 2006, McGeorge is holding a national Ethics Mock Trial Competition.

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 percent of the graduating class are eligible for election to The Order of the Coif.

Special Curricular Programs

Governmental Affairs Certificate

A unique curriculum leads to a Certificate in Governmental Affairs awarded concurrently with the J.D. degree. Students who complete the program are specially qualified to begin careers in legislative advocacy, administrative adjudication, drafting of legislation, representation of government agencies and officials, representation of persons who regularly deal with government agencies, and related public policy-making positions. Students participate in research studies, symposiums and seminars sponsored by the school's Capital Center for Government Law and Policy, a highly regarded non-partisan source of public policy legal analysis.

Advocacy Certificate

A specialized curriculum leads to a J.D. degree with a Certificate in Advocacy. McGeorge offers students exceptional faculty and facility resources in advocacy. Students receive specialized practical training to prepare for effective careers in litigation, civil, and/or criminal trial and appellate work, or dispute resolution.

International Legal Studies Certificate

A structured curriculum leads to a J.D. degree with a Certificate in International Legal Studies. McGeorge is an internationally recognized leader in this field of legal education and J.D. students have the opportunity to take many courses right alongside foreign attorneys in McGeorge's acclaimed LL.M Transnational Business Practice Program.

Criminal Justice Concentration

A structured curriculum leads to a J.D. degree with a concentration in Criminal Justice. That curriculum offers required and elective courses in the J.D. curriculum that have been selected to provide students seeking a career in criminal law with a firm foundation in that field.

Intellectual Property Law Concentration

A specialized curriculum leads to a J.D. degree with a concentration in Intellectual Property Law. Core courses in this growing legal field include Patent Law, Intellectual Property and Unfair Competition, Copyright Law, and Trademark Law.

Tax Concentration

McGeorge has fashioned one of the strongest tax programs in the West and offers a tailored curriculum leading to a J.D. degree with a Tax Concentration. Law students who seek to enter the tax field will benefit from an outstanding faculty, excellent library resources, and a curriculum that features a broad array of tax and business electives.

Graduate Programs

McGeorge offers a full-time graduate program leading to the Master of Laws (LL.M.) in Transnational Business Practice that combines an on-campus study with class work in Salzburg, Austria, and an externship placement in a foreign law office. The law school also offers an LL.M./J.S.D. program in International Water Resources. McGeorge's new Master of Laws in Government and Public Policy offers a one- or two-year program designed for young attorneys who wish to pursue a career in the public sector.

Clinical Programs

The school of law has been a leader in clinical legal education for more than three decades. The on-campus Community Legal Service Center develops student skills through clinics in administrative adjudication, bankruptcy, business and community development, civil practice, immigration law, parole representation, and crime victims' representation. Students may also earn unit credit 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 Employees Retirement System and the State Board of Equalization. Additionally, students gain clinical experience through judicial internships and placement with other agencies such as the Office of the United States Attorney, the Internal Revenue Service and the San Joaquin County District Attorney.

Capital Center for Government and Policy

Founded in 1995, the Capital Center for Government Law and Policy promotes effective government by providing policy makers with nonpartisan legal analysis of public policy issues. Students have the opportunity to participate in all center activities including drafting of legislation.

Institute on International Legal Studies

Salzburg, Austria has been the site of the Institute on International Legal Studies since 1974. Associate Justice Anthony M. Kennedy of the Supreme Court of the United States teaches annually in a three-week program that is open to American and international law students.

Institute for Administrative Justice

The Institute for Administrative Justice, established in 1972, has gained national recognition as a leading source of expertise on administrative hearing practices. Many public agencies contract with the Institute to provide training and systems management. McGeorge students working for the Institute gain direct experience in the practice of administrative law.

McGeorge School of Law Catalogue

Complete information and a course listing can be found in McGeorge School of Law's 2006/2007 Course Catalogue or on-line at www.mcgeorge.edu.

center for professional and continuing education

Assistant Provost
Barbara Shaw

Department Telephone
209.946.2424

Website
www.pacific.edu/cpce

Contents

The Center for Professional and Continuing Education extends learning opportunities beyond the traditional campus environment, providing a variety of programs designed to meet the educational needs of lifelong learners.

The Center for Professional and Continuing Education provides many opportunities for students to add courses and special topic programs to their experience at University of the Pacific. It is the regional center for extension education, customized workforce training, professional development, Evening Degree program, certificate programs and distance learning. Additionally, the Center offers a variety of programs and services designed to meet the educational needs of the entire family including summer programs for youth and programs for mature adult learners. The Center is designed to help students and residents of San Joaquin County and the surrounding region improve their professional skills, update their knowledge, develop new personal or professional expertise, or participate in vocational or personal development activities.

Evening Degree Program

The Evening Degree Program is designed to meet the needs of adult students who may have started but never finished their college degree.

The Bachelor of Science in Organizational Behavior major is an intensified program designed for students who have already earned between 60 and 70 college units. The evening class format provides adults the opportunity to complete their undergraduate education without interfering with employment. The program focuses on the interdisciplinary study of social interaction and social change, incorporating group dynamics involved in planning for change in the businesses and organizations in the 21st century. The Organizational Behavior major combines courses from various disciplines within the University in order to provide students with the organizational and business skills necessary to work effectively within a variety of organizations. Students complete their degree over an 18-month period by taking two 3-unit classes every eight weeks. If you are interested in the program but have not earned the minimum transfer units, please contact the Adult Student Services Coordinator at (209) 946-2424 for academic advising.

The degree requires 124 units of credit, including completion of the academic major and the University General Education Program, as well as writing and quantitative skills proficiency requirements. Students must earn a minimum C grade point average (2.00) in all college work taken for the degree at Pacific and in courses taken as requirements in the major. A residency requirement stipulates that a minimum of 32 of the last 40 units taken for completion of the undergraduate degree must be taken at 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 colleges and universities while enrolled at Pacific, online and extension courses from other regionally accredited colleges and universities, and military courses evaluated by the American Council on Education

Pacific offers a generous Educational Benefit Program for the Evening Degree student whose employer contributes to meeting his or her tuition expenses. Pacific will match an employer's contribution up to 20% of tuition. This matching grant combined with the employer's contribution can significantly help the employee-student meet his or her educational goals. For more details, please contact the Office of Adult Learners at (209) 946-2424.

The Office of Adult Learners

The Office of Adult Learners serves 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. The Office provides adults re-entering Pacific guidance in planning their academic career in relationship to their individual needs, abilities and goals. Often adults re-entering Pacific have spent several years employed or caring for a family before continuing their education. The Office of Adult Learners begins by providing 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 in cooperation with several University offices. Because adult students often experience difficulty inte-

grating their study schedules with their work and family situations, The Office of Adult Learners staff is prepared to assist students with the transition to the University.

Staff also help students with "mainstreaming" programs, which integrate adult learners with the younger "traditional" students. The majors chosen by adult learners are taken from the traditional curriculum and are taught by highly qualified full-time University faculty members. Adult students work with a faculty adviser to integrate curricular demands with life responsibilities. Currently adult learners are majoring in areas such as Business, Computer Science, Biology, Chemistry, Communication, English, Art, and Education. The University has a policy that allows 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 gender studies.

Adult learners have several opportunities to earn elective unit credit for experiential learning. A fee is charged for the evaluation services and credit awarded. Previous to enrolling at Pacific, students may 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 for a maximum of 20 units. 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.

Summer Session (see right) at Pacific offers special opportunities for adult learners with early morning, daytime and limited evening classes at a reduced tuition. Because the summer contains three separate sessions, students may complete the equivalent to an entire semester's work by taking the maximum number of units allowed in each session.

"Sprinkle a few adult students into your courses – and guess what? Other students begin to connect class discussion to the world outside the University. Why? Because adult students have experience, their comments make the world of ideas real to others. And because the sacrifices necessary in returning to school engender a seriousness about study evident to others, they often make the best possible models regarding what college life is all about."
Professor Roy Childs

Adult learners experience many advantages because Pacific is a resident campus. Students can participate in and benefit from the many activities and events that 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 adult learners.

An important dimension of Pacific is the supportive nature of its student body. Adult learners, in spite of their busy schedules balancing work, family and school, respond to the personal and academic needs of their peers. Frequently, students tutor each other and participate in study groups. The non-traditional student group, Pacific Adult Learners (PALS), develops activities of interest for students and their families. Pacific's Iota Gamma, chapter of the national honor society, Alpha Sigma Lambda, recognizes the academic achievement of adult learners.

Extended Education Credits

Extended Education Credit courses (EXTN) are offered for semester units of undergraduate degree credit. These courses are designed to meet individual's personal and professional learning and training needs. Undergraduate students may take these courses to earn elective units adding to their total unit count required for completion of their academic degree. Students should check with their academic department regarding the total number of extension units counted toward the degree. (The average number of units is eight but vary depending on academic department.)

Summer Sessions

The University offers a varied summer program that allows Pacific students to both fulfill degree requirements and to accelerate their academic progress. It also provides an opportunity for individuals from the community to enroll in one or two University courses without being admitted as regular students. Summer Session courses are divided among two five-week sessions and a four-week session immediately following the end of spring semester. Special programs of varying lengths of time and online courses are also available. Students may register by mail or in person. For information on Summer Sessions and a description of courses to be offered, call the Center for Professional and Continuing Education at (209) 946-2424 or visit the CPCE website at www.pacific.edu/cpce to download the Summer Sessions' catalog.

Community Programs

The Center for Professional and Continuing Education also offers a variety of programs specifically for our surrounding community.

Customized Workforce Training programs are offered to businesses throughout Stockton and the surrounding community to improve workplace skills and address workforce needs. A few examples of customized programs available include, computer training, interpersonal and teamwork skills, professional communication, and customer service skills.

Post-baccalaureate professional development credit courses (9000 series number) are designed for educators and administrators for professional skill and salary enhancement. This graduate level credit is not applicable toward a degree.

Continuing Education Unit (CEU) courses are offered for individuals in professions where the CEU is accepted as the measure of continuing professional development or is required for recertification or relicensure.

Non-credit courses are offered for both **personal and professional enrichment.**

Special Programs and Camps are offered throughout the year to children and youth (Ecamp and Summer Scholars) as well as to mature adult learners (Pacific Experience).

university administration

The Board of Regents

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School and College Deans

- Dean, College of the Pacific ..... Robert Cox, Interim
  - Senior Associate Dean ..... Edith Sparks
  - Assistant Dean ..... Douglas Tedards
- Dean, Conservatory of Music ..... Stephen Anderson
  - Assistant to the Dean ..... David M. Chase
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  - Associate Dean, Special Counsel ..... Glenn A. Fait
  - Assistant Dean for Student Affairs ..... Carin N. Crain
  - Assistant Dean and Director of Admissions ..... Adam Barrett

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Director, Development ..... Berney Neufeld
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Office of Vice President for Business and Finance

Vice President for Business and Finance ..... Patrick D. Cavanaugh
Associate Vice President for Finance, Treasurer ..... Larry G. Brehm
Assistant Vice President for Business Finance/Controller ..... Deborah B. Kallman
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Interim Director, Support Services ..... Scott Heaton
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Director, Pacific One-Card ..... Robert Miller

Office of Vice President for University Advancement

Vice President for University Advancement ..... Ted Leland
Executive Director of Alumni and Relations ..... Bill Coen
Executive Director of Development ..... Beverly Byl
Executive Director of Advancement Services and Research ..... Cathy Dodson
Director of Annual Giving ..... vacant
Director of Corporate and Foundation Relations ..... Paul Lanning
Director of Planned Giving ..... Duane Isetti

Office of Vice President for Student Life

Vice President for Student Life ..... Elizabeth Griego
Associate Vice President for Student Life ..... Rick Morat
Associate Vice President for Student Life ..... Joanna Royce-Davis
Assistant Vice President for Student Life ..... Dan Shipp
Assistant Vice President for Student Life/ Director of Housing ..... Steven Jacobson
Director, Dining Services ..... Sia Mohsenzadegan
Director, Career Resource Center ..... John Carvana
Director, Community Involvement Program and Multicultural Affairs ..... Ines Ruiz-Huston
Director, Student Leadership and Involvement & Conference Services ..... Jason Velo
Director, Student Outreach and Academic Support Services ..... Peggy Rosson
Interim Director, Cowell Wellness Center ..... Karen Peterson
Director of Counseling Center ..... Stacie Turks
Director, SUCCESS ..... Anita Bautista
University Chaplain ..... Joy Preisser
Director, Campus Recreation ..... vacant
Assistant Director for New Student Programs ..... Maisha Beasley
Director, Public Safety ..... Mike Belcher
Director, Judicial Affairs ..... Kerry Krueger Devine

Intercollegiate Athletics Coaches and Administrators

Lynn King, 2000, Director of Athletics, B.A., University of Northern Iowa, 1969; M.A., 1971.

Jodi Baker, 2002, Assistant Director of Athletic Training, B.A., Whitworth College, 1997; M.A., San Diego State University, 2002.

Cynthia Ball, 2002, Assistant Softball Coach, B.A., University of the Pacific, 2002

Guido Baumann, 1998, Director of Tennis/Head Men's Tennis Coach, B.A., Georgia College, 1992.

Jeff Bolognini, 2005, Supervisor of Facilities and Event Management, B.S., Cal State Stanislaus, 2003.

Jim Brink, 2004, Assistant Baseball Coach, B.A., University of the Nevada Reno, 2004.

Don Bryan, 1998, Assistant Director of Athletics, Finance and Compliance, B.A., Linfield, 1962; M.A., Syracuse, 1964; Ph.D., 1974.

Matthew Camino, 2005, Manager of Ticket Operations, B.S., University of the Pacific, 2003.

Brooke Carrigan, 2005, Assistant Women's Basketball Coach, B.A., Colorado Christian University, 2001.

Bob Chiene, 2003, Head Women's Tennis Coach, B.S., University of Oregon, 1976.

Keith Coleman, 1994, Head Women's Soccer Coach, B.S., Cal Poly, San Luis Obispo, 1991.

Michelle Coleman, 1995, Assistant Women's Soccer Coach, B.A., Chico State, 1994.

Dennis Coonan, 2005, Associate Director of Athletic Training, B.S., Iowa State University, 2000, M.S., University of Kansas, 2005.

Jim Dugoni, 1996, Executive Director Pacific Tigers Athletic Association, Assistant Director of Athletics, Development, B.S., University of the Pacific, 1986; M.S., U.S. Sports Academy, 1990; M.A., Stanford University, 1993.

Daniel Fisher, 2004, Assistant Men's Volleyball Coach, B.A., University of the Pacific, 1999.

Jeff Gardner, 2002, Assistant Women's Basketball Coach, B.A., University of the Pacific, 2005.

Debbie Geiman, 1991, Director of Athletic Finance and Business.

Daryn Glasgow, 2004, Assistant Men's and Women's Swimming Coach.

Brandon Goethals, 2005, Head Men's Golf Coach, B.A., UNLV, 1992.

Sara Hayes, 2004, Assistant Softball Coach, B.A., Notre Dame, 1995.

Adam Jacobsen, 2003, Assistant Men's Basketball Coach, B.A., University of the Pacific, 1997.

David Johnson, 2001, Assistant Women's Volleyball Coach, B.S., University of California, Davis, 1995.

Brian Kolze, 1992, Head Softball Coach, B.A., Cal. State Northridge, 1984.

Georgia Kovich-Lee, 2003, Director of Athletic Marketing and Promotions, B.A. Brock University, 1994; M.S., Pennsylvania State University, 1995.

Ben Laskey, 2005, Media Relations Assistant, B.A., University of the Pacific, 2003, M.A., University of the Pacific, 2005.

Michael Maroney, 2003, Head Men's Water Polo Coach, B.A. University of the Pacific 1993, M.Ed., Texas A&M University Corpus Christi, 1999.

Linda MacDonald, 1998, Head Field Hockey Coach, B.A., Springfield College, 1973; M.A., University of the Pacific, 1991.

Gregory Meehan, 2005, Head Men's and Women's Swimming Coach, B.A., B.S., Rider University, 2001.

Mike Millerick, 1991, Director of Athletic Media Relations & Broadcasting, B.A., University of the Pacific, 1991.

Melissa Montgomery, 2003 Assistant Soccer Coach, B.A., University of the Pacific, 2001.

Steve Pearse, 2003, Assistant Baseball Coach, B.A., San Francisco Sate University, 1991, M.A., St. Mary's, 1993.

Christopher Pond, 1990, Director of Athletic Training, B.S., Utah State, 1988; M.S., University of Arizona, 1990.

Greg Rhines, 2005, Head Women's Cross Country Coach, B.S., Sacramento State, 1999, M.A., John F. Kennedy University, 2005.

Brent Salazar, 2006, Assistant Director of Athletic Performance, B.S., University of New Mexico, 2003.

Glenn Sisk, 2003, Assistant Director of Athletic Media Relations, B.A. Lake Forest College, 1997; M.A., University of the Pacific, 2003.

Todd Smith, 1998, Director of Athletic Performance, B.S., University of Miami (Ohio), 1995.

Cindy Spiro, 1994, Major Gift Officer/Senior Associate Director of Athletics, Operations, B.A., University of the Pacific, 1976; M.A., University of the Pacific, 1984.

Ed Sprague Jr., 2003, Head Baseball Coach, Stanford University.

Bob Thomason, 1988, Head Men's Basketball Coach, B.A., University of the Pacific; 1971; M.A., 1985.

Veronica Torrez, 2001, Assistant Field Hockey Coach, B.S., Ohio University, 1996.

Holly Trexler, 2005, Assistant Director of Athletics for Student Athlete Services and Compliance, B.A., University of Kansas, 1995, J.D., University of Kansas, 1998, M.S.Ed., University of Kansas, 1999.

Ron Verlin, 1994, Associate Head Men's Basketball Coach, B.S., Cal State University, Sacramento, 1990.

Charlie Wade, 2006, Head Women's Volleyball Coach, B.S., California State University Fullerton, 1991.

Karen Weitz, 2005, Interim Head Women's Basketball Coach, B.S., UNLV, 1991, M.Ed., Nova Southeastern University, 1995.

Aaron Woliczko, 2000, Assistant Men's Basketball Coach, B.A., University of the Pacific, 1997.

Joe Wortmann, 1991, Head Men's Volleyball Coach, B.A., Loyola Marymount, 1978.

Curtis Zeilenga, 2005, Assistant Athletic Trainer, B.S., Azusa Pacific University, 2003, M.A., Sonoma State, 2006.

Library Faculty

A. Craig Hawbaker, 1991, Professor, Reference Librarian, B.S., Drake University, 1973; M.S.L., Western Michigan University, 1975.

Cynthia C. Hsieh, 2003, Assistant Professor, Technical Services Librarian, B.A., National Taiwan University, 1984; M.L.S., University of Wisconsin-Madison, 1985.

Robin L. Imhof, 2002, Assistant Professor, Reference Librarian, B.A., UC, Los Angeles, 1987; M.L.I.S., San Jose State University, 1995; M.A., San Francisco State University, 2000.

Lorrie Knight, 1996, Associate Professor, Instruction Librarian, B.A., University of Texas, Austin, 1975; M.L.I.S., Louisiana State University, 1989.

Janice M. Krueger, 2000, Assistant Professor, Electronic Resources and Serials Librarian, B.S., Duquesne University, 1977; M.S., Drexel University, 1988; Ed.D., University of the Pacific, 2005.

Scott A. Minor, 2003, Assistant Professor, Sciences Librarian, B.S., Eastern Illinois University, 1998; M.L.I.S., University of Illinois at Urbana-Champaign, 2002.

Jean Purnell, 1984, Associate Professor, Assistant Provost, Dean of the Library, B.A., Wake Forest University, 1976; M.A. in Musicology, University of North Carolina at Chapel Hill, 1980; M.S.L.S., University of North Carolina at Chapel Hill, 1980; Ed.D., University of the Pacific, 2002.

Rhonelle R. Runner, 2002, Assistant Professor, Humanities/Music Reference Librarian, B.A., University of the Pacific, 1991; B.M., University of the Pacific, 1992; M.L.I.S., UC, Los Angeles, 1997; M.A., UC Riverside, 1995.

Shan C. Sutton, 2004, Assistant Professor, Head of Special Collections, B.S., Wright State University, 1990; M.H., Wright Sate University, 1993; M.A. in Library Science, University of Arizona, 1996.

Emeritus Faculty/Staff

Glen A. Albaugh, 1971, Professor of Sport Sciences, Emeritus, 1999.

Steven C. Anderson, 1970, Professor of Biological Sciences, Emeritus, 1997.

Judith K. Andrews, 1966, Associate Professor, University Libraries, Emerita, 2001.

Michael H. Ballott, 1971, Professor of Business, Emeritus, 2005.

David P. Baral, 1981, Professor of Education, Emeritus, 1999.

Roger Barnett, 1965, Professor of Geography, Emeritus, 1999.

David F. Besch, 1985, Assistant Professor of Electrical and Computer Engineering, Emeritus, 2002.

Stanworth R. Beckler, 1955, Professor of Music Theory, Emeritus, 1990.

Robert W. Blaney, 1966, Professor of Religious Studies, Emeritus, 1996.

John W. Blasingame, 1982, Associate Professor of Business, Emeritus, 1999.

George P. Blum, 1962, Professor of History, Emeritus, 1999.

Jerry B. Briscoe, 1964, Professor of Political Science, Emeritus, 1994.

Gwenneth L. Browne, 1968, Professor of Philosophy, Emerita, 1997.

George L. Buckbee, 1973, Professor of Music, Emeritus, 1996.

Erwin C. Burmeister, 1962, Professor, University Libraries, Emeritus, 1994.

Gaylon L. Caldwell, 1970, Dean of Elbert Covell College and Professor of Political Science, Emeritus, 1982.

Wallace F. Caldwell, 1970, Professor of Political Science, Emeritus, 1994.

John P. Carew, 1967, Professor of Economics, Emeritus, 1995.

David J. Carson, 1964, Professor of Biological Sciences, Emeritus, 1983.

Kishori Chaubal, 1972, Associate Professor of Biological Sciences, Emerita, 1999.

Madhukar G. Chaubal, 1964, Professor of Medicinal Chemistry, Emeritus, 1999.

Elmer U. Clawson, 1974, Professor of Education, Emeritus, 1995.

Charles Clerc, 1963, Professor of English, Emeritus, 1990.

Robert S. Cox, 1971, Professor of English, Emeritus, 2005.

William Darling, 1966, Associate Professor of Business and Public Administration, Emeritus, 1990.

Mamie Darlington, 1992, Associate Professor of Sociology, Emerita, 2005.

Robert W. Dash, 1964, Professor of Modern Language and Literature, Emeritus, 2001.

Gilbert L. Dellinger, 1973, Professor of Art, Emeritus, 2000.

Roland B. di Franco, 1972, Professor of Mathematics, Emeritus, 2001.

Clifford L. Dochterman, 1972, Vice President, Emeritus, 1990.

Richard P. Dodge, 1964, Professor of Chemistry, Emeritus, 1994.

William C. Dominik, 1967, Professor of Music, Emeritus, 1995.

I. Dale Dunmire, 1973, Professor of Electrical and Computer Engineering, Emeritus, 1990.

Mark E. Ealey, 1969, Professor of Black Studies, Emeritus, 1990.

Alberto Eraso, 1964, Associate Professor of Modern Language and Literature, Emeritus, 1990.

Erling A. Erickson, 1969, Professor of History, Emeritus, 1997.

H. Richard Etlinger, 1982, Professor of Music Management/Business, Emeritus, 2000.

Lee C. Fennell, 1968, Professor of Political Science, Associate Provost and University Registrar, Emeritus, 1999.

U. Wolfgang Fetsch, 1967, Professor of Piano, Emeritus, 1991.

Anne Funkhouser, 1966, Professor of Biological Sciences, Emerita, 1991.

Joan E. Coulter Garn, 1973, Assistant Professor of Music, Emerita, 1997.

Fay Goleman, 1937, Professor of Education and Sociology, Emerita, 1976.

Alex T. Granik, 1982, Associate Professor of Physics, Emeritus, 2005.

Paul H. Gross, 1966, Professor of Chemistry, Emeritus, 1999.

Donald H. Grubbs, 1963, Professor of History, Emeritus, 1998.

Fay B. Haisley, 1984, Dean, Gladys L. Benerd School of Education, and Professor of Education, Emerita, 1999.

Robert E. Hamernik, 1962, Professor of Civil Engineering, Emeritus, 1998.

George T. Hankins, 1980, Professor of Electrical and Computer Engineering, Emeritus, 1991.

Halvor P. Hanson, 1959, Professor of Communication, Emeritus, 1990.

Lois N. Harrison, 1985, Professor of Music Education, Emerita, 1997.

Paul J. Hauben, 1969, Professor of History, Emeritus, 1994.

Floyd F. Helton, 1959, Professor of Mathematics, Emeritus, 1980.

J. Carolyn Hultgren, 1989, Assistant Professor of Physical Therapy, Emerita, 2002.

Leonard A. Humphreys, 1970, Professor of History, Emeritus, 1991.

Alice S. Hunter, 1970, Professor of Biological Sciences, Emerita, 1995.

Mari G. Irvin, 1981, Professor of Education, Emerita, 2000.

Sy M. Kahn, 1963, Professor of Drama, Emeritus, 1986.

Robert T. Knighton, 1967, Professor of English, Emeritus, 2001.

J. Curtis Kramer, 1975, Professor of Geosciences, Emeritus, 2005.

Janine Kreiter, 1959, Professor of Modern Language and Literature, Emerita, 1994.

Robert A. Kreiter, 1960, Professor of Modern Language and Literature, Emeritus, 1994.

Charles DeWolf LaMond, 1948, Associate Professor of Piano and Theory, Emeritus, 1982.

Margaret A. Langer, 1981, Associate Professor of Education, Emerita, 2002.

Neil L. Lark, 1962, Professor of Physics, Emeritus, 1999.

Estelle P. Lau, 1977, Professor of Education, Emerita, 2000.

Ira C. Lehn, 1968, Professor of Violoncello, Emeritus, 1991.

Louis Leiter, 1963, Professor of English, Emeritus, 1990.

Ronald H. Limbaugh, 1966, Professor of History, Emeritus, 2000.

B. Jean Longmire, 1976, Professor of Education, Emerita, 2005.

Armand P. Maffia, 1971, Associate Professor of Education, Emeritus, 1983.

Douglas W. Matheson, 1968, Professor of Psychology, Emeritus, 2004.

O. Boyd Mathias, 1965, Associate Professor of Mathematics, Emeritus, 1991.

Elizabeth Matson, 1945, Professor of Physical Education and Recreation, Emerita, 1981.

Alice Jean Matuszak, 1963, Professor of Medicinal Chemistry, Emerita, 2000.

Charles A. Matuszak, 1963, Professor of Chemistry, Emeritus, 2000.

Hugh J. McBride, 1975, Professor of Education, Emeritus, 1996.

Maurice L. McCullen, 1970, Professor of English, Emeritus. 2002.

Dale W. McNeal, 1969, Professor of Biological Sciences, Emeritus, 2002.

E. Leslie Medford, Jr., 1962, Dean of Admissions, Emeritus, 1988.

Lawrence Meredith, 1966, Professor of Religious Studies, Emeritus, 1999.

Doris C. Meyer, 1956, Professor of Physical Education, Emerita, 1990.

Sally M. Miller, 1967, Professor of History, Emerita, 1999.

James P. Morgali, 1961, Professor of Civil Engineering, Emeritus, 1999.

Robert D. Morrow, 1975, Professor of Education, Emeritus, 2002.

Roger C. Mueller, 1969, Professor of English, Emeritus, 1997.

Fuad M. Nahhas, 1964, Professor of Biological Sciences, Emeritus, 2000.

George L. Nemeth, 1970, Professor of Horn and Music History, Emeritus, 2005.

Thuan V. Nguyen, 1969, Professor of Engineering, Emeritus, 1998.

Carl E. Nosse, 1980, Professor of Theory-Composition, Dean, Conservatory of Music, Emeritus, 1999.

Walter Nyberg, 1962, Professor of Religious Studies, Emeritus, 1990.

J. Ronald Pecchenino, 1970, Professor of Art, Emeritus, 1996.

Richard L. Perry, 1961, Professor of Physics, Emeritus, 1997.

Darrell C. Persels, 1965, Professor of Drama, Emeritus, 1995.

Sandra L. Persels, 1976, Professor of Drama, Emerita, 1996.

Larry L. Pippin, 1965, Professor of Political Science and Geography, Emeritus, 1994.

Edward T. Pohlman, 1961, Professor of Education, Emeritus, 1995.

Max Polinsky, 1961, Professor of Pharmaceutics, Emeritus, 1981.

John Calvin Potts, 1965, Professor of Chemistry, Emeritus, 1975.

Virginia L. Puich, 1969, Associate Professor of Communicative Disorders, Emerita, 1997.

Herbert R. Reinelt, 1962, Professor of Philosophy, Emeritus, 1999.

Claude D. Rohwer, 1964, Professor of Law, Emeritus, 2005.

Howell L. Runion, 1969, Professor of Physiology and Pharmacology, Emeritus, 2003.

Darwin Sarnoff, 1972, Professor of Pharmacy Practice, Emeritus, 2004.

Ralph L. Saroyan, 1970, Director of Pharmacy Pre-Health Programs, Emeritus, 2002.

Barbara Sayles, 1962, Associate Professor of Modern Language and Literature, Emerita, 2002.

Gilbert W. Schedler, 1967, Professor of English and Religious Studies, Emeritus, 2004.

George W. Schroeder, 1981, Professor of Electrical Engineering, Emeritus, 2005.

Charles Schilling, 1956, Professor of Music, Emeritus, 1985.

John V. Schippers, 1962, Professor of Education, Emeritus, 1990.

John E. Seaman, 1969, Professor of English, Emeritus, 1999.

Clark Shimeall, Assistant Professor of Geology, Emeritus, 1986.

Donald Y. Shirachi, 1971, Professor of Physiology and Pharmacology, Emeritus, 1994.

John D. Smith, 1970, Professor of English, Emeritus, 1999.

Reuben W. Smith III, 1972, Dean of the Graduate School and Professor of History, Emeritus, 1994.

Robert J. Smutny, 1955, Professor of Classics, Emeritus, 1987.

Donald L. Sorby, 1984, Dean of the School of Pharmacy, Emeritus, 1995.

Elizabeth Spelts, 1948, Professor of Voice, Emerita, 1985.

Evelyn Spring, 1968, Associate Professor of Physical Education and Recreation, Emerita, 1991.

S. Thomas Stubbs, 1963, Associate Professor of Sport Sciences, Emeritus, 1999.

J. Connor Sutton, 1963, Associate Professor of Sport Sciences, Emeritus, 1999.

Arthur W. Swann, 1970, Associate Professor University Libraries, Emeritus, 1982.

Ted T. Takaya, 1979, Professor of Modern Language and Literature, Emeritus, 1996.

Paul A. Tatsch, 1980, Associate Professor of Business, Emeritus, 2005.

B. Jan Timmons, 1971, Assistant Dean of the College of the Pacific and Professor of Communication, Emerita, 2000.

Roy J. Timmons, 1970, Professor of Communicative Disorders, Emeritus, 1990.

Richard H. Turpin, 1984, Professor of Electrical and Computer Engineering, Emeritus, 2005.

Graciela T. de Urteaga, 1963, Professor of Modern Language and Literature, Emerita, 1982.

Warren van Bronkhorst, 1967, Professor of Violin, Emeritus, 1991.

Ray VarnBuhler, 1980, Professor of Art, Emeritus, 1998.

Ravindra C. Vasavada, 1973, Professor of Pharmaceutics, Emeritus, 2000.

William H. Wadman, 1955, Professor of Chemistry, Emeritus, 1988.

Patricia Wagner, 1962, Professor of Sociology, Emerita, 1981.

Coburn C. Ward, 1977, Professor of Mathematics, Emeritus, 2001.

Donald K. Wedegaertner, 1963, Professor of Chemistry, Emeritus, 2004.

Roy A. Whiteker, 1976, Dean of the College of the Pacific, Emeritus, 1989, Professor of Chemistry, Emeritus, 1992.

William P. Whitesides, 1978, Professor of Voice, Emeritus, 1996.

Harvey R. Williams, 1977, Professor of Sociology, Emeritus, 2005.

John S. Williams, 1965, Professor of English, Emeritus, 1998.

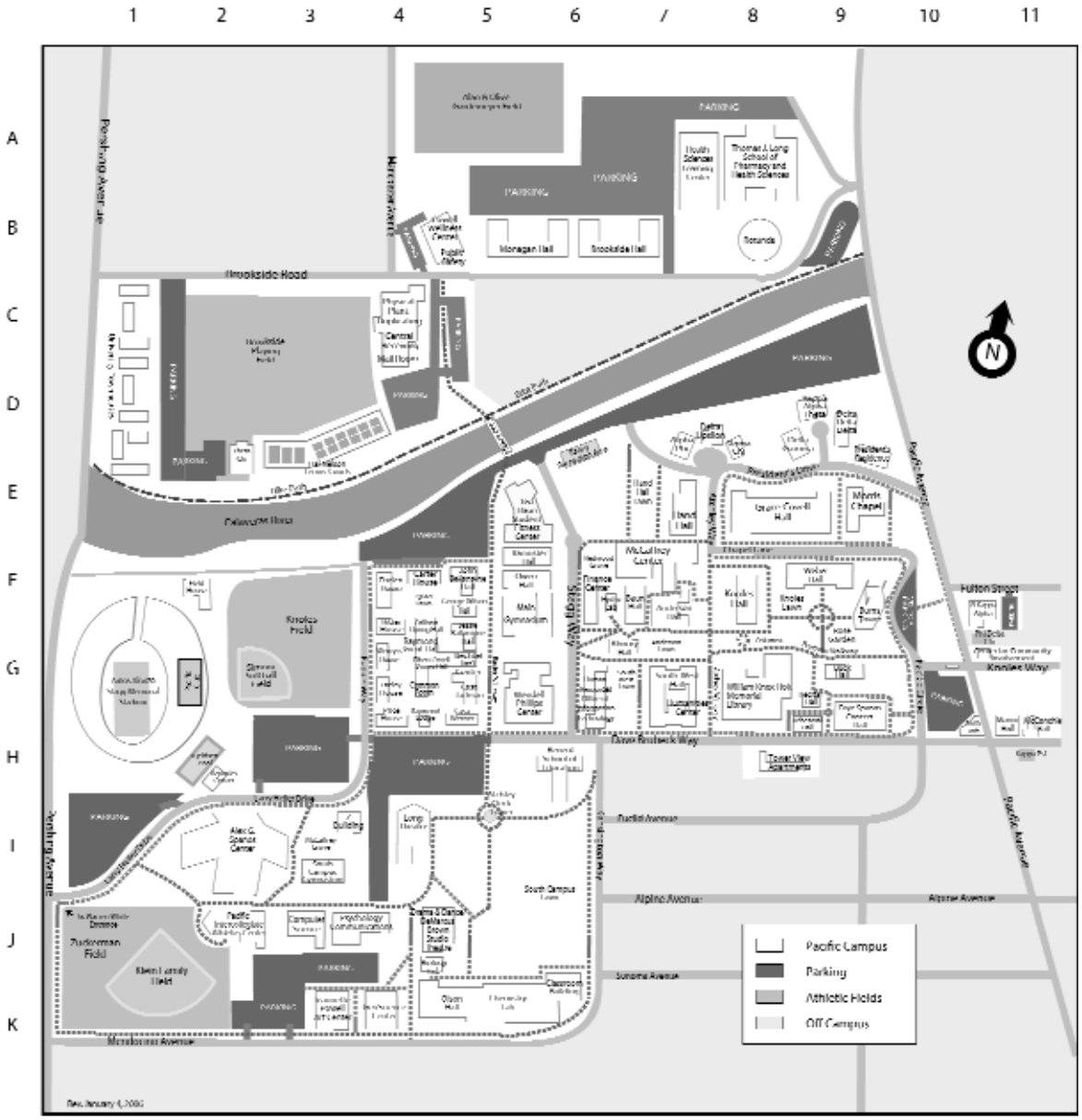
Robert R. Winterberg, 1950, Vice President, Emeritus, 1990.

Paul H. Winters, 1956, Professor of Communication, Emeritus, 1989.

John P. Wonder, 1963, Professor of Modern Language and Literature, Emeritus, 1990.

Carl E. Wulfman, 1961, Professor of Physics, Emeritus, 1996.

University of the Pacific



Campus Map

CAMPUS MAP LEGEND

CAMPUS BUILDINGS and FACILITIES

Alex G. Spanos Center (I,2)

Albright Auditorium (Wendell Phillips Center: H,6)

Alpha Phi (E,8)

Amos Alonzo Stagg Memorial Stadium (G,1)

Anderson Hall (G,8)

- 1st floor: President's Office, Presidents Room, Regents Dining Room, Engineering Lab, Pacificcard office
- 2nd floor: Provost's Office, Engineering

Anderson Lawn (G,8)

Anderson Y (G,11)

Aquatics Center (H,2)

Art Center, Jeannette Powell (K,4)

ASUOP Office (McCaffrey Center: F,7)

Atchley Clock Tower (I,6)

Bannister Hall (F,6)

- 1st floor: SUCCESS, Education Resource Center, Supportive and Disabled Services, CIP/Multicultural Affairs
- 2nd floor: Residential Life & Housing

Baun Hall (F,7)

Baun Fitness Center (E,6)

Bechtel International Center (F,5)

Benerd School of Education (H,6)

Biology Lab (J,5)

Bookstore (McCaffrey Center: F,7)

Box Office (Long Theatre: I,5)

Brandenburger Welcome Center (Burns Tower lobby: G,10)

Brookside Hall (B,6)

Brookside Playing Field (D,3)

Buck Hall (G,10)

Burns Tower, Robert E. (G,10)

Business, Eberhardt School of (Weber Hall: F,9)

Career and Internship Center (Hand Hall: E,7)

Carter House (F,5)

Casa Jackson (G,5)

Casa Werner (H,5)

Center for Professional and Continuing Education Burns Tower: G,10)

Central Receiving (C,4)

Chapel, Morris (E,10)

Chemistry Laboratory (K,6)

Classroom Building (K,6)

Colliver Hall (Morris Chapel: E,10)

Common Room, Raymond (H,5)

Communication Arts (J,4)

Community Involvement Program (Bannister Hall: F,6)

Computer Science Dept. (J,3)

Conservatory of Music (H,10)

Copy Center (Duplicating: C,4)

Counseling Center (Cowell Health Center: B,5)

Cowell Wellness Center (B,5)

- 1st floor: Public Safety
- 2nd floor: Counseling Center, Student Wellness Center

Dance Studio (J,5)

Delta Delta Delta (D,10)

Delta Gamma (E,9)

Delta Upsilon (E,7)

DeMarcus Brown Studio Theatre (J,5)

Dental Clinic (HSLC: B,7)

Dining and Catering Services (Grace Covell Hall, F,9)

Drama & Dance Building (J,5)

Duplicating Services (C,4)

Eberhardt School of Business (Weber Hall: F,9)

Education, Gladys L. Benerd School of (H,6)

Educational Resource Center (Bannister Hall: F,6)

Eiselen House (F,4)

Elbert Covell Dining Hall (G,5)

Engineering, School of (Baun Hall: F,7)

Farley House (H,4)

Faye Spanos Concert Hall (Conservatory: H,10)

Field House (F,2)

Finance Center (F,7)

Fitness Center, Baun (F,6)

Food Service (McCaffrey Center: F,7)

Gardemeyer Field, Alan & Olive (A,5)

Geosciences Center (K,4)

Grace Covell Hall (F,9)

Graduate Studies (Knoles Hall: F,8)

Grocery, Tiger(McCaffrey Center: F,7)

Gymnasium, Main (F,6)

Gymnasium, South Campus (I,3)

Hand Hall (E,8)

Hand Hall Lawn (E,7)

Head Start, Sandra Anselmo Center (J,3)

Health Sciences Learning Center (B,7)
Health Services, Student (B,5)

Humanities Center (Southwest Hall: G,7)

Human Resources (G,6)

Hydraulics Laboratory (F,7)

Information Technology (H,6)

International Programs & Services (Bechtel Center: G,5)

International Studies, School of (George Wilson Hall: F,5)

Jessie Ballantyne Hall (G,5)

John Ballantyne Hall (F,5)

Judicial Affairs (Raymond Lodge, H,5)

Kappa Alpha Theta (D,9)

Kappa Psi (H,11)

Khoury Hall (G,7)

Kjeldsen Pool (H,2)

Knoles Field (G,3)

Knoles Hall (F,8)

- 1st floor: Admissions, Registrar, Financial Aid
- 2nd floor: Graduate Studies & Research, Classrooms
- 3rd floor: Classrooms, Planning & Research

Knoles Lawn (F,9)

Learning Resources Center (Benerd School of Education: H,6)

Library, William Knox Holt Memorial (G,9)

- 1st Floor: Holt Atherton Special Collections
- 2nd Floor: Main Library, conference rooms
- 3rd Floor: Library, Music AV
- 4th Floor: Dean's office, ETS Project Studio

Long Theatre, Thomas J. (I,4)

Mail Center (D,4)

Manor Hall (H,11)

McCaffrey Center (F,7-8)

- 1st floor: Bookstore, Director's Office, Student Lounge, Tiger Grocery, Pacific Theatre
- 2nd floor: ASUOP, Pine & Spruce Rooms, Redwood Room, Summit, Student Package Center

McCaffrey Grove (I,4)

McConchie Hall (H,11)

Monagan Hall (B,6)

Morris Chapel (E,10)

Muir Center for Regional Studies (Wendell Phillips Center: (H,6)

Music Buildings

- Buck Hall (G,10)
- Faye Spanos Concert Hall (H,10)
- Owen Hall (F,6)
- Recital Hall (G, 9)
- Rehearsal Hall (H,9)

Olson Hall (K,5)

Pacific Club (G,2)

Pacific Intercollegiate Athletics Center (J,2)

Pacifican (South/West: H,8)

Pharmacy and Health Sciences, Thomas J. Long School of (B,9)

Phi Delta Chi (G,11)

Phi Delta Theta (E,2)
Physical Plant (C,4)
Physical Therapy (Rotunda: B,8)
Pi Kappa Alpha (F, 10)
President's Office (Anderson Hall: G,8)
President's Residence (E,10)
Presidents Room (Anderson Hall: G,8)
Price House (H,4)
Psychology Building (J,4)
Public Safety (Cowell Wellness Center: C,5)
Purchasing (Owen Hall: F,6)
Quad Dining Complex (Elbert Covell/Raymond Great Hall: G,5)
Quad Lawn (F,4)
Raney Recreation Area (E,6)
Raymond Great Hall (G,5)
Raymond Lodge (H,5)
Recital Hall (G,9)
Redwood Grove (F,7)
Redwood Room (McCaffrey Center: F,7)
Regents Dining Room (Anderson Hall: G,8)
Rehearsal Hall (H,9)
Reynolds Art Gallery (Geosciences Center: K,4)
Ritter House (G,4)
Rotunda (B,8)
Sears Hall (Morris Chapel: E,10)
Sigma Chi (E,8)
Simoni Softball Field (G,3)
South Campus Gym (I,3)
South/West Hall (H,8)
South/West Lawn (G,7)
Spanos Center, Alex G. (I,3)
Spanos Concert Hall, Faye (Conservatory: H,10)
Speech, Hearing & Language Center (A,7)
Sports Medicine Clinic (J,2)
Stadium, Stagg Memorial (G,1)
Student Package Center (McCaffrey 2nd Fl: F,7)
Student Academic Support Services (Raymond Lodge: H,5)
Taylor Conference Room (William Knox Holt Library: G,9)
Tennis Courts (E,3)
Tiger Grocery (McCaffrey Center: F,7)
Tower, Robert E. Burns (G,10)
Tower View Apartments (H,9)
Townhouse Apartments, University (D,1)
University Police (Lower Level Cowell Health Center: B,5)
University Townhouses (D,1)
Weber Hall (F,9)
Welcome Center, Brandenburger (Burns Tower Lobby: G,10)
Wemyss House (G,4)
Wendell Phillips Center (H,6)
West Memorial Hall (Finance Center: F,6)
Westgate Management Center (Weber Hall: F,9)
Wilson Hall, George (G,5)
Wood Bridge, Donald B. (E,5)
Z Building (I,4)
Zuckerman Field (J,1)

ADMINISTRATIVE OFFICES

President's Office (Anderson Hall: G,8)
Vice Presidents
University Advancement (Hand Hall: E,7)
Provost's Office (Anderson Hall: G,8)
Student Life (Hand Hall: E,7)
Finance (Finance Center: F,7)
Admissions (Knoles Hall: F,8)
Alumni Relations (Hand Hall: E,7)
Center for Intercollegiate Athletics (J,2)
Buildings and Grounds (Physical Plant: C,4)
Development (Hand Hall: E,7)
Financial Aid (Knoles Hall: F,8)
Housing (Bannister Hall: F,5)
Holt Atherton Depart. of Special Collections (Library: G,9)
Human Resources (H,6)
Information (Burns Tower: G,10)
Marketing and University Relations (Hand Hall: E,7)
Office of Information Technology (H,6)
Registrar (Knoles Hall: F,8)
Spanos Center Office (I,3)
Student Advising (Raymond Lodge: H,5))
Student Activities (McCaffrey Center: F,8)
Tours of Campus (Burns Tower: G,10)

COLLEGE, SCHOOL and DEPARTMENT HEADQUARTERS

College of the Pacific (Wendell Phillips Center: H,6)
- Art Department (K,4)
- Biological Sciences (Classroom Bldg: K,6)
- Ethnic Studies (WPC: H,6)
- Chemistry (K,6)
- Classics (WPC: H,6)
- Communication Arts (J,4)
- Economics (WPC: H,6)
- English (WPC: H,6)
- Film Studies (WPC: H,6)
- Geoscience (K,4)
- History (WPC: H,6)
- Mathematics (Classroom Bldg: K,6)
- Modern Language & Literature (WPC: H,6)
- Philosophy (WPC: H,6)
- Physics (Classroom Bldg: K,6)
- Political Science (WPC: H,6)
- Psychology (J,4)
- Religious Studies (WPC: H,6)
- Sociology (WPC: H,6)
- Speech-Language Pathology (A,7)
- Sport Sciences (Main Gym: G,6)
- Theatre Arts (J,5)

Center for Professional and Continuing Education
- (Burns Tower: G,9)

Conservatory of Music (Faye Spanos Concert Hall: H,10)
Business, Eberhardt School of (Weber Hall: F,9)
Education, Gladys L. Benerd School of (H,6)
Engineering & Computer Science, School of (Baun Hall: F,7)
Graduate Studies and Research (Knoles Hall: F,8)
International Studies, School of (George Wilson Hall: F,5)
Pharmacy and Health Sciences, Thomas J. Long School of (B,9)

academic calendar 2006-2007

2006 Fall Semester

(All Schools and Colleges except Pharmacy)

Orientation and Registration
- Session 1 ..... June 15-16
- Session 2 ..... June 17-18
- Session 3 ..... June 20-21
- Session 4 ..... August 24-25

International Student Orientation and Registration ..... August 22-23
Transfer Orientation and Registration ..... August 26-27
Classes Begin ..... August 28
Registration- All Students ..... August 28-29
Late Registration (with late fee) ..... August 30-September 5
Labor Day Holiday ..... September 4
Last Day to Add Classes ..... September 5
Last Day for Pass/No Credit or Letter Grade Option ..... September 5
Last Day to Receive Applied Music Refund ..... September 11
Fall Student Break ..... October 6
Homecoming & Parent/Family Day ..... October 14
Last Day to Drop Fall Classes ..... October 18
Advising for Spring Semester ..... October 16-November 3
Last Day for Pro-Rated Refund ..... October 25
Early Registration for Spring 2006 ..... November 2-16
Thanksgiving Vacation ..... November 22-24
Classes Resume ..... November 27
Classes End ..... December 15
Final Examination Period ..... December 18-22

2007 Spring Semester

(All Schools and Colleges except Pharmacy)

International Student Orientation and Registration ..... January 9-10
New Student Orientation & Registration ..... January 11-12
Martin Luther King Jr. Holiday ..... January 15
Classes Begin ..... January 16
Registration- All Students Except Pharmacy**
(See Pharmacy Calendar) ..... January 16-17
Late Registration (with late fee) ..... January 18-February 1
Last Day to Add Classes** ..... February 1
Last Day for Pass/No Credit or Letter Grade Option** ..... February 1
Last Day to Receive Applied Music Refund ..... February 5
President's Day ..... February 19
Last Day to Drop Spring Classes ..... March 1
Spring Break ..... March 12-16
Last Day for Pro-Rated Refund ..... March 17
Advising for Fall '07 Semester* ..... March 19-April 6
Classes Resume ..... March 19
Early Registration for Fall 2007 ..... April 4-19
Student Travel Day ..... April 9
Deadline to Apply for Fall 2007, Spring 2008, Summer 2008 graduation — Undergraduates ..... April 11
Classes End ..... May 8
Study Day ..... May 9
Final Examination Period ..... May 10-11, 14-16
Commencement Weekend ..... May 19-20

**Limited to currently enrolled students.*

*** Advisers should arrange to be available on this day.*

School of Pharmacy and Health Sciences

2006 Fall Term

Pharmacy Orientation ..... August 28
Classes Begin ..... August 28
Registration, Returning Students ..... August 28-29
Late Registration (with Late Fee) ..... August 30-September 5
Labor Day Holiday ..... September 4
Last Day to Add Classes ..... September 5
Fall Student Break ..... October 6
Mid Term Exam Week ..... October 9-12
Homecoming & Parent/Family Day ..... October 14
Advising for Winter Term, 2007 ..... October 16-November 3
Last Day to Drop Fall Classes ..... October 18
Last Day for Pro-Rated Refund ..... October 25
Early Registration for Winter 2007 ..... November 2-16
Thanksgiving Vacation ..... November 22-24
Classes End ..... December 1
Final Examination Period ..... December 4-8
Winter Semester Break ..... December 11-January 2

2007 Winter Term

Classes Begin ..... January 3
Registration ..... January 3-4
Late Registration (with Late Fee) ..... January 5-17
Martin Luther King Jr. Holiday ..... January 15
Last Day to Add Classes ..... January 17
Last Day to Drop Winter Classes ..... February 16
President's Day ..... February 19
Mid Term Exam Week ..... February 20-23
Last Day for Pro-Rated Refund ..... February 21
Advising for Spring Term 2007 ..... February 26-March 9
Early Registration for Spring 2007 ..... March 12-23
Student Travel Day ..... April 9
Deadline to Apply for Fall 2007, Spring 2008, Summer 2008 graduation ..... April 11
Classes End ..... April 13
Final Examination Period ..... April 16-20
Spring Semester Break ..... April 21-25

2007 Spring Term

Classes Begin ..... April 26
Registration ..... April 26-27
Late Registration (with Late Fee) ..... April 28-May 10
Last Day to Add Classes ..... May 10
Advising for Fall 2007 Term ..... May 14-18
Commencement Weekend ..... May 19-20
Early Registration for Fall 2007 ..... May 21-June 6
Memorial Day Holiday ..... May 28
Last Day for Pro-Rated Refund ..... June 3
Last Day to Drop Spring Classes ..... June 8
Mid Term Exam Week ..... June 11-15
Independence Day Holiday ..... July 4
Classes End ..... July 27
Final Examination Period ..... July 30-August 3

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