



7-1-2013

## 2013/2014 University of the Pacific [Stockton] Graduate Catalog

University of the Pacific

Follow this and additional works at: <https://scholarlycommons.pacific.edu/catalogs>

---

### Recommended Citation

University of the Pacific, "2013/2014 University of the Pacific [Stockton] Graduate Catalog" (2013).  
*Catalogue, Bulletin, Catalog*. 23.  
<https://scholarlycommons.pacific.edu/catalogs/23>

This Catalog is brought to you for free and open access by the Publications at Scholarly Commons. It has been accepted for inclusion in Catalogue, Bulletin, Catalog by an authorized administrator of Scholarly Commons. For more information, please contact [mgibney@pacific.edu](mailto:mgibney@pacific.edu).

# Table of Contents

---

---

|  |     |
|--|-----|
| University of the Pacific .....                                      | 2   |
| Graduate .....   | 3   |
| Research and Graduate Studies .....                                  | 4   |
| Admission .....  | 6   |
| Financial Assistance .....   | 9   |
| Academic Regulations .....   | 9   |
| Campus and Community .....   | 14  |
| Services for Students with Disabilities .....                        | 15  |
| Student Housing .....  | 15  |
| Health Services .....  | 16  |
| College of The Pacific Grad .....                                    | 17  |
| Biological Sciences .....  | 29  |
| Chemistry .....  | 32  |
| Communication .....  | 37  |
| Health, Exercise and Sport Sciences .....                            | 42  |
| Psychology .....   | 48  |
| Graduate Conservatory of Music .....                                 | 52  |
| Music Education .....  | 55  |
| Certification Program in Music Therapy .....                         | 57  |
| Music Therapy .....  | 60  |
| Eberhardt School of Business .....                                   | 67  |
| Gladys L. Benerd School of Education .....                           | 79  |
| School of Engineering and Computer Science .....                     | 94  |
| School of International Studies .....                                | 108 |
| The Thomas J. Long School of Pharmacy and Health Sciences Grad ..... | 113 |
| Pharmaceutical and Chemical Sciences .....                           | 115 |
| Physical Therapy .....   | 121 |
| Speech Language Pathology .....                                      | 126 |
| University Administration .....                                      | 130 |
| The Board of Regents .....   | 132 |
| Campus Map .....   | 133 |
| Academic Calendar .....  | 134 |
| Index .....  | 136 |

# University of the Pacific

---

As you review the university's general and graduate catalogs, we hope they will become useful guides that will help you throughout your academic journey at the University of the Pacific.

The catalog includes information about courses, campus resources and student services, program descriptions, degree requirements and information about college policies and procedures. Regulations that relate specifically to graduate degree programs, and graduate program information and course descriptions, appear separately for convenient reference. The focus of this catalog is on your success. It provides you with the information you will need to be a successful student.

*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.*

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

# Graduate

## Academic Divisions of the University

College of the Pacific (Arts and Sciences)

Conservatory of Music

Eberhardt School of Business

Gladys L. Benerd School of Education

School of Engineering and Computer Science

School of International Studies

Thomas J. Long School of Pharmacy and Health Sciences

Arthur A. Dugoni School of Dentistry

Pacific McGeorge School of Law

Office of Research and Graduate Studies

Center for Professional and Continuing Education

## 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 Arthur A. School of Dentistry in San Francisco and Pacific 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.*

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

## A History of Innovation

University of the Pacific is an independent, coeducational university serving more than 6,500 students on three campuses in Stockton, San Francisco and Sacramento. It was established by pioneer Methodist ministers in 1851 as California's first chartered institution of higher learning. Pacific has earned widespread recognition for its student-centered approach to education, its many innovations, and the accomplishments of its 55,000 living alumni.

As an innovator and leader in higher education, Pacific provided the state with its first medical school in 1858 (which later became part of Stanford, and today is California Pacific Medical Center); its first coeducational campus in 1870; and its first conservatory of music in 1878.

It was the nation's first to offer an undergraduate teacher corps program, the first to send an entire class to an overseas campus, the first to establish a Spanish-speaking inter-American college, and the first to offer a four-year graduation guarantee. With its move from San Jose to Stockton in 1924, Pacific became the first private four-year university in the Central Valley. Shortly after occupying the new campus, Pacific established one of California's earliest schools of education. In 1992 it was renamed the Gladys L. Benerd School of Education in honor of the alumna's endowed gift.

Pacific has enjoyed extraordinary stability in administration. Dr. Pamela A. Eibeck began her service in 2009 as the sixth President since the University's move to Stockton in 1924 and the 24th since its founding in 1851.

The University experienced its greatest growth and an expansion into graduate and professional education under the administration of Dr. Robert Burns (1947–1971). The School of Pharmacy opened in 1955. It is now the Thomas J. Long School of Pharmacy and Health Sciences, in honor of the Pacific benefactor and Regent who co-founded the former Longs Drugs Stores. In 1956 the graduate school was created, and in 1957 the School of Engineering was established. The Department of Computer Science joined the school in 2002 and was subsequently renamed the School of Engineering and Computer Science.

In 1962, the University acquired the College of Physicians and Surgeons, a school of dentistry founded in San Francisco in 1896. In 2004, the school was named the Arthur A. Dugoni School of Dentistry in honor of its dean of 28 years. It was the first time any university in the United States or Canada had named its dental school for the current dean.

Three new cluster colleges were established at Pacific in the 1960s, in the model of British universities such as Oxford and Cambridge. These colleges integrated faculty and students into distinct living and learning communities. Raymond College, established in 1962, was an accelerated, interdisciplinary liberal arts program in which students shaped their own courses of study. Elbert Covell College, established in 1963, was a unique inter-American college. Half the students were from the U.S. and half from Latin America, with classes taught in Spanish. Callison College, established in 1967, focused on non-Western studies with a year of study in an Asian culture. The cluster colleges were absorbed into the rest of the University in 1982. Their values, including a close-knit learning community, accelerated and interdisciplinary programs, and self-designed majors, have left a lasting impact on Pacific. Their emphasis on global education continued in the School of International Studies, founded in 1987 as the first university-based undergraduate school of international studies in California. In 2012, the School of International Studies, while retaining its autonomy as a school, became part of the College of the Pacific.

In 1966, Pacific broadened its footprint to Sacramento when McGeorge College of Law, an independent law school founded in Sacramento in 1924, merged with the University as the Pacific McGeorge School of Law. In 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, now the Center for Professional and Continuing Education.

Over the last twenty years, Pacific has advanced its legacy of innovation and leadership. In 1992 the University offered the nation's first "four-year guarantee," a promise to students that they will graduate on time if they meet certain requirements. Under the leadership of President Donald DeRosa (1995–2009), the University invested more than \$200 million in facilities renovation and construction projects on all three campuses. Pacific also increased distinctive accelerated programs that enabled students to complete undergraduate studies in combination with professional degrees in pharmacy, law, dentistry and business. The University intensified its commitment to experiential learning, including undergraduate research, internships, community service and education abroad. Pacific also launched an environmental sustainability initiative and instituted the Powell Scholars Program, a premier scholarship program for undergraduate student leaders.

In 1999, the late jazz legend Dave Brubeck '42 and his wife Lola Whitlock Brubeck '45, both Pacific graduates, announced that their papers, recordings and memorabilia would be deposited at Pacific for study and research. In response to this gift, a treasure of historic American music and memorabilia, the University established The Brubeck Institute for the study, promotion and performance of American music.

Dr. Pamela A. Eibeck assumed Pacific's Presidency in 2009. Under her stewardship Pacific is expanding its presence in Sacramento and San Francisco and implementing a bold new strategic vision, Pacific 2020. This vision capitalizes on the University's highly regarded academic programs, formative student-teacher relationships and multiple locations to position Pacific to become a leading California university preparing graduates for meaningful lives and successful careers.

President Eibeck has also made community engagement a top priority for the University. In 2010, Pacific launched the "Beyond Our Gates... Into the Community" initiative in order to forge community partnerships that improve lives in our region. As part of "Beyond Our Gates," the University has launched The Tomorrow Project, an intensive K-12 educational outreach program, and the Beyond Our Gates Community Council, an advisory body comprising local leaders representing business, education, nonprofit and other fields.

In November 2011, the University finalized the purchase of a new campus in San Francisco at 155 Fifth Street. The new campus provides the space and facilities the Arthur A. Dugoni School of Dentistry needs to remain one of the nation's top dental schools. It also affords Pacific an opportunity to expand its programming and visibility in San Francisco. The building is anticipated to open in June 2014.

Pacific continues to enjoy national recognition for its leadership in higher education. The University has been listed as a "Best Value" (Top 50) by U.S. News & World Report every year since 2000. U.S. News also ranks Pacific very high for ethnic (Top 10) and economic (Top 5) diversity. In 2012, PayScale, which tracks salary information, ranked the University in the top 75 institutions in the United States for highest paid graduates. Undergraduate applications have soared from approximately 5,300 in 2008 to nearly 23,000 for fall 2012.

The University remains committed to its personal, student-centered approach. Faculty and staff are dedicated to excellence in teaching. Highly interactive student-faculty relations and a broad array of co-curricular activities that develop students' abilities are hallmarks of the Pacific experience.

## Research and Graduate Studies

Bhaskara Jasti, PhD, Interim Dean  
Carol Brodie, EdD, Assistant Dean  
Jean Han, MA, Graduate Enrollment Services Manager

### Unique and Distinctive Programs

This division of the University of the Pacific offers graduate programs that emphasize distinctive forms of creative scholarship while it trains students in the principles and methods of research and develops their professional competence.

The goal of graduate education at Pacific 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 Office of Graduate Studies 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.

Available through the School of Dentistry is a graduate program in orthodontics that leads to a certificate and the Master of Science in Dentistry; a graduate program in oral and maxillofacial surgery that leads to a certificate; an International Dental Studies program, and through McGeorge School of Law a Juris Doctor degree in a full-time or part-time program, and Master of Laws (LL.M. and J.S.D.) degrees in Government and Public Policy, Transnational Business Practice, Advocacy Practice and Teaching and International Water Resources. Students interested in these programs should apply through those schools.

### Degrees

**Biological Sciences** (MS)  
**Business** (MAcc, MBA, MBA/JD, MBA/PharmD)  
**Communication** (MA)  
**Education** (MA, MEd, EdS, EdD, PhD)  
**Engineering and Computer Science** (MSES)  
**Health, Exercise and Sport Sciences** (MA)  
**Intercultural Relations** (MA)  
**Music Education** (MM)  
**Music Therapy** (MA)  
**Pharmaceutical and Chemical Sciences** (MS, PhD)  
**Physical Therapy** (DPT)  
**Psychology** (MA)  
**Speech-Language Pathology** (MS)

Students interested in these programs should apply directly through the Office of Graduate Studies. The distinctiveness of graduate studies lies in our academic programs, which emphasize various forms of creative scholarship, training of students in the principles and methods of research and developing professional competence, by limiting the number of students enrolled in order to allow them to work more directly with faculty members. Many degree programs are small, and in place of seminar experience, students work relatively independently under close supervision of the faculty.

### Biological Sciences

Graduate students in Biological Sciences carry out research in areas that range from field studies in plant and animal systematics and ecology to laboratory studies on bacterial antibodies and cellular morphogenesis, for example. They learn a variety of techniques such as slab gel electrophoresis, electron microscopy and computerized data reduction. The MS Program in Biological Sciences enables students to work closely with faculty members in research and in teaching. Graduate study in molecular and cellular biology, physiology, microbiology, ecology, paleontology and plant and animal systematics provides a good background for advanced study at the PhD level, for entry into professional

school (dentistry, pharmacy, medicine), education, or industry. Some biology graduate students also participate in research at the Thomas J. Long School of Pharmacy and Health Sciences.

## Business

In addition to its Master of Business Administration program (MBA) the Eberhardt School of Business offers accelerated dual-degree programs in Accounting and in International Commerce, and joint programs with the McGeorge School of Law, and the Thomas J. Long School of Pharmacy & Health Sciences. All programs emphasize leadership, ethics, communication skills, and teamwork.

Whether taking the part-time or the full-time pathway, the Eberhardt MBA is designed for recent college graduates with limited business experience, as well as for the experienced professional who seeks additional business skills and knowledge. For the less experienced, the program provides significant opportunities to gain experience through internships and experiential coursework in a variety of settings. For the more experienced working professional, it provides a broadening of functional knowledge into all areas of management, and the development of skills necessary for senior management and executive positions.

The nine-month Master of Accounting is designed for students who possess an undergraduate degree in accounting and wish to apply for licensure as a Certified Public Accountant under California's new accounting education rules. The challenging coursework goes beyond traditional accounting curriculum to emphasize important skills such as leadership, communication, professional ethics, and applied research. Students who do not have an undergraduate accounting degree are also eligible for the Master of Accounting program, but in most cases, will spend two or more years completing the coursework necessary for licensure as a Certified Public Accountant.

The Bachelor of Science in Accounting/Master of Accounting Dual Degree Program is a five-year program designed for Pacific's undergraduate accounting students. The program begins in the third undergraduate academic year with a "junior core" in accounting, includes a broad foundation in business, and finishes with a specific focus in professional accounting. At the end of the fifth year successful graduates will be awarded both a Bachelor of Science in Accounting and a Master of Accounting, and will meet the current education requirements for California licensure as a Certified Public Accountant.

The Bachelor of Arts in International Commerce/Master of Business Administration program is a five-year program designed for undergraduate students in the School of International Studies who are majoring in International Affairs and Commerce. Undergraduate students apply to the MBA program in the spring of their junior year, and spend the following two years completing both the undergraduate degree in International Affairs and Commerce and the MBA degree. Students are awarded both degrees upon completion of all requirements.

## Communication

Students in communication may pursue degrees in a number of areas which include communication education, political communication, and media and public relations. Special or topical areas of worthy interest also may be proposed as well as interdisciplinary programs in conjunction with other departments. Programs may include field studies, internships and other learning experiences as appropriate and approved by the department.

## 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 represents the best professional practice in their positions of future leadership in schools and the community.

The Gladys L. Benerd School of Education offers master's, educational specialist, and doctoral degree programs that include relevant state credentials in teaching, curriculum and instruction, school psychology, educational psychology, and educational administration. Degree programs leading to the EdD are offered in Educational Administration and Leadership as well as Curriculum and Instruction. A degree program leading to the EdS and a PhD is offered in Educational/School Psychology.

The School also has numerous units that publish research and provide opportunities for the practical application of theory and pedagogical procedure. These practica and intern sites are available in close proximity to the University.

Graduate assistantships are available for full-time doctoral students to participate in the scholarly activities carried on in the units of the Gladys L. Benerd School of Education. Some full- and part-time scholarship assistance is available for students who wish to study at the master's level.

## Credential Programs

The credential program in education prepares candidates for credentials for public schools. Preparation programs exist in the following areas: elementary and secondary teaching, pupil personnel services for school psychology, administrative services (school administration), and specialist programs in Special Education.

## Engineering and Computer Science

The School of Engineering and Computer Science offers a Master of Science in Engineering Science. The program is designed to strengthen students' technical, analytical, and professional breadth and depth. Students are introduced to techniques and best practices of professional research and learn the foundations for assessing the merits of published technical findings. Students interested in eventually pursuing a PhD want to build upon this training by engaging in research and completing a thesis. Other students interested in applied technology may prefer to enhance their studies with a grade-level practicum experience in industry, or by taking additional coursework.

## Health, Exercise and Sport Sciences

The Master of Arts program in health, exercise and sport sciences provides for scholarly study in the areas of sport pedagogy, sport medicine, sport management, and athletic training.

Graduate studies in the health, exercise and sport sciences are frequently interdisciplinary. Although the majority of research studies deal in some way with one or more aspects of human movement, the specific focus of student research may be psychological, sociological or physiological.

Following are some examples of the scope of research done by students in the department: sex role identity, spectator aggression, relaxation training, aerobic and blood lipid capacities, biomechanical analyses of movement, prescriptive exercise, women in sports, travel patterns of commercial recreation visitors, comparative coaching styles, personnel selection process and invention of new games.

## 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 every January and July. The core is complemented with 8 required elective units and either a traditional Master's thesis or a capstone project. Students making normal progress will be expected to complete the degree in two-and-a-half years. The core curriculum emphasizes a theory-into-practice

model that stresses the application of relevant theoretical frameworks and concepts to real-world contexts which includes 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.

## Music Therapy and Music Education

In the Conservatory of Music, some students are being prepared to teach at the college level or to provide 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.

In music education, students already credentialed as music teachers have a wide variety of electives available, in addition to the core courses in research, current topics, music history, and music theory/composition. Electives include advanced conducting, pedagogy, advanced study on instruments or voice, and specialized ensembles such as jazz, wind ensemble, orchestra, choir, opera, or chamber music. There is a thesis option. Students may pursue advanced pedagogical and conducting skills through microrehearsal opportunities and are encouraged to work with rehearsal settings on campus and in local schools. Students who earn their teaching credential in combination with their master's degree are given multiple fieldwork and student teaching opportunities utilizing resources from the Conservatory of Music and the Gladys L. Benerd School of Education.

University of the Pacific students who pursue the Master of Arts in Music Therapy are able to focus on their specific personal career goals, by selecting one of two tracks supporting:

- Development of advanced clinical, administrative, and program development skills, or
- Preparation for eventual entry into teaching and research careers.

## Pharmaceutical & Chemical Sciences

Interdisciplinary programs in the Thomas J. Long School of Pharmacy and Health Sciences and the College of the Pacific 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.

Students in the Pharmaceutical and Chemical Sciences Program may pursue studies in the areas of: bioanalytical and physical chemistry; chemical synthesis, drug discovery and design; drug targeting and delivery; molecular/cellular pharmacology and toxicology; and pharmacoconomics, health care outcomes and services. In addition to Master of Science and Doctor of Philosophy degree programs, combined PharmD/MS, PharmD/PhD, and PharmD/MBA programs are available.

## 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 (DPT) program is committed to educate 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.

Students in the Doctor of Physical Therapy Program become lifelong learners who are skilled, reflective, autonomous practitioners that advocate for optimal health, wellness and performance for all members of society. The concise curriculum emphasizes development of a strong

foundation upon which clinical skills are developed in the context of critical thinking and evidence-based decision making. Each term includes a combination of learning in the classroom and lab, as well as structured opportunities for exposure to patient care. Students complete the program by participating in three full-time clinical internships in a variety of settings throughout the country and internationally.

After successful completion of the entire 25-month program, graduates are eligible to take the licensing examination. The three year licensure pass rate for Pacific graduates is 99%. Once licensed, physical therapist options for employment are extremely varied and our graduates are in high demand as indicated by a 100% employment rate.

The Doctor of Physical Therapy (DPT) degree requires a high level of competency in all practice parameters within the scope of physical therapy. The specific criteria for graduation and permission to sit for professional licensure are enveloped by the national accrediting body. Students who enter into this professional degree program must have graduated from an accredited undergraduate college or university and received a baccalaureate degree in a major of choice. All prerequisites must be fulfilled prior to the beginning of the fall semester of the acceptance year. All candidates must apply and be offered an interview within the department prior to acceptance. Formal invitations to become a member of the incoming class are given within the spring semester following the interview.

This professional program is demanding and requires all students to enroll in a continuous educational experience for 25 months beginning in late August during the year of acceptance.

## Psychology

In psychology, students work toward a Master of Arts degree in behavioral psychology that emphasizes either applied behavior analysis or doctoral preparation in behavior analysis, behavioral psychology, or related fields. 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 that involve 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.

Students are prepared for careers that use applied behavioral techniques in clinical or business settings with several employment options after the master's degree, or for entry into doctoral programs in areas such as applied behavior analysis, behavioral medicine and clinical psychology. Both practical experience in a variety of community settings and research experience are emphasized.

## 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 complements to the academic program. Students may also elect to obtain the Clinical Rehabilitative Services Credential/Speech, Hearing and Language.

Graduates of the Speech-Language Pathology program are academically and clinically prepared for a professional career in Speech-Language Pathology. Clinical practica are performed in the on-campus Speech, Hearing and Language Center as well as at off-campus sites. Options for employment include schools, hospitals and rehabilitative centers. Close student-faculty interaction encourages students to realize their potential in rehabilitative skills.

## Admission

University of the Pacific believes in giving a high priority to the enrollment of men and women from different backgrounds and demographic groups.

Admission decisions are based on the quality of the applicant's academic degrees and record, the personal statement of purpose, letters of recommendation from professors or others familiar with the applicant's

academic work, performance in aptitude and achievement tests, relevant work experience, preparation in the proposed field of study, and on the appropriateness of the applicant's goals to the graduate program and of the applicant's research interests to those of its faculty. Some graduate programs have additional admission criteria that applicants must meet; please see the individual listings and contact individual programs for full details.

By the time they enroll, successful applicants must hold a bachelor's degree or the equivalent from an institution of acceptable standing, that is comparable to a degree from the University of the Pacific both in distribution of academic subject matter and in scholarship achievement. At least a B average (3.0 GPA) or its equivalent is required for full admission. Satisfaction of minimal standards does not, however, guarantee admission, since the number of qualified applicants far exceeds the number of places available. As a consequence, many well-qualified applicants cannot be accommodated.

If you are an international applicant or a non-U.S. citizen who did not receive your bachelor's degree in the United States, consult the information below for international students for special requirements pertaining to your admission.

An application for admission made through the Office of Graduate Studies implies a student's intention to work toward an advanced degree. An applicant may apply to more than one graduate program; however, they must choose only one program upon confirmation of their intent to attend Pacific.

### **Returning to Pacific After an Absence**

#### **New students**

If you cancelled your registration or received acceptance into a graduate program and wish to attend a different semester, contact the Office of Graduate Studies. If you do not attend within one year of receiving acceptance into the graduate program, and wish to begin your graduate program, you must submit a new Graduate Application for Admission. Your previous admission status has no bearing on the decision for admission in the future.

#### **Continuing Registration**

All graduate students in graduate degree or credential programs must satisfy the Continuous Registration Policy for each of the school terms defined for the student's program from admission into the Graduate Studies Office until all degree requirements are met or their status as a degree or credential student is terminated. This includes students who are completing preliminary or final examinations, or presenting terminal projects; and applies to students regardless of location. If degree or credential requirements are completed between terms, the student must have been registered during the preceding term.

Continuous registration is intended for students who have completed all of their required coursework. The Continuous Registration Policy can be met by registering for GRAD 200 (through Inside Pacific) at least one semester per academic year (Fall or Spring, except for MAIR students who must register for either Spring or Summer).

#### **Failure to Meet Continuous Registration Requirements**

A graduate student who fails to meet the continuous registration requirements and has a break in registration will be inactivated by Graduate Studies. Students in good academic standing who were inactivated from a program may petition for reinstatement by the program and Graduate Studies by submitting a \$50 reinstatement fee and the Petition for Reinstatement in the Graduate Studies Office by the posted deadlines.

After 12 months or more of being inactivated, students who wish to re-enter a program must complete an entirely new application process with the appropriate fees and documentation. A decision to readmit a former student are to include a statement by the admitting degree program of which courses previously taken can be applied to the new program of study.

## **Types of Admission**

### **Full Admission**

A student that meets all the admission criteria of a program will be classified as a full standing student. Students are advanced from this classification to candidacy for advanced degree upon formal notification from the department.

### **Conditional Admission**

Students may be admitted to some of the graduate programs on a conditional admission basis, with a cumulative GPA from 2.65 to 2.99 (on a 4.0 scale), provided they show evidence that they excel in graduate studies. Such evidence may include: (1) satisfactory scores on a GRE Test; (2) satisfactory work at another graduate school; or (3) outstanding professional experience that demonstrates the ability to handle academic work in the major area. They must earn grades of B or higher in all coursework and maintain a minimum cumulative GPA of 3.0 or higher in the first 12 credits they register for during the first two semesters at which time they may be listed as full standing graduate students. Failing to achieve this GPA will result in the dismissal of the student from Pacific.

Conditionally admitted students are advised of deficiencies and of other conditions to be met to achieve full standing. Their status is reviewed each term during the first 12 credits of course work at the University of the Pacific. Students may be dismissed after their first term.

Those who have earned grades of B or higher and a cumulative GPA of 3.0 or higher for the first 12 credits, exclusive of individualized study, and removed all deficiencies specified at the time of admission, will be eligible for placement into full graduate standing.

If a conditionally admitted student is dismissed from Pacific during their first 12 units of study, or before they are given Full admission status, there is no recourse available for grievance or a petition to request readmission.

### **Unclassified Student Admission**

Students who have a bachelor's degree but do not plan to work for an advanced degree may take classes as an unclassified student. No more than 12 credits earned as an unclassified student may be applied toward an advanced degree. Unclassified students are required to meet the same academic standards as other graduate students. Unclassified students who later wish to work for an advanced degree must make a formal application to the appropriate department or interdepartmental program and be formally admitted by the Office of Graduate Studies as a student with full admission status.

## **General Admission Requirements for All Applicants**

### **To be considered for admission with full standing, applicants must have:**

- A bachelor's degree from an institution accredited by one of the regional accrediting associations. Applicants to the Office of Graduate Studies must have a bachelor's degree substantially similar as those granted by Pacific. These degrees include a broad range of courses representing the basic academic disciplines. A major portion of the courses must be evaluated by a multilevel system, most often on a 4.0 scale using letter notations of A, B, C, D, and F. Applicants holding degrees not meeting these standards may be denied admission to graduate degree programs at Pacific.

*\*MS in either the Masters of Accounting Blended Program or the Engineering Science Blended Program do not require a B.S./B.A. (for more information see program-specific information)*

- Adequate undergraduate preparation in the proposed major field or equivalent evidence of an appropriate background for undertaking as an advanced degree program.
- An undergraduate average of B (GPA of 3.0) or better overall in the undergraduate program or in upper division work of the baccalaureate degree. The student's last 60 units from their undergraduate degree will be used for this calculation.



Applicants must complete a University of the Pacific Graduate Admission application. All applications must be complete, which includes: the application form, an essay, official transcripts from each college or university attended, three letters of recommendation, and test scores appropriate to the program. The essay must be 300 to 500 words in which applicants discuss their academic interests, objectives and plans for graduate study. All items must be submitted before an admission decision can be made.

For transcripts to be considered official, they must be in an envelope that has been sealed by the school. The three letters of recommendation must be on the Graduate recommendation form and written within the last year. College instructors who know the applicant's capacity for graduate work should complete at least a recommendation form and a letter. For information on required tests, see the 'Test Information' in this section. See the application for further details.

**Physical Therapy** applicants must visit <http://web.pacific.edu/graduate> for instructions to apply on line using the Physical Therapy Centralized Application Service (PTCAS). The PTCAS application, in addition to the University of the Pacific Supplemental Application, and all required materials and fees must be received by November 1. Most personal interviews are conducted in January and early February.

**Speech Language Pathology** applicants must visit <http://web.pacific.edu/graduate> for instructions to apply on line using the Speech-Language Pathology's Centralized Application Service (CSDCAS). The CADCAS application, in addition to the University of the Pacific Supplemental Application, and all required materials and fees must be received by February 1.

**Intercultural Relations** applicants must complete a form that has questions specific to that program in place of an essay.

Business School Programs require a specific application.

The **Psychology** Department requires an additional application specific to the Psychology program.

**Note:**

- The ability of an applicant to meet or exceed the minimum standards for admission does not guarantee admission to the program.
- Applications received complete (including submission of test scores) before the deadlines will be given the highest priority. Applications submitted or completed after the deadline, may be evaluated and students will be admitted on a space-available basis (depending upon program applied to).
- Students are not permitted to register until they have submitted their confirmation of enrollment, and have satisfied all admission requirements.
- Admission will be denied to applicants possessing bachelor's degrees with a significant amount of credit awarded for work experience that was not supervised by a faculty member of an accredited university nor evaluated in units which identify the academic content.

**Application Fee**

Each applicant must submit the appropriate application fee in U.S. dollars along with the Graduate Application for Admission. Students enrolled as undergraduate or graduate students at the University of the Pacific at the time of filing the application are exempt from paying the application fee; this does not include unclassified students. The check or money order should be made payable to "University of the Pacific," for paper applications. Please contact the Office of Graduate Studies if you have questions.

Online Applications = \$50

Paper Applications = \$75

**Testing Requirements**

**Note: All test scores must be official, less than five years old, and received by Graduate Studies prior to admission decision.**

**Graduate Record Examination (GRE)**

The GRE is required for Graduate degree program admission except for Masters programs in Curriculum and Instruction, Educational Administration and Leadership, Intercultural Relations programs, and Business Administration. The GRE requirement is waived for Music Education or Music Therapy students with a GPA greater than 3.5.

Applicants who are applying to a credential program only are not required to take the GRE.

The GRE subject test in psychology is required for the EdS and PhD programs in the Department of Educational and School Psychology.

All GRE scores must be less than five years old. Applicants must take the GRE exams at their own expense. The GRE general examination is conducted by the Educational Testing Service (ETS) year round and the subject examinations are given several times each year. Contact ETS at 1.800.GRE.CALL for examination dates or [www.ets.org](http://www.ets.org) for information.

**Graduate Management Examination (GMAT)**

Applicants who apply to the Masters in Business Administration (MBA) program must take the GMAT examination. This examination is conducted by the Educational Testing Service (ETS) year round. For GMAT information, call the Eberhardt School of Business at 209.946.2629, or contact GMAT, ETS at P.O. Box 6103, Princeton, New Jersey 08541-6103, or [www.mba.com](http://www.mba.com). These scores must be less than five years old.

**Intercultural Development Inventory (IDI)**

Applicants to the MAIR program are required to take the Intercultural Development Inventory (IDI), a questionnaire that measures intercultural sensitivity. Once the admission application is received, MAIR applicants are sent the IDI with instructions to complete and return it to Kent Warren, Director of Graduate Programs at the Intercultural Communication Institute. For further information regarding the IDI, applicants may contact Dr. Warren via e-mail at [mair@intercultural.org](mailto:mair@intercultural.org) or by calling (503) 297-4622.

**International Applicants**

In addition to the Application materials listed on the Application Portfolio pages, international applicants must also supply the following information to be considered for admission to the Office of Graduate Studies six weeks prior to the deadline:

**Transcript Evaluation:** International students who attended institutions outside of the United States must submit an evaluation of academic records. Transcripts must be reviewed by World Education Services (WES) for credential evaluation. Please request a Course-by-Course WES ICAP (International Credential Advantage Package) evaluation that includes a grade point average (GPA) and have an official copy sent directly to the Office of Graduate Studies. Foreign language transcripts will also need to be translated into English before an evaluation can be processed.

**Certification of Finances:** Government regulations require that international students provide evidence that they are able to meet the financial requirements of their education, living expenses, and miscellaneous costs. This requires the submission of the "Certification of Finances" form (found on the Forms for Admissions Page) in the amount to cover all of the aforementioned costs for one year. Exceptions to this amount are applicants who expect teaching assistantships, who are required to verify US \$5,000 to qualify for admission consideration.

**English Proficiency Examination Results:** Applicants whose native language is not English must arrange for official results (of test taken within two years) of the Test of English as a Foreign Language (TOEFL) examination to be sent directly to the Office of Graduate Studies. The TOEFL exam is administered by the Educational Testing Service. English proficiency examination results are also accepted from the International English Language Testing System (IELTS). All English proficiency test scores must be less than two years old. The institution code for the

University of the Pacific is **4065**, which is used to report the official scores to the University.

**Minimum Score for Admission:** On the TOEFL iBT a minimum score of 80 is required to be considered for admission to the Office of Graduate Studies. On the IELTS a minimum score of 6.5 is required. (Some programs require higher scores; please contact specific departments for further information.)

**Minimum Score for Teaching Assistants:** A score of at least 90 TOEFL iBT or 7.0 on IELTS is required to be considered for an award of a teaching assistantship in most programs. Applicants not obtaining the required score for an assistantship may be asked by a unit's admissions committee to submit scores from the Test of Spoken English (TSE), also administered by the Educational Testing Service.

## Financial Assistance

Many programs offer graduate assistantships each year for students based on academic quality and experience in research. Graduate assistantships are available each year in many of the departments and schools where advanced degrees are offered. These graduate assistantships may be in the form of scholarship, tuition waiver, cash stipends for services performed, or a combination of those, depending upon each student's program and department recommendations. Please contact your program director(s) for details on graduate assistantships or other forms of financial aid.

Application for assistantships should be made to the Office of Graduate Studies by the published deadlines for each program. Since it is necessary for all applicants to be admitted to graduate standing before appointments are made, all graduate admission application materials must also be completed and submitted to the Office of Graduate Studies by the published deadlines. Please note that most awards are offered during the fall admission term, with limited availability during other admission terms.

Head resident positions in the Residential Life Program are available to graduate students; information and applications may be obtained from the Office of Student Life.

The Project Teach Scholarship Program, which reduces tuition by approximately one-third, is a unique Tuition Reduction Program that is available on a continuing basis only for graduate students admitted to and enrolled in credential or graduate degree programs in the Benerd School of Education. Interested candidates should contact the Dean's Office in the School of Education directly.

Research awards are available for departmental or contract research in some fields. From time to time, fellowships are offered in certain federally-supported programs in which University of the Pacific participates.

Graduate students who are U.S. citizens or eligible non-citizens may apply for federal student loans. For information, visit [www.pacific.edu/financialaid](http://www.pacific.edu/financialaid) or contact the:

Financial Aid Office  
University of the Pacific  
Stockton, CA 95211  
(209) 946-2421 or [financialaid@pacific.edu](mailto:financialaid@pacific.edu)

## Academic Regulations

All graduate students 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. The University and the Office of Research and Graduate Studies reserve the right to modify or change the curriculum, admission standards, course content, degree requirements, regulations, tuition or fees at any time without prior notice. The information in this catalog is not

to be regarded as something that creates a binding contract between the student and the school.

## Academic Standing

All advanced-degree students (master's or doctoral programs) are expected to make satisfactory progress toward the specific academic degree to which they were admitted. Advanced-degree students are required to maintain a cumulative minimum grade point average (GPA) of 3.0 or higher in all courses listed in their graduate program plan of study and in all courses taken as a graduate student.

Students in a credential-only program must maintain a GPA of 2.5 and have a cumulative average of 2.5 or higher to clear their credential. Students in a basic teacher education credential only program who wish to do directed teaching in an internship must maintain a 3.0 GPA.

At the end of each semester a graduate student's academic standing is determined to be one of the following:

- good standing
- good standing with warning
- probation
- subject to disqualification (temporary status)
- disqualification.

The criteria for these academic standings are based upon a combination of cumulative Pacific GPA and the term GPA. Criteria for the different academic standings are outlined below:

### **Good Standing:**

- Term GPA of 3.0 or higher and a cumulative Pacific GPA of 3.0 or higher

### **Good Standing with Warning:**

- Term GPA below 3.0 and a cumulative Pacific GPA of 3.0 or higher

### **Probation:**

Any advanced-degree student who has completed six (6) or more course units of study and has a Pacific cumulative grade point average below 3.0 is placed on academic probation. Students on academic probation who fail to raise their Pacific cumulative grade point average to 3.0 at the end of the probationary semester are subject to disqualification from the Graduate program. 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.

If prior semester is Good Standing, or Good Standing with Warning

- Term GPA below 3.0 and cumulative Pacific GPA is 3.0 or below

### **Subject to Disqualification (Temporary Status):**

If prior semester is Probation:

- Term GPA below 3.0 and cumulative Pacific GPA is 3.0 or below

### **Disqualified:**

Each school determines whether a student subject to disqualification is disqualified. If not disqualified, a student subject to disqualification is on probation for the following term. If disqualified a student is not allowed to register for further study at the University during a regular term while disqualified.

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

Any advanced-degree student who receives more than one grade of C+ or lower has his or her progress reviewed by the department and the Office

of Graduate Studies and it may result in dismissal from the Graduate program.

In addition to maintaining a 3.0 average, advanced degree students must make satisfactory progress in their degree programs. Students are expected to make continual progress toward completing required research, qualifying examinations, thesis or dissertation writing, and all other University or Departmental requirements. Failure to make satisfactory progress can result in dismissal from the Graduate program. Students who wish to appeal a disqualification must submit a written petition to the Dean of Research and Graduate Studies.

Other reasons may result in a student's dismissal from a graduate program. Refer to the Honor Code in Tiger Lore, and any program-specific guidelines.

## Classification of Graduate Students

**Full:** All students admitted with full graduate standing. Students are advanced from this classification to candidacy for advanced degrees upon formal notification from department.

**Conditional Admission:** Students may be admitted to some of the graduate programs on a conditional admission basis, with a cumulative GPA from 2.65 to 2.99 (on a 4.0 scale), provided they show evidence that they excel in graduate studies. Such evidence may include: (1) satisfactory scores on a GRE Test; (2) satisfactory work at another graduate school; or (3) outstanding professional experience that demonstrates the ability to handle academic work in the major area. They must earn grades of B or higher in all coursework and maintain a minimum cumulative GPFA of 3.0 or higher in the first 12 credits they register for during the first two semesters at which time they may be listed as full standing graduate students. Failing to achieve this GPA will result in the dismissal of the student from Pacific. See the Admission section of this catalog for additional information on this classification.

**Credential:** Students admitted to do post-baccalaureate work that leads toward an initial teaching credential, specialist instruction credential or services credential.

### Clinical Competency

Many of the graduate programs offered at the University include experiential coursework. Prior to taking a course that includes an experiential component; students are required to demonstrate that they have the necessary skills, aptitude and competencies to successfully complete the course. Faculty of departments that offer experiential courses have the discretion of denying enrollment in these courses to students evaluated as not possessing the necessary clinical competencies. Procedures used to assess clinical competency vary across programs. Students may obtain additional information from their Program Director.

Students who do not demonstrate adequate clinical and experiential competency can be dismissed from a degree program, regardless of academic standing.

## Course Loads

- Full Time: 8 or more units a semester
- Half Time: 7 to 4 units a semester
- Less than Half Time: 3 to 1 units a semester

Standard registration loads:

- Master's degree program: 16 units per year
- Doctoral degree program: 12 units per year

Students with teaching assistantships or other assistantships should check with their department for specific guidelines concerning unit requirements. Conditionally admitted students are not eligible for assistantships.

## Credit Limitations

All courses countable for graduate degree credit must be either specifically graduate degree courses (200 or 300 level) or, where allowable, advanced

undergraduate courses (100 level). NO coursework under the 100 level may be used for graduate credit. In those departments where courses are shown double-listed (e.g. BIOL 147/BIOL 247), graduate students ordinarily register for graduate credit (e.g. BIOL 247). If attending the undergraduate section, graduate students are required to perform extra work at the graduate level beyond that required for undergraduates.

No more than 12 units (16 units for student teachers), no matter when they are earned, can be transferred from an "Unclassified" transcript into a graduate program.

Courses not applicable in graduate degrees:

- Lower division undergraduate courses (001-099)
- Courses in which a grade of C- or lower were received. Courses that receive a C- or lower must be repeated
- Extension courses
- English courses for the improvement of English language skills of foreign students'
- Directed teaching or prerequisite courses for directed teaching except for the Master of Education degree or the Master of Arts in Special Education degree.
- Physical education activity courses.

## Double-Listed Courses

In order to differentiate graduate and undergraduate responsibilities in double-listed courses (100/200 levels), there must be specifically contracted additional work for the graduate courses.

## Grade Point Average/Grading Policy

The Pacific grade point average is determined by adding the total 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 are considered in the grade point average.

Students must maintain a minimum GPA of 3.0 or above in all work taken as a graduate student at the University of the Pacific. A student at the graduate level may receive only 2 C grades during their work towards a degree. Grades below a C are unacceptable for courses in a graduate program. (See Academic Standing in section above).

Letter grades are ordinarily assigned in graduate courses. Requests for pass/fail grading must be made through the department chair to the Dean of Research and Graduate Studies.

Graduate students must receive a letter grade in any undergraduate course which is part of a course plan for a graduate degree. Petition for exception to this regulation must be approved by the Graduate Dean upon recommendation by the student's advisor.

## Grading Policies

### Symbols and Definitions

Graduate students are assigned grades in keeping with the following provisions.

| Symbc | GPA | Definition     |
|-------|-----|----------------|
| A     | 4.0 | Exemplary      |
| A-    | 3.7 |                |
| B+    | 3.3 |                |
| B     | 3.0 | Satisfactory   |
| B-    | 2.7 |                |
| C+    | 2.3 |                |
| C     | 2.0 | Marginal       |
| C-    | 1.7 |                |
| D+    | 1.3 |                |
| D     | 1.0 | Unsatisfactory |

|   |     |  |
|---|-----|--|
| F | 0.0 | Failing  |
| 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, and c) A time indicated for completion within by 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 is imposed with failure to complete the work. All incompletes must be made up before graduation if the student intends to complete the course. Petitions to extend must be approved by the Graduate Dean in consultation with the student's committee or advisor.

| Symbc | GPA | Definition   |
|-------|-----|--|
| N     |     | Deferred grading for thesis, dissertation or research work.  |
| NC    |     | No credit recognition. Represents unsatisfactory work under pass/no credit option.   |
| NG    |     | No Grade Received from the Instructor. Please contact the instructor.  |
| P     |     | Passing work on the pass/no credit system. Approved only for certain courses and program of a college or school. Note: Research for thesis or dissertation the department may determine whether letter grades or pass/no credit grades are to be given. In seminar or comparable courses, letter grades or pass/no credit may be used. |
| W     |     | Authorized withdrawal from courses after the prescribed period.  |

## Repeating of Courses and Grade Replacement Policy

For courses in which the grade earned is C- or lower, the units are counted in a student's degree program, and -- if required for the degree -- must be repeated. Some departments or programs have established higher grading standards which must be met by students in those programs. All grades earned in courses taken as a graduate student at the University are counted in the cumulative GPA.

Only courses with grades of "C-" or lower can be repeated. Once a course is completed with a grade of C or higher, the graduate student cannot repeat that course or any prerequisites for the course. When a course is repeated, grades from both the original and repeated attempts appear in the official records and transcripts. A course can only be repeated once. Grades are averaged when courses are repeated; thus, the Pacific grade point average does reflect the two grades averaged.

## Acquisition of Graduate Credit as an Undergraduate

Undergraduates can open a graduate transcript (i.e., receive credit in graduate-level courses while an undergraduate) if they meet all of the following conditions. The undergraduate student must:

- be within 9 units of completing the baccalaureate degree.
- be in the last two semesters of the baccalaureate degree at University of the Pacific.
- submit the completed *Evaluation of Degree Requirements* form to the Registrar's Office prior to the last day to add classes. This must be submitted before or with the Graduate Credit as Undergraduate petition. (This serves as permission by the undergraduate advisor for the student to take graduate-level coursework.

- be admitted into the Graduate School in a graduate or credential program and receive approval of the *Application to Receive Graduate Credit as an Undergraduate Student* by the Dean of the Graduate School before the last day to add classes of the last semester as an undergraduate.

Additional regulations for receiving graduate credit as an undergraduate are as follows:

- Coursework will not count for graduate credit if the student fails to complete the baccalaureate degree by the second semester of taking graduate credit
- The total number of graduate credits for the semester cannot exceed the maximum *graduate* course load of the department providing graduate coursework. This includes coursework taken at other schools.
- Graduate credit will only be granted for upper division (100 numbered) courses.
- The tuition rate for the entire semester is at the undergraduate rate.
- Units cannot be retroactively transferred from an undergraduate to a graduate program. (The approval must be obtained prior to the beginning of the last day to add classes of the last semester.)
- Graduate courses completed under this agreement will not be recorded by the Registrar as graduate coursework until the baccalaureate degree has been completed and matriculation into the graduate program has commenced. Grades from these courses will not be counted in the undergraduate grade point average (*unless the baccalaureate degree is not completed*).
- No more than 12 units (16 units for student teachers), no matter when they are earned, can be transferred from an undergraduate transcript into a graduate degree program.
- Students who do not complete the baccalaureate degree by the second semester when graduate courses are taken will not be admitted into the Graduate School and cannot take additional graduate course work until the baccalaureate degree has been awarded.
- There is no guarantee that graduate units earned as an undergraduate will transfer to or be counted as post-baccalaureate units by other universities or school districts.
- Students are not classified as graduate students until they register for courses and complete a term that begins after receiving the baccalaureate degree.
- Undergraduate students cannot register in graduate-only courses (numbered 200 and above) unless this petition is approved by the Graduate School **prior** to registration or other arrangements have been approved in writing by the Graduate Dean.

## Transfer Credit

Work done in other regionally accredited institutions of higher education since completion of the baccalaureate is considered and evaluated, but not more than 6 of the required units may be transferred, and they must be regular on-campus advanced courses, countable by that institution toward its graduate degrees, and have been completed with a grade of B- or better. Some departments set higher standards and these are identified in individual program descriptions.

Grade points earned in those courses are not counted in the student's Pacific grade point average.

Courses must be filed on the Request to Transfer Course Work Done In Other Institutions form and must be approved by the Department Chair/ Advisor, Director of Graduate Programs or Dean of the attending school, and the Dean of Research and Graduate Studies.

## Unclassified Graduate Students

Graduate Unclassified students may complete up to 12 units (16 units for student teachers) prior to being required to formally apply for admission to the university. Upon acceptance to the university, resident and transfer coursework are evaluated by school/department for applicability to degree.

## 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.

All students must register on the dates published. No registration activity is permitted after the last day to add or drop. Students are held accountable to complete every course for which they register. If it is necessary to add or drop a course, the student must complete the appropriate registration transaction by the last day such activity is allowed as published in the University Calendar.

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 appear on the student's transcript with the notation "W" but do not count in the units earned or in the calculation of the grade point average.

Any petitions approved after the deadline dates are subject to a clerical service fee. Tuition and fee refunds are based on the date a withdraw form is initiated in the Office of the Registrar.

## Continuous Registration

All graduate students in graduate degree or credential programs must satisfy the Continuous Registration Policy for each of the school terms defined for the student's program from admission into the Graduate School until all degree requirements are met or their status as a degree or credential student is terminated. This includes students who are completing preliminary or final examinations, or presenting terminal projects; and applies to students regardless of location. If degree or credential requirements are completed between terms, the student must have been registered during the preceding term.

Continuous registration is intended for students who have completed all of their required coursework. The Continuous Registration Policy can be met by registering for GRAD 200 (through Inside Pacific) at least one semester per academic year (Fall or Spring, except for MAIR students who must register for either Spring or Summer).

There is no limit to the number of times a student can sign up for GRAD 200; however, Pacific's years-to-degree policy must be met.

Students enrolled in may utilize library facilities, but are not entitled to: 1.) the use of other University facilities; 2.) receive a fellowship, assistantship, or financial aid; or, 3.) take course work of any kind at the University of the Pacific.

### Failure to Meet Continuous Registration Requirements

A graduate student who fails to meet the continuous registration requirements and has a break in registration will be inactivated by Graduate Studies. Students in good academic standing who were inactivated from a program may petition for reinstatement by the program and Graduate Studies by submitting a \$50 reinstatement fee and the Petition for Reinstatement in the Graduate School by the posted deadlines.

After 12 months or more of being inactivated, students who wish to re-enter a program must complete an entirely new application process with the appropriate fees and documentation. A decision to readmit a former student are to include a statement by the admitting degree program of which courses previously taken can be applied to the new program of study.

## Registration - Individualized Study

To register for an Individualized Study (Independent Study course, Internships, or Practicum) obtain and submit an approved Individualized

Study Request form to the Office of the Registrar. Students and faculty complete a written contract that specifies the nature of the work to be undertaken and the method of evaluation. The individualized study form must have proper approval within the unit and be filed with the Office of the Registrar. Independent study courses may not be taken in the same term that a regular course is offered in that subject.

## Requirements for the Master's degree

1. The requirements of a candidate for these degrees in any semester or summer session must be approved by the chair of the major department as to courses and amount of load.
2. The candidate must maintain a minimum GPA of 3.0 or above in all work taken as a graduate student, either at the University of the Pacific or any other institution. See the Grading Policy section and or Academic Standing.
3. Satisfactory completion of a minimum of 30 or 32 units of (graduate) work, depending on requirements of program.
4. The completion of a minimum of one academic year of "residence work": i.e., the candidate must be registered for at least 4 units per semester for two semesters. Two summer sessions of at least 4 units each will be considered the equivalent of one-half year of residence.
5. The passing of a department examination that covers the major field (date to be fixed by department chair) where applicable.

(See department section for more information).

## Requirements for the Doctor of Education Degree

1. There must be the equivalent of at least three years of successful graduate study in accredited colleges and universities, including at least two full years of work at the University.
2. Students must fulfill the doctoral residency requirement. Advancement to Doctoral Candidacy, for students admitted after Spring 2008, is dependent upon full admission to the EdD program, satisfactory completion of a specific program of study, and successful completion of Applied Inquiry III.
3. Approval of the dissertation, which includes a final oral examination to determine to the satisfaction of the candidate's committee whether the stage of scholarly advancement and research ability demanded for final recommendation for the doctorate has been reached.
4. All requirements for the Doctor of Education degree must be completed within five years from the date of advancement to Doctoral Candidacy and within nine years after the first day of the semester of enrollment in EdD coursework at Pacific following Provisional Admission to the EdD program.

Advanced students interested in applying for the Doctor of Education program should consult the department chair of the proposed major.

(See department section for more information).

## Requirements for the Doctor of Philosophy Degree

**Course of Study:** The course of study to be pursued for the PhD degree is arranged with students by their advisor. Work in other departments is planned according to the needs of the individual student. See department section for further information.

**Grade Point Average:** Expected to complete work with at least a 3.0 GPA in all courses. Students judged by their major department to have unsatisfactory records are reviewed by the Dean of Research and Graduate Studies who may take action to terminate their continuation.

**Mastery of the field of study:** Students must show competence in their discipline by means of qualifying examinations or scholarly papers before advancement to candidacy for the degree (requirements vary by degree program at least one year prior to the date on which degree candidates expect to present themselves for the degree).

**Compliance with language research skill requirements:** Students must demonstrate their ability to read at least one foreign language and/or to use at least one research skill such as an advanced computer language or advanced statistical analysis. The language and/or skill(s) are chosen with the approval of the student's advisory committee. For the specific language requirements in chemistry and pharmaceutical sciences see the appropriate sections of this catalog.

**Admission to Candidacy:** Students when they have completed satisfactorily the following requirements: at least 45 credit hours or course equivalents beyond the bachelor's degree; satisfied the language/research skills requirement; completed the qualifying examinations or scholarly papers; and received formal approval for admission to candidacy by the student's advisory committee and major department.

**Presentation of an acceptable Dissertation:** In order to be acceptable, the doctoral dissertation must be (1) a significant contribution to the advancement of knowledge or (2) a work of original and primary research.

**Passing of a final oral examination:** When the dissertation is completed, candidates present themselves for the final examination to an examining committee appointed by the Dean of Research and Graduate Studies and consists of the candidate's advisor (who shall act as chair) and such other examiners as the Dean shall designate, after consulting with the candidate's advisor. The committee does include at least one person who is not a member of the department directly concerned.

The examination is oral and deals intensively with the field of specialization in which the candidate's dissertation falls, though it need not be confined to the subject matter of the dissertation. In order to be considered satisfactory, the report of the examining committee must be unanimously favorable.

(See department section for more information).

## Residence and Time Limits

The period of residence involves students in a total commitment to their graduate program.

Completion of a minimum of one academic year of "residence work": i.e., the candidate must be registered for at least 4 units per semester for two semesters. Two summer sessions of at least 4 units each are considered the equivalent of one-half year of residence.

All requirements for a master's degree must be completed within a period of not more than seven years. Students who fail to meet all requirements within this period have to reapply to the program.

All requirements for the Doctor of Education degree must be completed within five years from the date of advancement to Doctoral Candidacy and within nine years after the first day of the semester of enrollment in EdD coursework at Pacific following Provisional Admission to the EdD program.

All requirements for the PhD degree must be completed within seven years from the date of entrance into the degree program at this University, and within three years from the date of advancement to candidacy.

A student who works for the PhD degree is required to spend at least three years of work devoted only to graduate study and investigation under proper supervision—or the equivalent thereof in part-time work—for the completion of the residence requirement. If part-time work is done elsewhere other than at the University of the Pacific, such work is subject to the approval of the Committee on Graduate Studies. At least 30 units, in addition to the dissertation, must be completed at this University.

In the PhD program in Pharmaceutical and Chemical Sciences, two consecutive semesters of residence are required after the master's degree or after one year of graduate work when the master's degree is not taken. A minimum of 9 units or two courses of work must be taken during each semester of residence. In the PhD program in School Psychology, the residency requirements can be met by taking 18 units of coursework within 12 calendar months.

Courses taken ten or more years prior to the comprehensive examination (PhD program), Qualifying Scholarly Activity (EdD programs), or final

examination (Masters Programs) do not apply towards the graduate degree and must be repeated to satisfy the degree requirements. Requests for variances are made to and evaluated by the major department, which subsequently recommends to the Office of Graduate Studies what credit for previous coursework should be permitted. Final approval is granted by the Dean of Research and Graduate Studies.

To readmit to a program, a student must have attained an average grade of 3.0 both in the major department and in all work taken as a graduate student. A student must submit a readmit application and be accepted into a Graduate program and work with their current advisor to outline remaining requirements. This new program must be completed within a period of four years. No further extension is permitted.

### Thesis or Dissertation Committee

This section outlines the general Graduate School requirements for thesis or dissertation committees. Units and colleges may adopt additional program-specific criteria and guidelines.

**Thesis or dissertation chair:** Faculty must hold a degree equivalent to the degree being sought or have demonstrated expertise to serve as a thesis or dissertation chair. Faculty members without supervisory experience must serve for at least one year as a co-chair with an experienced advisor before they may be recommended to independently supervise thesis or dissertation research. Exceptions to this policy must be approved by the college or school dean.

**Thesis or dissertation committee:** The Thesis or Dissertation Committee is composed of a Chair and a minimum of 1 (thesis) or 2 (dissertation) other committee members. The number of committee members depends on the degree objective. All members of the committee must hold degrees equivalent to the degree being sought or have demonstrated expertise. The committee member(s) may be selected from within the student's school or college, from another school or college, or from another institution or organization with recognized expertise in the field or industry.

It is recommended that the committee be formed after a student selects a chair for his/her research and the faculty member agrees to chair. The student, in consultation with the chair, is responsible for contacting potential members of the committee, inviting members to serve, and completing the Masters' Thesis Committee form or the Doctoral Dissertation Committee form. Upon the approval of thesis or dissertation advisor, department chair, and college or school dean, the form will be forwarded to the Dean of Research and Graduate Studies for official appointment of the committee members.

The responsibilities of the thesis or dissertation committee members are:

- 1) Providing the student with guidance in his/her thesis or dissertation research, and
- 2) Monitoring the student's research progress of his/her thesis or dissertation research.

In order to fulfill the above responsibilities, the committee may hold at least one meeting prior to a thesis or dissertation defense for the thesis or dissertation proposal presentation. Subsequent meeting(s) may be held for progress reports.

## Theses and Dissertations

The Office of Graduate Studies makes available to faculty and graduate degree candidates instructions for the preparation of theses and dissertations. The instructions are to be applied to all theses and dissertations submitted at University of the Pacific in partial fulfillment of advanced degree requirements. Theses and dissertations must be submitted by the deadline dates published in the Graduate Academic calendar.

These courses are numbered 299 (Master's Thesis) and 399 (Dissertation), the grade is given on a Pass/No Credit basis and is

submitted to the Dean of Research and Graduate Studies on an appropriate grade form available on the Graduate Studies web page. The Dean of Research and Graduate Studies submits the grade to the Registrar's Office after final approval of the thesis.

## Commencement

Master's degree students who are near completion of degree requirements can participate in the May commencement exercises under specific conditions. All of the following four conditions must be met before the Dean of Research and Graduate Studies can approve the petition.

- A completed Petition to Participate in Graduation Ceremonies has been filed in the Office of Graduate Studies by the Spring semester deadline\* for filing the Application for Graduation form. This petition must be signed by the student's Advisor and Academic Dean (or Graduate Program Director if appropriate).
- All degree requirements will be met before the end of the summer session of the same year. An approved plan of study that specifies all degree requirements will be completed in time and must be on file in the Office of Graduate Studies before the Spring semester deadline for filing the Application for Graduation form.\*
- The Masters degree oral examination which includes thesis defense or written examination (where applicable), will be successfully completed by the Spring semester deadline for Written/Oral Exam — Thesis/ Dissertation Defense.\*\*
- The student is in good academic standing. On a case-by-case basis, special consideration is given for international students who complete degree requirements after the Fall semester of the same calendar year. Approved CAPP Evaluations must be on file by the Spring semester deadline\* and the student must state they are unable to return to campus to participate in ceremonies in the Spring following degree completion.

Doctoral degree students are ineligible to participate in graduation ceremonies until all degree requirements are met that includes all coursework, the final dissertation has been approved by the Office of Graduate Studies and all final paperwork has been submitted.

\* This deadline is customarily December 1, but the Office of Graduate Studies or current Academic Calendar should be consulted to confirm the specific date.

\*\* This deadline is customarily in early April, but the Office of Graduate Studies or current Academic Calendar should be consulted to confirm the specific date.

## Withdrawal from a Semester or the University

Students who intend to completely withdraw from a semester or from the university have to initiate the process in the Office of the Registrar. The withdrawal date used by Financial Aid for Return in the return of Title IV Aid calculation and the effective date used by Student Accounts for tuition refunds are based on the date of your notification to the Office of the Registrar. If a student intends to withdraw from a semester after the last day to withdraw, it must be approved by the Academic Regulations Committee. Courses the student was registered for after the last day to drop appear on that student's transcript with the notation "W" but do not count in the units earned or in the calculation of the grade point average. If a student only withdraws from a semester, he/she has one more semester to keep his/her continuing active status. If the student has completely withdrawn from the University, he/she must submit a new application for admission, and file a request for Petition for Reinstatement Form (with a \$50 fee) available on the Office of Graduate Studies web site. The deadline is August 1st for Fall admission or December 1st for Spring admissions.

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

## Campus and Community

The main campus of University of the Pacific, located near the center of Stockton, has grown from the original 40 acres of the Harriet M. Smith Memorial Campus to a total of 175 acres.

In 1974, the University acquired 42 acres of land adjoining the campus, that include nine permanent classroom buildings formerly the property of San Joaquin Delta Community College.

McCaffrey Center was also completed in 1974. It contains student apartments and serves as one anchor of the Student Life neighborhood by housing student government, the Career Resource Center, SUCCESS, CIP, Housing and Greek Life, and the Educational Resource Center. Directly across the lawn is the LEED certified DeRosa University Center which opened its doors in the fall of 2009. The DeRosa Center is the hub of campus dining and includes the Marketplace, the Calaveras Coffee Company, and the Lair. Located north of the Calaveras River which runs through the campus are the Cowell Wellness Center, housing Pacific Health Services and Counseling and Psychological Services (CAPS), and the Thomas J. Long School of Pharmacy and Health Sciences complex, which also houses the entry level graduate program in physical therapy.

Pacific's San Francisco campus offers a dental program consistently ranked as one of the best in the nation. The University's McGeorge School of Law is situated in Sacramento and offers both day and evening programs.

The William Knox Holt Memorial Library is the main library at Pacific. Many library sources can be accessed Online. The Holt-Atherton Department of Special Collections includes the Stuart Library of Western Americana and the University Archives. About 75 percent of the writings of naturalist John Muir are included in the collections, which also provide extensive information and photographs for research of the California Gold Country and the Gold Rush. The W.J.B. Fry Library is a collection of historical materials that pertain to the United Methodist Church and its commitment to higher education.

The Science Library is located in the Thomas J. Long School of Pharmacy and Health Sciences building with materials in chemistry, health sciences and pharmacy. The Music Library in Irving Martin Memorial holds sound recordings, slides, films, video tapes, laser discs and an extensive collection of folk dance music. Pacific is also home to a number of special programs that include the Brubeck Institute which houses the collection of Jazz Legend Dave Brubeck, the Muir Institute which holds the papers of naturalist and Sierra Club Founder John Muir, and as of the summer of 2002, the Jacoby Center which focuses on urban studies.

Stockton is the center of a metropolitan area of more than 230,000 population located near the geographical center of the state. It occupies a key location in the rich Central Valley, a fertile agricultural area. Stockton is the seat of government of San Joaquin County. It is also an inland, deep-water seaport and serves as the agricultural, industrial and transportation hub of the valley. Produce and manufactured goods are distributed from this port to all parts of the world.

The Mother Lode country, the Sierra Nevada, Lake Tahoe, Squaw Valley and Yosemite are all within a few hours' driving distance. San Francisco and the rich and varied cultural life of the Bay Area are less than a two-hour drive from the campus.

Within its own community the University benefits from participation in the activities of the Stockton Symphony Orchestra, the Stockton Opera Association, the Stockton Chorale, the Civic Theatre, the Pioneer Museum and Haggin Galleries, and the Stockton Public Library.

## Campus Security

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](http://www.pacific.edu).

## Campus Safety and Security Report

University of the Pacific publishes an Annual Safety and Security Report for the Stockton campus that includes statistics concerning reported crimes that occurred on and around the Stockton campus for the previous three years. The Report specifically identifies statistics for crimes that occurred on campus, in certain off-campus buildings owned or controlled by the University and on public property within, or immediately adjacent to and accessible from the campus.

The Report also includes institutional policies and procedures related to campus safety and security. The Report provides information on the University of the Pacific's policies concerning alcohol and drug use, sexual assault and fire safety, including fire statistics. Additionally, the Report outlines University procedures for reporting crimes, providing emergency response, emergency evacuations and emergency notifications.

The report is available on-line at:

<http://web.pacific.edu/Documents/student-life/publicsafety/public-safety-brochure.pdf>.

You may also contact the Department of Public Safety to obtain a hard copy of the report

Information on registered sex offenders is available on-line at <http://www.meganslaw.ca.gov>. or from the Stockton Police Department located at 22 E. Market Street.

## Services for Students with Disabilities

### Office of Services for Students with Disabilities in the Division of Student Life

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 reasonably accommodates 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 student or applicant with a disability is a person who:

1. has a learning, physical or psychological impairment which limits one or more major life activities (such as walking, seeing, speaking, learning, or working); or
2. 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 considers the merits of each request at the time it is received. Upon receiving a request for assistance as well as appropriate documentation, the Director 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

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, Director  
Office of Services for Students with Disabilities  
McCaffrey Center, Room 137  
Phone: (209) 946-2879  
E-mail: [dnuss@pacific.edu](mailto:dnuss@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/disabilities>

## Services for Students with Disabilities Faculty Student Housing

The University provides student housing in residence halls, apartments, and Greek houses. Detailed descriptions of these facilities, including cost are available from Housing and Greek Life Office at (209) 946-2331 or [iamhome@pacific.edu](mailto:iamhome@pacific.edu). Housing is guaranteed for freshmen and sophomores only. Upper-division and Graduate students are considered on space availability.

### Residence Halls

A majority of the rooms are double occupancy and are reserved for incoming freshmen and sophomore students. A limited number of single rooms are available to students at extra cost; medical documentation is required for placement. Assignment requests to single rooms and other accommodations are not guaranteed.

Students who live in the residence halls are required to take one of the three meal options: the Platinum level plan (4,311 Dining Dollars per year), the Gold level plan (4,032 Dining Dollars per year), or the Silver level plan (3,698 Dining Dollars per year). Dining points are subject to change.

### Apartments

The University maintains five apartment complexes. All students who live in the apartments must be on a Bronze level meal plan (1,343 Dining Dollars per year). Apartment residents also have the option to purchase a Copper level meal plan (2,700 Dining Dollars per year).



The **University Townhouses** on the north campus have one-and two-bedroom apartments for students. The University's newest apartment complexes, known as **Monagan and Brookside Halls**, are located on Brookside Road, between the Thomas J. Long School of Pharmacy and Health Sciences and the Cowell Health Center building. Each suite features four bedrooms, two full baths, living room and dining/kitchen area. Seniority for assignment to Brookside Hall is given to graduate level students and students in the Pharmacy and Health Sciences. The **McCaffrey Center** apartments are three bedroom, one-bath units which are located at the center of campus. The furnished three-person apartments are reserved for juniors and seniors. The McCaffrey Center complex is the hub of daily student activity such as the ASUOP student government offices, The Grove campus convenience store, and the Pacific Theatre. **Towerview** apartments are located on Dave Brubeck Way directly across from the library, and is made up of sixteen one and two-bedroom apartments. Priority for Towerview Apartments is given to students with spouse or domestic partners and students with one child three-years-old or younger. Towerview Apartment residents are responsible for payment and set-up of telephone service with the local provider.

The Housing and Greek Life Office also has a list of off-campus housing and apartment listings.

**Eligibility:** Graduate students desiring University housing must be registered students to be eligible. Student Housing Agreements for apartments are for the academic year. Housing for Graduate students is not guaranteed.

## Health Services

**Pacific Health Services and Counseling and Psychological Services (CAPS), which are part of the Division of Student Life at Pacific, are co-located in the Cowell Wellness Center. It is located across the foot bridge, north of the main campus, at the corner of Brookside Road and Manchester. Together, Pacific Health Services and CAPS provide a professional staff of practitioners which include a supervising physician, nurse practitioners, registered dietitian, licensed psychologists, marriage and family therapists, pre-doctoral psychology interns, and a consulting psychiatrist. Students are provided with health education and wellness information as well as health care during illness in order to promote the skills and attitudes necessary for students to become responsible for their own health.**

**Therapists specialize in working with the student population and are trained to assist students in building self-confidence, being assertive, relating to others, reducing stress, solving problems, finding options, and managing on-going psychological conditions. Personal counseling, both one-to-one and group, is available.**

**Due to the Privacy Act, staff does not routinely discuss student's care with anyone, including parents, unless the student has provided a written consent to release information. With consent, however, professional staff is available to address questions and concerns about students' health issues and treatment plans.**

The staff members of both Pacific Health Services and CAPS are active within the Student Life Division at Pacific and actively contribute to the goal of helping our students achieve academic and social success through attention to their health and wellness.

All Stockton students taking 8 units or more are automatically charged a Health Services fee of \$120 per semester.

Pacific Health Services are available to students who have:

1. Registered for classes at the Stockton Campus, Pacific McGeorge School of Law, and Dugoni School of Dentistry
2. Paid the Health Services Fee and
3. Submitted the required health history form and immunization record.

CAPS are available to students who have:

1. Registered for classes at the Stockton campus or Pacific McGeorge School of Law

2. Paid the Health Fee

Health Services Fee includes:

- Physician appointments
- Nurse Practitioner services
- Nutritionist services
- Health and wellness management
- Counseling appointments

Health Service Fees do not cover the cost of some procedures, medications, and outside referrals. Students are required to have health insurance. If students do not have insurance coverage a student plan is available through the University. The coverage period runs from August 1st to July 31st or students can choose to enroll on a semester-by-semester basis. Students can access information about the plan via the Internet: <http://www.pacific.edu/insuranceofficecall> Pacific Health Services (209) 946-2315 for assistance.

***Please note: Students are automatically charged for the university contracted insurance policy with Anthem Blue Cross unless they have completed the waiver. The link to the waiver is available through the Health Services website at <http://www.pacific.edu/insurancewaiver>***

# College of the Pacific

Rena Fraden, Dean  
Gregg Jongeward, Senior Associate Dean  
Gesine Gerhard, Associate Dean and Director of General Education  
Marcia Hernandez, Assistant Dean

## Programs Offered

### Master of Science in Biological Sciences

### Master of Arts in Communication

- Communication Education
- Communication Studies
- Political Communication
- Media and Public Relations

### Master of Arts in Psychology

### Master of Arts in Health, Exercise and Sport Sciences

- Sport Pedagogy
- Sports Medicine
- Sport Management
- Athletic Training

### Master of Science in Pharmaceutical and Chemical Sciences\*

### Doctor of Philosophy in Pharmaceutical and Chemical Sciences\*

\* For detailed program requirements for these degrees please consult the School of Pharmacy section in this catalogue.

The hallmark of all of our graduate programs in College of the Pacific is close personal interactions with dedicated faculty members who have a passion for teaching, research, and learning. For graduate students, this means discussion-based, personalized interactions with instructors in the classroom as well as opportunities to collaborate with faculty on original research projects and to co-author or co-present the results in professional venues. Graduate students in the College also have the opportunity to acquire additional training and apply their knowledge through internships in professional settings. Many also work with our undergraduates as teaching assistants, laboratory instructors, discussion leaders, and coaches. All graduates of our programs emerge "practice-ready," prepared for employment in their field, careers as teachers of their disciplines, or entry into advanced degree programs.

## College of the Pacific Faculty

### Biological Sciences Courses

#### **BIOL 101. Genetics. 4 Units.**

Emphasis of study is heritable variations and their relation to structure, behavior and function of genetic material. This basic course is for students concentrating on biological sciences, medical sciences and liberal arts. In addition to lecture, one-three hour laboratory per week is required. Prerequisites: BIOL 051 and BIOL 061. Recommended: Sophomore standing.

#### **BIOL 111. Anatomy and Physiology. 4 Units.**

This lecture and laboratory course covers the structure and function of the major physiological systems of the human body, and it is intended primarily for students in the Dental Hygiene program. Students taking BIOL 111 do not receive credit for either BIOL 071 or BIOL 081. Prerequisites: BIOL 051 and BIOL 061.

#### **BIOL 122. Principles of Immunology. 4 Units.**

The fundamental properties of antigens and antibodies are covered with an emphasis on the theories of antibody production, tolerance, transplantation immunity, autoimmunity and tumor immunology. Prerequisites: BIOL 101 and CHEM 121.

#### **BIOL 124. Cancer Biology. 4 Units.**

The course examines the morphological and molecular events that accompany the changes of a normal mammalian cell into a cancer cell, with an emphasis on the major pathways that affect cell growth and division, cell communication, cell death and metastasis.

#### **BIOL 126. Neurobiology. 4 Units.**

This course focuses on the molecular and cell biology of neuronal function and development, and how neurons work together to retrieve and process information and respond accordingly, with thorough discussions of sensory and motor systems and a brief review of more complex brain functions, such as emotions, speech and language, and memory. Prerequisites: BIOL 051 and BIOL 061.

#### **BIOL 128. Histology. 4 Units.**

A study of the tissues which comprise the organs of the body is the focus. This course is limited to human tissues. Thin sections of organs will be studied and their structure related to function. Credit only given once for BIOL 128 or BIOL 129. Prerequisites: BIOL 051 and BIOL 061.

#### **BIOL 129. Histology Online. 3 Units.**

This is a non-lab, online version of BIOL 128. Credit is only given once for BIOL 128 or BIOL 129. Prerequisites: BIOL 051 and BIOL 061. Recommended: BIOL 101.

#### **BIOL 130. Plant Kingdom. 4 Units.**

Through lectures, laboratories and field trips, students are introduced to the morphology, reproduction biology and environmental requirements of all major groups of plants. Included are material bearing on the evolutionary relationships within and between each major group. Individual projects are required. Prerequisites: BIOL 051 and BIOL 061.

#### **BIOL 134. Comparative Physiology. 4 Units.**

This course is a detailed review of organ function in diverse groups of organisms. Emphasis is on physiological adaptation to the environment. Prerequisites: BIOL 051 and BIOL 061.

#### **BIOL 145. Microbiology. 4 Units.**

The biology of microorganisms is studied with emphasis on viruses, bacteria, fungi and protozoa. In addition to lecture, one three-hour laboratory per week is required. Prerequisites: BIOL 051, BIOL 061; CHEM 025, CHEM 027.

#### **BIOL 146. Industrial Microbiology. 4 Units.**

An in-depth knowledge of the industrial applications of microorganisms. The course uses an understanding of microbial physiology and genetics to illustrate how these organisms are utilized to create commercial products ranging from medicines to food products. Prerequisite: BIOL 145.

#### **BIOL 147. Medical Microbiology. 4 Units.**

Medical microbiology covers a survey of microorganisms implicated in human disease; emphasis on characteristics and properties of microorganisms, chiefly bacteria and fungi which are 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 with a C- or higher or permission of instructor.

#### **BIOL 151. Parasitology. 4 Units.**

Principles of parasitism as well as biology of animal parasites with special emphasis on the protozoa, platyhelminths, nematodes, acanthocephala and arthropods are studied. Techniques of recovery of parasites from various vertebrate hosts are introduced including staining, mounting and identification. Prerequisites: BIOL 051, BIOL 061, BIOL 101.

#### **BIOL 153. Cell Biology. 4 Units.**

Cell Biology studies 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 051, BIOL 061, BIOL 101, CHEM 025 and CHEM 027. Recommended: Organic chemistry.

**BIOL 155. Biological Electron Microscopy. 4 Units.**

The process 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 performs an original experiment as a term project. Prerequisites: BIOL 051, BIOL 061, CHEM 025, CHEM 027. Recommended: BIOL 101.

**BIOL 157. Topics in Biomedical Research. 4 Units.**

Basic research in the areas of cell biology, biochemistry, molecular biology and physiology are examined in their applications to current problems in medicine. Topics covered include genetic engineering, gene therapy, transplants and cloning. Prerequisites: BIOL 051, BIOL 061, BIOL 101; CHEM 121.

**BIOL 158. Computerized Data Acquisition. 4 Units.**

This lecture and laboratory course introduces students to experimental design and protocol. Students are 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 ends with a symposium-style presentation of each team's experiments and results. Prerequisites: BIOL 051 and BIOL 061.

**BIOL 159. Molecular Biological Techniques. 4 Units.**

This advanced laboratory course in the methods of molecular biology, has an 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 with a "C-" or higher.

**BIOL 162. Comparative Vertebrate Anatomy. 5 Units.**

The evolution of vertebrate organ systems as revealed by comparative morphology are emphasized. Prerequisites: BIOL 051 and BIOL 061. Recommended: BIOL 101.

**BIOL 165. Embryology and Development. 4 Units.**

This laboratory course focuses on the events that occur as a single-celled embryo develops into an adult organism. Developmental processes are studied at the descriptive and mechanistic levels, leading to an understanding of how and why complex structures are produced. Major emphases is placed on animal embryology (both vertebrate and invertebrate) leading to the production to tissues, organs and organ systems. Later developmental processes also are studied, as well as sex determination. Additional topics include cancer and evolution as seen in the context of development. Prerequisites: BIOL 051, BIOL 061, BIOL 101.

**BIOL 169. Elements of Biochemistry. 4 Units.**

The field of biochemistry is the focus in this non-lab course that 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 is discussed. This course does not count for the Biochemistry major. Prerequisites: BIOL 051, BIOL 061, BIOL 101, CHEM 123 with a "C-" or higher.

**BIOL 171. Methods in Field Biology. 4 Units.**

A course focused on methods of biological investigation with emphasis on modern field sampling techniques and instrumentation. Students are trained in experimental design and quantitative data analysis used to address a range of biological questions. Prerequisites: BIOL 051 and BIOL 061 with a "D" or better.

**BIOL 175. Ecology. 4 Units.**

The structure and dynamics of populations, biotic communities and ecosystems, is emphasized with particular focus upon relationships of organisms to their environments. In addition to lecture, one three-hour laboratory per week is required. Prerequisites: BIOL 051 and BIOL 061.

**BIOL 176. Ecology and Conservation Biology. 4 Units.**

The principles of ecology are introduced with attention to consider threats and disruptions to ecological systems from the level of local populations through ecosystems, landscapes, and global processes. Ecological principles are used to help understand these systems, to make predictions for the future or for other systems, and to evaluate possible solutions. The class considers the importance of economic and demographic forces in causing conservation problems and in shaping conservation strategies, and students practice planning conservation areas. Prerequisite: BIOL 051.

**BIOL 177. Natural Medicines. 4 Units.**

A lab course that surveys drugs found in nature, in particular their history, uses, and mode of action, and is designed as a preparation for students who will attend a Pharmacy or Dental School. Topics include history of medicine, survey of natural compounds relevant to pharmacology, and survey of naturally-derived drugs used to treat cancer, heart disease, and neurological disorders. Prerequisites: BIOL 051, BIOL 061, BIOL 101, CHEM 123 with a "C-" or higher.

**BIOL 179. Evolution. 4 Units.**

Lectures and readings on the mechanisms of evolutionary change in organisms are the focus. Prerequisites: BIOL 051 and BIOL 061. Recommended: BIOL 101.

**BIOL 182. Medical Endocrinology. 4 Units.**

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 051, BIOL 061, BIOL 101; CHEM 025 and CHEM 027. Recommended: BIOL 071 and BIOL 081.

**BIOL 185. Comparative Animal Behavior. 4 Units.**

The ecology and evolution of animal behavior are discussed. Laboratory involves a quantitative study of animal behavior at Micke Grove Zoo. Prerequisites: BIOL 051 and BIOL 061. Junior standing in Biological Sciences or Psychology.

**BIOL 186. Hormones and Behavior. 4 Units.**

This lecture/discussion course focuses 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 051, BIOL 061, BIOL 101.

**BIOL 191. Independent Study. 2-4 Units.****BIOL 197. Undergraduate Research. 1-4 Units.****BIOL 222. Immunology. 4 Units.**

Students study immunoglobulin structure, function, and expression in animals. Molecular and cellular mechanisms of humoral immune response, cell-mediated immunity, complement system, autoimmune diseases, tolerance induction, transplantations, cancer immunity, vaccines, and cytokine actions are also emphasized. Graduate standing.

**BIOL 224. Cancer Biology. 4 Units.**

The course examines the morphological and molecular events that accompany the change of a normal mammalian cell into a cancer cell, with an emphasis on the major pathways that affect cell growth and division, cell communication, cell death and metastasis.

**BIOL 226. Neurobiology. 4 Units.**

The course focuses on the molecular and cell biology of neuronal function and development, and how neurons work together to retrieve and process information and respond accordingly. It involves thorough discussions of sensory and motor systems and a brief review of more complex brain functions, such as emotions, speech and language, and memory.

**BIOL 234. Comparative Physiology. 4 Units.**

This course offers a detailed review of organ function in diverse groups of organisms. Emphasis is on physiological adaptation to the environment. Graduate standing.

**BIOL 244. Developmental Biology. 4 Units.**

Students examine the genetic control of development and the physiological mechanisms involved in fertilization and differentiation. Graduate standing.

**BIOL 246. Industrial Microbiology. 4 Units.**

An in-depth knowledge of the industrial applications of microorganisms. The course uses an understanding of microbial physiology and genetics to illustrate how these organisms are utilized to create commercial products ranging from medicines to food products. Prerequisite: BIOL 145.

**BIOL 247. Medical Microbiology. 4 Units.**

This course content is the same as BIOL 147 with three additional hours per week of seminar and/or special project. Graduate standing.

**BIOL 251. Parasitology. 4 Units.**

This course content is the same as BIOL 151. Principles of parasitism, biology of animal parasites with special emphasis on the protozoa, nematodes, helminths, acanthocephala, and arthropods are covered with three additional hours per week of seminar and/or special project. Graduate standing.

**BIOL 253. Cell Biology. 4 Units.**

This course content is the same as BIOL 153. Students take an in-depth look at the structure and function of a cell with an emphasis on the methodologies of Cell Biology. Research-based current understanding of the topics is stressed and a special project is required. Graduate standing.

**BIOL 255. Biological Electron Microscopy. 4 Units.**

This course content is the same as BIOL 155. The processes and techniques involved in examining biological specimens with the transmission electron microscope are covered in detail. When competence in specimen processing is achieved, each student performs an original experiment as a term project. Graduate standing.

**BIOL 259. Molecular Biological Techniques. 4 Units.**

This is 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. Graduate standing.

**BIOL 271. Methods in Field Biology. 4 Units.**

This is a course focused on methods of biological investigation with emphasis on modern field sampling techniques and instrumentation. Students are trained in experimental design and quantitative data analysis used to address a range of biological questions. Graduate standing.

**BIOL 279. Evolution. 4 Units.**

This course content is the same as BIOL 179 and a special project is required. Graduate standing.

**BIOL 291. Independent Study. 2 or 4 Units.****BIOL 295. Graduate Seminar. 4 Units.****BIOL 297. Graduate Research. 1-6 Units.****BIOL 299. Thesis. 2 or 4 Units.**

Communication Courses

**COMM 114. Argumentation and Advocacy. 4 Units.**

Students are introduced 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: COMM 027 or COMM 031 or COMM 043 or COMM 050, with a grade of C or higher.

**COMM 116. Rhetorical Theory and Criticism. 4 Units.**

The focus of this class is 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 117. Political Advocacy. 4 Units.**

This course teaches the principles of persuasion in political contexts in the U.S. (types and characteristics of political audiences, official and unofficial advocacy campaigns, media framing of political news & commentary) from historical and theoretical perspectives. The focus is to make students aware of the constraints and opportunities in policy arguments and their public dissemination.

**COMM 131. Media Production. 4 Units.**

Practical and theoretical application of audio and video production techniques are covered in this course with an emphasis on aesthetic qualities of sight and sound productions. Some work involves student media facilities. A Lab fee is required. Prerequisite: COMM 031 or permission of instructor.

**COMM 132. Writing for Media. 4 Units.**

Examination and production of electronic and print writing techniques are studied in this course with an emphasis on writing news, information, and entertainment messages for the electronic and print industries. Some work involves student media facilities. A lab fee is required. Prerequisite: COMM 031.

**COMM 133. Documentary Film as Persuasive Communication. 4 Units.**

This course is a survey of documentary film beginning at the turn of the century and continuing through contemporary productions from a historical and rhetorical perspective. Students explore documentary film's origins and trace out its development in relation to its use and reception as students become familiar with the history of the documentary, the evolution of the genre, its rhetorical construction and its cultural influences.

**COMM 134. Documentary Film Production. 4 Units.**

This course is a field video production course in documentary production. Through a series of assignments, lectures and screening students learn the basics of video production for documentary style productions. This includes research, management, pre-production, production and post-production processes. Students work primarily within groups to produce documentary projects using digital production equipment and techniques. There are no prerequisites for this course.

**COMM 135. Principles of Public Relations. 4 Units.**

Principles and methods of public relations are discussed and analyzed. Study of the mass media as publicity channels acquaints 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 031.

**COMM 137. Public Relations Case Studies and Problems. 4 Units.**

This is an advanced course in public relations. The course engages students in case study research and application of public relations principles. There is both written and oral presentations with adherence to professional standards of excellence. Prerequisite: COMM 135.

**COMM 139. Theory of Mass Communication. 4 Units.**

An overview of major theories and research in mass communication is presented. Application of theories that explain and predict communication effects of political campaigns, advertising, entertainment, and information are discussed. Theoretical areas that are covered include socialization, information, diffusion, advertising, persuasion, and uses and gratification's research in addition to the discussion of the state, function, and form of theory in mass communication. Prerequisite: COMM 160 or permission of instructor.

**COMM 140. Writing for Public Relations. 4 Units.**

Theory and practice in public relations writing in the context of publicity are emphasized. Students learn to write news releases, backgrounds, business letters and feature stories. Prerequisite: COMM 135.

**COMM 143. Intercultural Communication. 4 Units.**

This course analyzes the major variables affecting interpersonal communication between persons of different cultural backgrounds.

**COMM 145. Human Communication Theory. 4 Units.**

Contemporary understandings of human interaction are studied beginning with epistemological issues as a framework. The course examines theory building, foundation theories of our discipline, and contextual theories.

**COMM 147. Nonverbal Communication. 4 Units.**

Major dimensions of nonverbal behavior exhibited by human beings in social interactional contexts are examined with special emphasis given to such areas as human proxemics, kinesics, vocalics, haptics, and artifactual codes. Prerequisite: COMM 043 or permission of instructor.

**COMM 149. Introduction to Organizational Communication. 4 Units.**

Students are introduced to both a theoretical and an applied approach to the role of communication in various aspects of organizational functioning, such as motivation, leadership, decision-making, conflict management, message management, etc. Prerequisites: COMM 027 and COMM 043 or permission of instructor.

**COMM 150. The Capstone. 4 Units.**

This senior level capstone seminar devoted to expanding and applying communication course concepts that students have learned in the communication major and applying this knowledge to contemporary communication issues. Students undertake research projects and employ a variety of communication methodologies and theories to uncover the social, historical and ethical implications of their chosen communication interest. This course is designed to foster and promote communication competence, including analytic capacity, media literacy and ability to identify ethical issues in communication. Preparation for future professional work and development are explored. Senior standing.

**COMM 151. Community Based Learning. 2 Units.**

This senior-level capstone course provides students with a supervised learning experience in an off-campus, community-based organization. Students apply their knowledge of communication theories and skills to the needs of local organizations, which allows them to contribute to the public good. Senior Standing.

**COMM 152. Public Relations Administration. 4 Units.**

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 enhances critical skills of management for the understanding of public relations research, action/planning, communication and evaluation. Prerequisite: COMM 135. Prerequisite may be taken concurrently: COMM 137. Senior standing.

**COMM 155. Persuasion. 4 Units.**

This course is a survey of social psychological and communication approaches to social influence. Both past and contemporary theorizing is explored, and the methods of empirical research is discussed. Prerequisite: COMM 027 or permission of the instructor.

**COMM 160. Communication Research Methods. 4 Units.**

This course is 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 027, COMM 031, COMM 043 with a "C-" or better.

**COMM 187. Internship. 2-4 Units.**

Experiences in a work setting, are 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 087 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 087 course and a total of four in a COMM 187 course). Graded Pass/No credit.

**COMM 189. Practicum. 1-4 Units.**

This course is non-classroom experience in activities related to the curriculum under conditions that the appropriate faculty member determines. Students 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 089. Note: A student may not accumulate for credit more than eight units in any specific practicum. A total of four in a COMM 089 course and a total of four in a COMM 189 course). Prerequisite: COMM 089.

**COMM 189A. Advanced Print Practicum. 1-4 Units.****COMM 189B. Advanced Broadcast Practicum. 1-4 Units.****COMM 189C. Advanced Public Relations Practicum. 1-4 Units.****COMM 189D. Advanced Speech and Debate Practicum. 1-4 Units.****COMM 191. Independent Study. 2-4 Units.****COMM 197. Independent Research. 2-4 Units.****COMM 198B. Broadcast Practicum. 2-4 Units.****COMM 200. Communication and Consulting. 3 Units.**

This course explores topics related to the work of communication consultants. Through the course readings, presentations, workshops and other assigned work, students will acquire an understanding of the consulting process, including the role of the consultant, methods for undertaking a needs assessment, strategies for conducting training programs, and techniques for evaluating the work of consultants.

**COMM 201. Applied Public Relations. 3 Units.**

this course examines public relations strategies and tactics, as applicable to politics, non-profits and education. It will explore public affairs, public outreach and crisis management, and prepare students to communicate and utilize public relations with internal and external audiences.

**COMM 202. Public Communication Campaigns. 3 Units.**

The course is designed to provide a comprehensive overview of communication theory as it relates to attitudes and behavior changes involving public communication campaign issues. The course will also develop an understanding of the application of various quantitative and qualitative research methods to the design, execution, and evaluation of public communication campaigns.

**COMM 203. New Communication Technology. 3 Units.**

The course is designed to provide a comprehensive overview of a range of new communication technology and to give students basic skills and theoretical principles for their application to public communication through presentations, readings, videos placed on iTunes University and exercises. In addition, the course will enable students to identify, internalize and practice the necessary components of using new media technology for effective public communication.

**COMM 204. Media Relations: New Media World. 3 Units.**

The purpose of this course is to discuss and debate media relations principles and practices in relation to government, corporations, and public policy. From a scholarly examination of this unique and important form of communication, the course will survey the current trends and issues, and determine the validity of existing theories of media relations management from government, corporate, and community perspectives.

**COMM 205. Communication Decision Making. 3 Units.**

The purpose of this course is to assess communication strategies in decision making. From a scholarly examination of communication theories and decision making stages, the course will focus on the significance of communicating, administering, and evaluating decision making in professional environments.

**COMM 206. Management of Organizational Communication. 3 Units.**

This course examines both theoretical and applied approaches concerning the role of communication in various aspects of organizational function, such as motivation, leadership, decision-making, conflict management, and message management.

**COMM 207. Advanced Professional Communication. 3 Units.**

This advanced course both builds on basic oral and written professional communication skills, and goes well beyond them. The goals of this course are to provide opportunities for students to polish communication skills in different contexts, and to provide practice in and feedback on the interactive communication skills essential to successful professionals.

**COMM 214. Argumentation and Advocacy. 4 Units.**

This course introduces students to the theory and practice of argumentation, that is a method of decision-making that emphasizes reason giving evidence. The course includes instruction in debating, research, and critical writing, as well as advanced topics in the study of public deliberation. Prerequisites: three courses from COMM 027, 031, 043, 050 with a GPA of 2.5 or better, or permission of the instructor.

**COMM 216. Rhetorical Theory and Criticism. 4 Units.**

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 233. Documentary Film as Persuasive Communication. 4 Units.**

This course is a survey of documentary film beginning at the turn of the century and continuing through contemporary productions from a historical and rhetorical perspective. Students explore documentary film's origins and trace out its development in relation to its use and reception as students become familiar with the history of the documentary, the evolution of the genre, its rhetorical construction and its cultural influences.

**COMM 237. PR Case Studies and Problems. 4 Units.**

This advanced course in public relations engages students in case study research and application of public relations principles. Written and oral presentations with adherence to professional standards of excellence are required. Prerequisite: COMM 135.

**COMM 239. Theory of Mass Communication. 4 Units.**

This course is an overview of major theories and research in mass communication. Students examine the application of theories that explain and predict communication effects of political campaigns, advertising, entertainment, and information. Theoretical areas covered include socialization, information, diffusion, advertising, persuasion, and uses of gratification's research. The state, function, and form of theory in mass communication is discussed. Prerequisite: COMM 160 or permission of the instructor.

**COMM 245. Human Communication Theory. 4 Units.**

Students study contemporary understandings of human interaction. Beginning with epistemological issues as a framework, the course examines theory building, foundation theories of our discipline, and contextual theories.

**COMM 247. Nonverbal Communication. 4 Units.**

The course examines major dimensions of non-verbal behavior exhibited by human beings in social interactional contexts. Special emphasis is given to such areas as human proxemics, kinesics, vocalics, haptics, and artifactual codes. Prerequisite: COMM 043 or permission of the instructor.

**COMM 249. Introduction to Organizational Communication. 4 Units.**

This course takes both a theoretical and an applied approach to introduce the student to the role of communication in various aspects of organizational functioning, such as motivation, leadership, decision-making, conflict management, message management, etc. Prerequisites: COMM 043 and COMM 027 or permission of the instructor.

**COMM 252. Public Relations Administration. 4 Units.**

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 enhances critical skills of management for the understanding of public relations research, action/planning, communication and evaluation. Prerequisites: COMM 135 and COMM 137 (may be taken concurrently). Senior standing.

**COMM 255. Persuasion. 4 Units.**

This course is a survey of social psychological and communication approaches to social influence. Both past and contemporary theorizing are explored, and the methods of empirical research is discussed. Prerequisite: COMM 027 or permission of the instructor.

**COMM 260. Communication Research Methods. 4 Units.**

Students 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. A minimum GPA of 2.5 is required. Prerequisites: COMM 027, 031, 043, or permission of the instructor. Recommended for sophomores.

**COMM 261. Critical and Qualitative Research Methods. 4 Units.**

The course provides a graduate-level introduction to qualitative methods used in communication studies. Topics covered provide an overview of rhetorical analysis, critical and cultural studies, ethnography, and case studies in public relations. The course emphasizes the connection between the theoretical foundations of qualitative inquiry and their applications to communicative interactions. Applications include the writing of criticism, field work in ethnography, and case studies.

**COMM 262. Quantitative Research Methods. 4 Units.**

This course develops expertise in undertaking quantitative research at the graduate level. The seminar focuses on various quantitative methods, that include content analysis, survey research, experimental design, and scale construction, as well as statistical techniques for analyzing quantitative data.

**COMM 271. Graduate Seminar: Rhetorical Thought. 4 Units.**

This course provides a graduate level introduction into the theory and practice of rhetorical criticism. The course focuses on the role of the critic and six modes of criticism which are as follows: generic criticism, cluster, narrative criticism, narrative criticism, ideological criticism, metaphoric criticism, and fantasy theme criticism.

**COMM 272. Graduate Seminar: Interpersonal Communication. 4 Units.**

This course provides the student who has achieved a general understanding of interpersonal communication issues the opportunity to choose and explore a particular area of special interest. The first phase of the course focuses on discussion of several theories of interpersonal behavior. Beginning approximately the fourth week of class, each student brings in and presents two or more abstracts of published articles related to the interest area. The last session(s) provides the opportunity for students to share their conclusions with the others. Each student completes a paper which presents a research proposal in the area of interest. The term paper is due the last scheduled day of classes.

**COMM 273. Graduate Seminar: Mass Communication. 4 Units.**

The purpose of this course is to provide an introduction to mass communication theory and scholarship from three different scholarly perspectives: the social science or traditional paradigm, the critical theory paradigm, and the ethnographic paradigm. Students are not only exposed to the literature in each of these areas, but they are also asked to conduct small scale studies from two of the three paradigms. Because the class is a seminar, student presentations and discussion are the major activity during class time.

**COMM 275. Graduate Seminar: in Public Relations. 4 Units.**

The Graduate Seminar in Public Relations is designed through in-depth study and research to formalize understanding of Public Relations: theory and practice, functions in organizations and role in society. Students study concepts and theories related to public relations role in social systems. A "mock" APR tests knowledge at the end of the semester with both a written and an oral examination.

**COMM 276. Communication in Learning Settings. 4 Units.**

This graduate seminar is designed to develop knowledge of current communication education research and effective communication strategies for teaching undergraduate courses in communication.

**COMM 277. Media Relations. 4 Units.**

This course is to discuss and debate media relations, principles, and practice.

**COMM 278. Political Communication. 4 Units.**

This course is designed to provide a grounding in rhetorical approaches to persuasion in a political context, to acquaint students with the range of political ideologies, and to examine the theoretical and pragmatic opportunities and obstacles to advocacy in the current mediated content of national, regional, or local politics.

**COMM 287. Graduate Internship. 2 or 4 Units.****COMM 289. Graduate Practicum. 2 or 4 Units.****COMM 291. Graduate Independent Study. 2-4 Units.****COMM 295. Graduate Seminar. 4 Units.****COMM 297. Graduate Research. 1-4 Units.****COMM 299. Thesis. 2 or 4 Units.**

Hlth, Exercise Sprt Sci Courses

**HESP 100. Introduction to Research in Health, Exercise and Sport Sciences. 3 Units.**

This class is designed to develop research skills specific to the fields within health, exercise and sport sciences. Students learn to collect, review, synthesize and critically analyze scholarly research. Students are also able to create research questions and establish hypotheses, and they are supposed to a variety of data collection methods. In addition, students learn to apply appropriate techniques to interpret data and apply the results in health, exercise, and sport settings. The intention of this course is to develop analytical skills to enable the student to conduct and evaluate ethical research in your chosen field.

**HESP 120. Instructional Strategies and Methods of Teaching and Coaching. 4 Units.**

This course is designed for the future physical educator or coach to deliver an effective, meaningful physical education curriculum to a diverse population of students. Emphasis is on physical education pedagogy; the skills and techniques that successful teachers use to ensure student learning. Students engage in guided teaching and systematic observation experiences at the primary and secondary school levels in an effort to introduce them to effective teaching and coaching behaviors.

**HESP 121. Analysis of Team and Individual Sports. 3 Units.**

This is an applied motor learning approach to skill acquisition for team and Individual sports. In addition to personal skill development, students learn to prepare the introduction, explanation and demonstration of sports skills; develop and maintain skill levels through practice and reinforcement; analyze movement by systematically observing performance; utilize biomechanical concepts to analyze, correct and enhance performance and cognitive processes to improve performance. Ten to 15 different team and individual sports are presented and instruction time per sport varies. Lab fee required.

**HESP 123. Analysis of Nontraditional Games and Sports. 3 Units.**

This is an applied motor learning approach to skill acquisition for nontraditional games and sports. A variety of nontraditional games and outdoor activities embedded in the CA curriculum framework for physical education. Clinical experience is provided for secondary students in the community. Eight to 10 different nontraditional games and sports are presented and instruction time per sport varies. Lab fee required.

**HESP 127. History and Philosophy of Sport and PE. 3 Units.**

The course is designed to explore the development of sports and physical education from Ancient Greece to the present day. Students examine the organization, purpose and goals of sports and PE programs and critically evaluate a range of topics including but not limited to: performance-enhancing practices, equity and inclusion and health-related trends. The intention is to develop the students' understanding of the historical and philosophical foundations of sports and PE and examine the implications of these for goals, scope and components of sport and PE programs in America.

**HESP 129. Principles of Exercise Physiology. 4 Units.**

A course designed to meet the broad needs of Sports 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 are 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. Lab fee required.

**HESP 131. Assessment and Evaluation. 4 Units.**

This course is the development of competencies of Health, Exercise and 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. A Lab fee is required.

**HESP 133. Kinesiology. 4 Units.**

This course is a functional study of musculoskeletal anatomy and its relationship to human movement, posture, exercise prescription, and rehabilitation. Prerequisite: BIOL 011 or BIOL 051 or BIOL 061 or permission of instructor, and lab fee required.

**HESP 135. Sports Nutrition. 4 Units.**

This course provides a thorough study of the principles of nutrition as they relate to individuals who participate in sports or physical activity. Topics include calculating energy balance and the role of carbohydrates, fat, protein, vitamins, minerals and water in sports performance. The application of these topics for optimal metabolic functioning to a variety of physical activities is also presented.

**HESP 137. Psycho-Social Aspects of Sport. 3 Units.**

Students study the manner in which psychological factors influence sport performance and the manner in which sport participation can influence the human psyche. Theories concerning the relationship between human cognition, behavior and sport performance are covered. Particular emphasis is given to the practical application of these theories.

**HESP 139. Exercise Physiology. 4 Units.**

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 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.

**HESP 141. Sport, Culture and U.S. Society. 4 Units.**

This course is designed to explore the relationship between sport, culture and society in both the USA and the broader global world. Students learn to critically examine a wide range of topics that include, but not limited to, sport and gender, sport and race, global sports worlds, drugs and violence in sport, sport and politics and the crime-sport nexus. The intention of this course is to develop the student's sociological imagination and encourage the student to think critically about the role sport plays in the development of societies, ideologies and everyday life.

**HESP 142. Sport and Globalization. 4 Units.**

This course examines the interaction between sport and globalization. The foundation of the course is to provide a basic understanding of globalization and its underlying forces will provide a foundation for the course. The main focus of the course is the reciprocal nature of sport and globalization with special attention given to sport economic, cultural, and political issues. This course explores sport tourism and the Olympics as the two main intersections of sport and globalization.

**HESP 143. Prevention and Acute Care of Injury and Illness. 4 Units.**

This course provides an overview of the field of Athletic Training, its organization, and the responsibilities of a Certified Athletic Trainer (AT) as part of the sports medicine team. Instruction emphasizes prevention, recognition, and immediate care of injuries and illnesses associated with physical activity. This course is recommended for freshmen.

**HESP 145. Therapeutic Modalities. 4 Units.**

This course is 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. Topics include discussions of the physiological effects, indications, contra indications, dosage and maintenance of each modality. Recommended: BIOL 081. Lab fee is required. Junior standing.

**HESP 146. Health, Disease, and Pharmacology. 4 Units.**

This course is 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 also develop an awareness of the indications, contraindications, precautions, and interactions of medications used to treat those illnesses and diseases.

**HESP 147. Exercise Physiology I. 4 Units.**

This course is primarily designed to familiarize students with the theoretical background and hands-on skills to competently assess levels of wellness/fitness in a healthy, active, adult population. The topics and skills in the class encompass the latest information on the structure and function of body systems, training adaptations, testing and evaluation, exercise techniques, and program design. These skills are used to prescribe lifestyle and/or exercise modifications that result in individual progress toward a desired goal. The content of this course is highly focused toward the knowledge and skills required for successfully completing the National Strength and Conditioning Association's Certified Strength and Conditioning Specialist (CSCS) examination. Prerequisite: HESP 129 and upper-division class standing. Lab fee required.

**HESP 149. Clinical Evaluation and Diagnosis I. 3 Units.**

This course presents an in-depth study of musculoskeletal assessment of the lower extremity, thoracic and lumbar spine for the purpose of identifying (a) common acquired or congenital risk factors that would predispose an individual to injury and/or (b) musculoskeletal injury common to athletics or physical activity. Students receive instruction in obtaining a medical history, performing a visual observation, palpating bones and soft tissues, and performing appropriate special tests for injuries and conditions of the foot, ankle, lower leg, knee, thigh, hip, pelvis, lumbar and thoracic spine. This course is directed toward students who pursue athletic training and/or physical therapy professions. Prerequisite: HESP 133 or BIOL 071, and a lab fee is required.

**HESP 150. Clinical Evaluation and Diagnosis II. 3 Units.**

This course presents an in-depth study of musculoskeletal assessment of the upper extremity, cervical spine, head and face for the purpose of identifying (a) common acquired or congenital risk factors that would predispose an individual to injury and/or (b) musculoskeletal injury common to athletics or physical activity. Students receive instruction in obtaining a medical history, performing a visual observation, palpating bones and soft tissues, and performing appropriate special tests for injuries and conditions of the shoulder, upper arm, elbow, forearm, wrist, hand, fingers, thumb, cervical spine, head, and face. This course is directed toward students who pursue athletic training and/or physical therapy professions. Students may take this course independent of HESP 149. Prerequisite: HESP 133 or BIOL 071. Lab fee is required.

**HESP 151. Elementary Physical Education. 3 Units.**

This course is designed to prepare students for employment in an elementary school setting and provide them with the tools necessary to formulate and implement a comprehensive elementary PE experience for all students. Participants learn a wide range of teaching skills that facilitate the ability to create a quality active learning environment in elementary PE. Students explore effective teaching and assessment strategies, classroom management skills, the use of constructive feedback, the negotiation of diverse classrooms and the development of appropriate student learning outcomes. Students also are introduced to the subject matter of elementary PE and will undertake several teaching episodes. This course encourages students to engage in reflexive teaching practices, develop physically educated young people, maximize student involvement and enjoyment in PE and integrate core curriculum subject matter into PE lessons.

**HESP 152. Secondary Physical Education. 4 Units.**

This course is designed for junior/senior level students in the Sport Sciences/Sport Pedagogy concentration to deliver an effective, meaningful physical education curriculum to diverse students. This course covers curriculum components that include content, content organization, distinctive curriculum models and aspects of curriculum application. Students learn how to sustain a positive learning experience, conceive and plan meaningful curricula for school based instruction, and link the school program to opportunities for adolescents outside of school. Prerequisites: HESP 121, HESP 123, HESP 151.

**HESP 153. Equity and Inclusion in Physical Education. 4 Units.**

This course is designed to provide students with the theoretical and practical tools necessary to teach PE within a diverse classroom. Students learn a wide range of teaching skills that facilitate their ability to create a quality inclusive learning environment in Physical Education. Particular attention is paid to the following diversity categories: disabilities, gender, ethnicity and social class. Students explore a variety of adapted PE activities, federal/state legislative mandates and related policies, effective teaching and assessment strategies, classroom management skills, the use of constructive feedback and the development of appropriate student learning outcomes within diverse classrooms. Students undertake a number of peer-to-peer teaching episodes. The course encourages the students to engage in reflexive teaching practices, develop inclusive PE lessons sensitive to diversity issues and maximize student involvement and enjoyment in PE.



**HESP 155. Motor Learning. 3 Units.**

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 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, in addition to the application of motor learning principles to sport, physical education, industrial and physical therapy settings.

**HESP 157. The Clinician in Health and Exercise Science. 4 Units.**

This course integrates theory and practice and requires students to develop a research topic, consistent with an explicitly and narrowly defined area of interest. Permission of the instructor is required.

**HESP 159. Educator in Preparation. 3 Units.**

This course is designed for the future physical educator to deliver an effective, meaningful physical education experience to diverse students and help them sustain it through the knowledge to conceive and plan meaningful curricula, the administrative skill to produce an organizational structure within school time that optimizes the impact of the program, and the creative energy to link the school program to opportunities for children and youths outside of school. Prerequisites: HESP 131 and HESP 151.

**HESP 161. Biomechanics of Human Movement. 4 Units.**

This course is an introduction to the biomechanics of human movement and the analytic procedures and techniques for subsequent application in the sport sciences and related fields. The course includes 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 011 or BIOL 051 or BIOL 061 or permission of instructor, and a lab fee is required.

**HESP 163. Therapeutic Exercise. 4 Units.**

This course is 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: HESP 133 or permission of instructor, and a lab fee is required.

**HESP 165. Legal Aspects of Health, Exercise and Sport. 4 Units.**

This course addresses legal issues and responsibilities relevant to professionals in the areas of health and exercise science, 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.

**HESP 167. Introduction to Sport Management. 4 Units.**

This course is for beginning sport management students and students interested in sport business. Students study general academic, managerial, and business concepts related to sport and explore the variety of sport and fitness-related businesses and organizations within the public and private sectors. Potential career opportunities are considered.

**HESP 169. Managing Sport Enterprises. 4 Units.**

The purpose of this class is to introduce students to management and leadership in the sport industry. The unique attributes and structures of sport organizations will be explained. The course then covers multiple frames of organizational analysis and applies these to sport settings. In addition, students learn managerial and leadership skills and develop a management philosophy suited to the sport industry. Prerequisites: HESP 167 and HESP 187A.

**HESP 171. Sport Economics and Finance. 4 Units.**

This course is designed to address the respective areas of sport economics, finance, and labor relations. Both theoretical and practical aspects are explored. Students examine sport as a multi-billion dollar industry and analyze the role of sport within the larger socio-economic structure within the United States and internationally. Prerequisites: ECON 053 and BUSI 031. Junior standing.

**HESP 172. Case Analysis in Sport and Fitness Management. 4 Units.**

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 focuses on designing and implementing the prospectus, feasibility studies, and the analysis of organizational effectiveness. Topics of special interest include the planning and controlling of resources, facility operations, and strategies for production and operations management.

**HESP 173. Health Care Management and Professional Development. 4 Units.**

This course is an in-depth study of the management of health care organizations related to finances, facilities, equipment, organizations structures, medical/insurance records, risk management, human relations, and personnel. Practical and conceptual skills are taught to help students focus on more efficient health care delivery. Also covered is the development of leadership skills, future trends in health care management, guidelines for designing effective work groups and managing conflict.

**HESP 174. Sport Marketing and Promotions. 4 Units.**

This course focuses on three main aspects of sports marketing. First, students gain the knowledge necessary to market sport products. Second, the course covers the manner in which sport is used as a marketing tool. Finally, students learn about the variety of forms of public relations that are used by sport organizations. In the process, students become familiar with the role of technology in sport marketing and public relations. Sophomore standing.

**HESP 175. Sport Event and Facility Management. 4 Units.**

This course is a comprehensive investigation into the principles needed to design, implement, and manage all types of sport events and facilities. Planning, logistics, risk management, human resource management, and marketing of events and facilities are given special attention. Opportunities for the application of these principles are also provided. Prerequisites: BUSI 107 and HESP 174. Junior standing.

**HESP 177. Exercise Physiology II. 4 Units.**

This course seeks to fulfill two main objectives: 1) To establish a foundational understanding of clinical exercise testing to examine cardiac, metabolic and respiratory pathology. 2) To provide a more in-depth examination of several basic exercise physiology concepts introduced in HESP 129. These include lactate kinetics, oxygen dynamics, pulmonary function and cardiovascular function during exercise and in response to training. Prerequisite: HESP 129 and upper division class standing. Lab fee required.

**HESP 179. Introduction to Research. 4 Units.**

This course covers the rationale for and status of professional research; research designs and their applicability to students' disciplines; review, critique and synthesis of selected literature; development of research proposal and pretest of instrument.

**HESP 182. Exercise Testing and Prescription. 4 Units.**

This course is primarily designed to provide students with the hands-on training and theoretical background to competently assess levels of wellness/fitness in an "apparently healthy" (i.e. low risk) adult population. The topics and skills addressed include health screening protocols/risk stratification, use of Informed Consent documents, as well as measurement protocols for the health-related components of fitness (i.e. cardiorespiratory fitness, muscular fitness, flexibility, body composition). These skills are then used to prescribe lifestyle and/or exercise modifications that result in individual progress toward a desired goal. The content of this course is highly focused toward the knowledge and skills required for taking the ACSM Fitness Specialist (HFS) certification exam. Prerequisite: HESP 147.

**HESP 187. Internship in Health and Exercise Science. 4 Units.**

This course provides an opportunity for qualifying students to work in an area of Health and Exercise Science that interests them. Prerequisites: HESP 157, GPA 2.0, no grade below "C-" in major, and approval of course supervisor.

**HESP 187D. Sport Pedagogy Internship I. 2 Units.**

This class involves the student completing a semester-long internship connected to their chosen field of sport pedagogy. This internship develops their evaluation skills and encourage the student to engage in reflexive teaching practices to better prepare themselves for the challenges and terrain of their post-graduation employment. Prerequisite: HESP 131.

**HESP 187E. Sport Pedagogy Internship II. 4 Units.**

This class involves the student completing a semester-long internship connected to their chosen field of sport pedagogy. This internship develops their evaluation skills and encourage the student to engage in reflexive teaching practices to better prepare themselves for the challenges and terrain of their post-graduation employment. Prerequisite: HESP 187D.

**HESP 189. Practicum: Coaching. 1 or 2 Unit.**

The practicum offers non-classroom experiences in activities related to Sports Sciences, under conditions determined by the appropriate faculty member. HESP 189 represents advanced practicum work involving increased independence and responsibility. Enrollment is limited to eight units maximum of HESP 089/189A, B, C, D, H, J, K offerings and no category within a course may be repeated for credit. A list of specific courses follows. Grading option is Pass/No Credit only.

**HESP 189A. Practicum: Adapted Physical Education. 2 Units.**

These courses provide advanced practicum work in Sport Medicine. See HESP 089 for subcategories and enrollment limitations. Prerequisite: HESP 169 with a "C-" or better.

**HESP 189B. Practicum: Athletic Training III. 2 Units.**

This is a clinical education course in the field of athletic training. It incorporates 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: HESP 089K.

**HESP 189C. Practicum: Biomechanics. 2 Units.**

These courses provide advanced practicum work in Sport Medicine. See HESP 089 for subcategories and enrollment limitations. Grading option is Pass/No Credit only.

**HESP 189D. Practicum: Exercise Physiology. 2 Units.**

These courses provide advanced practicum work in Sport Medicine. See HESP 089 for subcategories and enrollment limitations. Grading option is Pass/No Credit only.

**HESP 189E. Practicum: Sport Pedagogy. 2 Units.**

This course offers a supervised leadership experience in the elementary or secondary school setting. The student works as a physical education specialist and develops as well as conducts appropriate physical activity programs. Prerequisites: HESP 151 or HESP 159 and permission of instructor.

**HESP 189F. Practicum: Coaching. 2 Units.**

Students are assigned to an intercollegiate or interscholastic sports team for the semester and participate in practice sessions throughout the specific sport season. Written guidelines are developed cooperatively by the supervisor, coach and student. Prerequisites: HESP 139 and HESP 155.

**HESP 189G. Practicum: Coaching. 2 Units.**

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: HESP 139 and HESP 155.

**HESP 189H. Practicum: Sports Law. 2 Units.**

These courses provide advanced practicum work in Sport Medicine. See HESP 089 for subcategories and enrollment limitations. Grading option is Pass/No Credit only.

**HESP 189J. Practicum: Kinesiology. 2 Units.**

These courses provide advanced practicum work in Sport Medicine. See HESP 089 for subcategories and enrollment limitations. Prerequisite: HESP 133 with a "C-" or better. Grading option is Pass/No Credit only.

**HESP 189K. Practicum: Athletic Training IV. 2 Units.**

This clinical education course is in the field of athletic training. It incorporates 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 go through final preparations for the NATABOC examination. Prerequisite: HESP 189B.

**HESP 191. Independent Study. 1-4 Units.****HESP 193. Special Topics. 1-4 Units.****HESP 195. Ethical Issues in Sport. 3 Units.**

The primary goal of this course is to enhance student awareness regarding their values, their evolving moral and ethical codes, and the ways of addressing moral problems. Students examine various ethical theories and questions encountered in the field of Sport Sciences. As part of this course, students need to identify necessary information from various sub-disciplines in order to make professional and ethical decisions. Senior standing.

**HESP 197. Independent Research. 1-4 Units.****HESP 233. Advanced Kinesiology. 4 Units.**

This graduate seminar considers the musculoskeletal analysis of human movement, posture, exercise prescription, and rehabilitation. Prerequisite: HESP 133 or permission of instructor. Graduate standing.

**HESP 235. Graduate Nutrition/Exercise Metabolism. 4 Units.**

Students study 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.

**HESP 237. Advanced Sport Psychology. 4 Units.**

This course provides a detailed examination of the theories and concepts that explain how the human psyche affects sport performance. Particular emphasis is given to the application of these concepts for coaches and athletes.

**HESP 239. Advanced Applied Sport Psychology. 4 Units.**

This graduate seminar is designed for advanced students to explore theoretical concepts of psychology as they relate to individual and group behavior in physical activity environments.

**HESP 241. Advanced Sociology of Sport. 4 Units.**

This graduate seminar deals 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 are covered, as well as the relationship of sport and social stratification such as gender, race, and class.

**HESP 242. Global Sports Worlds. 4 Units.**

Like all social institutions in the United States, global forces are increasingly shaping the sports worlds we live in. Understanding this phenomenon is imperative for future practitioners with sport sciences. This course is designed to explore this relationship between sport and globalization processes. Students learn to identify the characteristics of the sport-globalization nexus and critically examine its consequences. Through a host of experiential learning opportunities, students develop a deeper understanding of the implications of global sports worlds in your field of study. The eight pre-trip meetings take place during the Spring semester (one per week from Spring break onwards). The trip to London is scheduled after these meetings each year. The students register for the class as a Spring course. Travel required. Prerequisite: HESP 279 with a "B-" or better or permission of the instructor. Graduate standing.

**HESP 247. Advanced Exercise Physiology. 4 Units.**

This course is an advanced study of physiological responses to exercise with emphasis on laboratory methods and procedures for testing and demonstrating these responses for research application. Lab fee is required. Prerequisites: HESP 147 and permission of the instructor.

**HESP 248. Applied and Clinical Physiology. 4 Units.**

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 to enhance health, fitness, and performance. This course serves as a foundation for clinical exercise science and the use of exercise testing in the study of cardiac, metabolic and respiratory pathology.

**HESP 253. Advanced Adapted Physical Education. 4 Units.**

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.

**HESP 255. Advanced Motor Learning. 4 Units.**

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 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.

**HESP 257. Advanced Clinician in Sports Medicine. 4 Units.**

This course integrates theory and practice and requires students to develop a research topic, consistent with an explicitly and narrowly defined area of interest. Prerequisite: Permission of instructor.

**HESP 259. Professional Preparation in Sport Sciences. 4 Units.**

This course is designed for the future professional practitioner who wishes to deliver an effective, meaningful clinical or educational experience to a diverse population. The course helps them sustain the experiences 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 engage in an in-depth study of the research on teaching and the application of research-based knowledge to the teaching and clinical professions.

**HESP 261. Advanced Biomechanics of Sport. 4 Units.**

This course is an 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 and critical evaluation of current research findings in biomechanics. Lab fee required. Prerequisite: an undergraduate course in kinesiology or biomechanics or permission of instructor.

**HESP 265. Advanced Sports Law. 4 Units.**

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.

**HESP 269. Advanced Management of Sport Enterprises. 4 Units.**

The purpose of this class is to prepare graduate students to lead in the unique business environment of sport. The unique governance structure of intercollegiate athletics and professional sports is presented. Students then develop a multi-frame approach to management of sport organizations. Students also explore the subjective nature of leadership to develop a style best suited for sport. Emphasis is placed on the integration of applied research that uses leadership and management theories.

**HESP 272. Advanced Case Analysis of Sport and Fitness Management. 4 Units.**

This graduate seminar is designed to provide breadth and depth of topical knowledge beyond that covered in the introductory course.

**HESP 274. Advanced Sport Marketing and Promotions. 4 Units.**

This course provides an in-depth study of the unique nature of sport marketing that focuses on three areas. Students learn how to market sport products and events. The course explores the many mechanisms through which sport is used as a marketing tool. Finally, students learn to gain maximum benefit from the relationship between sport and the media.

**HESP 275. Advanced Sport Management. 4 Units.**

This class provides graduate students with the knowledge base necessary to lead the mega-events and manage multipurpose and single-use facilities common in sport. The first portion of the course is devoted to event planning, marketing and execution. The second part of the course focuses on planning, design and maintenance of sports facilities. Special attention is given to the environmental impact of sporting events and facilities.

**HESP 279. Research Methods in Sport Sciences. 4 Units.**

This in-depth evaluation of the various methods used in the disciplines of the sport sciences, includes experimental, descriptive, qualitative and historical approaches. Students learn the means of selecting a research problem and planning its solution as well as important considerations to regard in reviewing the literature. The course also includes an overview of proper form and style in research writing. Student must complete a fully developed Research Proposal as part of this course. Prerequisite: a course in statistics. Graduate standing.

**HESP 287. Advanced Internship: Sport Medicine. 4 Units.**

This course provides an opportunity for qualifying students to work in an area of sports medicine that interests them. Prerequisites: HESP 257 with a "C" or better and permission of instructor. Graduate standing. Grading option is Pass/No Credit only.

**HESP 287A. Advanced Internship: Sport Management. 4 Units.**

This course provides professional leadership experience for graduate students. Agency placement is based on student goals and professional leadership background. Grading option is Pass/No Credit only.

**HESP 287B. Advanced Internship: Sport Management. 4 Units.**

This course provides professional leadership experience for graduate students. Agency placement is based on student goals and professional leadership background. Grading option is Pass/No Credit only.

**HESP 289A. Advanced Practicum: Sport Management. 4 Units.**

This course is designed to provide students with a practical experience in the application of administrative theory. Prerequisite: HESP 169 or HESP 269 with a "B-" or better. Grading option is Pass/No Credit only.

**HESP 289B. Advanced Practicum: Coaching. 2-4 Units.**

This practicum offers non-classroom experiences in activities related to Sports Medicine, under conditions determined by the appropriate faculty member. HESP 189 represents advanced practicum work that involves increased independence and responsibility. Enrollment is limited to six units maximum of HESP 089/189A, B, C, D offerings and no category within a course may be repeated for credit. Grading option is Pass/No Credit only.

**HESP 291. Independent Study. 1-4 Units.****HESP 293. Special Topics. 3 or 4 Units.****HESP 297. Independent Research. 1-4 Units.****HESP 299. Thesis. 4 Units.**

## Psychology Courses

**PSYC 103. Statistical Inference in Behavioral Sciences. 4 Units.**

Students examine 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 are studied and include chi square, t-test and analysis of variance. Students learn how to use "eyeball" estimation procedures to facilitate understanding of statistical concepts, and learn how to use spread sheet and statistical computer programs for data analysis. Prerequisite: MATH 003 or appropriate score on the Mathematics Placement Test. PSYC 103 (or MATH 035 or MATH 037) with a grade of C- or better is required for psychology majors. Sophomore standing.

**PSYC 105. Experimental Psychology. 5 Units.**

This course is introduces to research methodology in the field of psychology. The course covers experimental design and statistical analysis appropriate to various designs and includes conducting reviews of research literature, writing research proposals and reports, and research ethics. All students use word processing and statistical analysis computer programs. All students complete an individual experimental research project. This course is required for psychology majors. Prerequisite: PSYC 103 or MATH 035 or MATH 037 with a grade of C- or better. Recommended: PSYC 031 and/or PSYC 053 taken in sophomore year. Sophomore standing.

**PSYC 107. Psychology of Learning. 4 Units.**

This course focuses on the scientific investigation of learning and behavior. Both experimental and related theoretical developments are considered, as well as applications of the basic principles of learning to issues of social significance. Prerequisite: PSYC 105 or permission of instructor.

**PSYC 109. Biological Psychology. 4 Units.**

This course investigates the relationship of the nervous system to mental processes and behavior. Lecture and laboratory exercises introduce current research and methodology, clinical application, and hands-on demonstration of this rapidly developing field. Topics include the evolution and development of the human brain, neuroanatomy and neural transmission, biological rhythms, sensory and motor systems, sleep, emotional control, brain damage and disease, and many others. Prerequisite: PSYC 105 with a "C-" or better, or permission of instructor.

**PSYC 110. Psychoactive Drugs and Behavior. 4 Units.**

This course is an intensive study of how drugs affect psychological processes and behavior. The course covers 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 is required.

**PSYC 111. Abnormal Psychology. 4 Units.**

Students study of the causes, classification and treatment of abnormal behavior. The class is 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 cannot 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 pharmacy.

**PSYC 115. Cognitive Psychology. 4 Units.**

PSYC 115 is an introduction to the field of cognitive psychology that focuses on the mental processes that underlie thinking, remembering/forgetting, perception, attention, knowledge, language, and problem solving. Lecture and laboratory activities emphasize the current research on cognition, as well as applications of research findings. Prerequisite: PSYC 105 or permission of instructor.

**PSYC 125. History and Systems of Psychology. 4 Units.**

This senior capstone course traces the development of "modern psychology" from its birth in early philosophy to its founding as an independent discipline in the late 1800s to its current status with an emphasis on modern behaviorism and cognitive psychology as the two dominant theoretical systems in psychology. In addition, other modern developments such as evolutionary psychology and cognitive neuroscience are discussed. The course focuses on specific content areas and ideas in psychology and the individuals who are most credited with their development. Prerequisites: PSYC 105 and or permission of instructor. Junior standing. The course is required for psychology majors and it is recommended for the senior year.

**PSYC 129. Developmental Psychology. 4 Units.**

Students compare major models and specific theories of the development of behavior and examine an overview of research methodology that includes those methods particularly appropriate to the study of developmental phenomena. The major emphasis is on current empirical theory and data about child development. Field observation of children and/or adolescents is required. Prerequisite: PSYC 105 or permission of the instructor.

**PSYC 131. Adolescence and Young Adulthood. 4 Units.**

This course is the 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. The material is selected to interest both 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. Prerequisites: sophomore standing is required.

**PSYC 133. Adulthood and Aging. 4 Units.**

This course provides an overview of developmental issues that occur in the adult and aging population. Topics include developmental theories, research techniques, and the biological, psychological, and sociological aspects of aging. Some emphasis is placed on providing psychological services to the aging population. Some field experiences in nursing homes will be part of the course. Sophomore standing is required.

**PSYC 140. Psychology of Gender. 4 Units.**

This course introduces students to psychological research on the experiences, behaviors, and abilities of men and women. A comparative approach is used to examine historical, contemporary, and cultural differences. Topics include gender differences and similarities in mental abilities, social behavior, mental health issues, and experiences of men and women in the workplace. Sophomore standing.

**PSYC 144. Psychological Assessment. 4 Units.**

An overview of the statistical underpinnings of psychological tests which include reliability, validity, and test creation as well as an overview of the most commonly administered psychological tests and their appropriate applications and use. The ethics of test creation and administration as well as practical application of various assessment techniques are discussed. This class is recommended for students who plan to pursue graduate training in clinical psychology. Prerequisite: PSYC 103.

**PSYC 149. Sensation and Perception. 4 Units.**

This course is an introduction to human sensory systems and perception. Building upon a detailed analysis of visual processing, students explore through lecture, readings, demonstrations, case studies, and investigations how scientists research the various sensory systems and how they shape our experience of, and interaction with the world. This draws on diverse fields such as biology, physics, philosophy and art in addition to psychology. This course is open to all students.

**PSYC 152. Parenting. 4 Units.**

This course discusses the role of parents in society as well as what is effective parenting. The course explores the available research on effective parenting as well as discussing and experiencing effective interventions to improve parenting skills. The course is intended to focus on both personal application as well as larger scale societal issues and interventions for others. Prerequisite: Sophomore standing.

**PSYC 154. Child Mental Health. 4 Units.**

Students study the casual factors that relate to the development of mental health problems in children. The emphasis is on the environmental issues associated with specific disorders that include behavioral learning histories, cognitive behavioral patterns, and family/parenting issues. Socio-cultural contributions to mental health are presented in addition to discussion of Evidence-Based Treatments for commonly diagnosed disorders and problems in childhood. Sophomore standing.

**PSYC 155. Couples and Family Therapy. 4 Units.**

This course is an introduction to couples and family therapy, theory, and practice. Behavioral psychology is used as the foundation, and students learn a broad systems perspective. Students are familiarized with the history of family therapy, as well as current family therapy strategies. Sophomore standing.

**PSYC 156. Behavioral Medicine/Health Psychology. 4 Units.**

Students examine the overlapping fields of behavioral medicine and health psychology. The course 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. Topics include health promotion and medical compliance. This course may interest any student who aspires to become a health care professional in health psychology, clinical psychology, medicine, pharmacy, physical therapy, or nursing. Prerequisite: PSYC 053. Junior or Senior standing recommended.

**PSYC 158. Behavioral Assessment. 4 Units.**

An overview of behavioral assessment techniques is examined. Specific topics include data collection, inter-observer agreement, social validity, treatment integrity, functional assessment, stimulus preference assessment, indirect assessment techniques, and functional analysis procedures. Prerequisites: PSYC 053 and permission of instructor.

**PSYC 166. Psychology of Personality. 4 Units.**

This course is a survey of contemporary personality theories and research. The course focuses on the study of individual difference and how these differences are explained and measured using different personality assessment devices. This course is recommended for students who aspire to enroll in graduate study of clinical psychology, school psychology, marriage and family counseling, child development, or social work. It may interest those who want to learn more about themselves and the diversity of the species. Junior or Senior standing recommended.

**PSYC 167. Psychology and the Law. 4 Units.**

The course examines the contribution of psychology to the judicial system. Students explore both the role of forensic psychologists in criminal cases and applied psychological research designed to assist police and courts in their functions. Case studies illustrate forensic issues, such as examining serial killers and the uses and abuses of police interrogation in criminal cases. Topics include insanity and incompetency of defendants; psychopathy; problems with eyewitness testimony; issues involved with sentencing (including the death penalty); the mistreatment of children and adolescents by the justice system; and false confessions. Students visit actual course trials early in the semester. Not recommended for first-year students.

**PSYC 169. Social Psychology. 4 Units.**

Students study 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: PSYC 105 or permission of the instructor.

**PSYC 183. Research Design. 4 Units.**

This course is the design and analysis of research using single subject and group designs. Prerequisite: PSYC 105 and permission of instructor.

**PSYC 187. Internship. 1-4 Units.**

This internship course gives experiences in a work setting and is contracted on an individual basis. PSYC 187 represents advanced internship work that involves 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 is the only grading.

**PSYC 189. Practicum. 1-4 Units.**

The practicum offers non-classroom experiences in activities related to the curriculum under conditions that is determined by the appropriate faculty member. PSYC 189 represents advanced practicum work which involves 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 is the only grading.

**PSYC 191. Independent Study. 1-4 Units.****PSYC 195. Seminar. 4 Units.****PSYC 197. Independent Research. 1-4 Units.****PSYC 207. Psychology of Learning. 4 Units.**

This course focuses on the scientific investigation of learning and behavior. Both experimental and related theoretical developments are considered, as well as applications of the basic principles of learning to issues of social significance.

**PSYC 220. Clinical Neuropsychology. 4 Units.**

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 to evaluate 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 to develop a clearer understanding of both normal and abnormal brain functioning are studied. Permission of instructor.

**PSYC 251. Behavioral Treatment/Applications. 4 Units.**

This course focuses on the application of behavior analytic principles and methods in applied settings, with an emphasis on behavior change procedures, maintenance and generalization of behavior change, and emergency interventions. Topics addressed include the definition and characteristics of applied behavior analysis, selection and evaluation of intervention strategies, measurement of behavior, display and interpretation of behavioral data, and behavioral assessment. Additionally, basic behavioral principles, single-case experimental design, and ethical issues are discussed in the context of behavioral assessment and intervention. Open This course is open only to graduate students with permission.

**PSYC 253. Supervising and Teaching Behavior Changes. 2 Units.**

This course introduces graduate students to the role of practicum supervisor and instructor. Under the supervision of the PSYC 053 course instructor, students develop, sustain, and evaluate their own interventions at pre-approved externship sites. Students conduct bi-weekly discussion groups that provide undergraduate students enrolled in PSYC 053 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 053 instructor. Prerequisites: PSYC 251, PSYC 258, extensive training in behavior analysis and permission of instructor.

**PSYC 254. Child Mental Health. 4 Units.**

Students study the casual factors related to the development of mental health problems in children. The emphasis is on the environmental issues associated with specific disorders, that include behavioral learning histories, cognitive behavioral patterns, and family/parenting issues. Socio-cultural contributions to mental health are presented in addition to discussion of Evidence-Based Treatments for commonly diagnosed disorders and problems in childhood.

**PSYC 255. Couples and Family Therapy. 4 Units.**

This course is an introduction to couples and family therapy, theory, and practice. Behavioral psychology is used as the foundation, and students learn a broad systems perspective. Students are familiarized with the history of family therapy, as well as current family therapy strategies.

**PSYC 256. Behavioral Medicine/Health Psychology. 4 Units.**

Students examine the overlapping fields of behavioral medicine and health psychology. The course 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. Topics include health promotion and medical compliance. This course is of interest to any student who aspires to become a health care professional in health psychology. clinical psychology, medicine, pharmacy, physical therapy, or nursing.

**PSYC 258. Behavioral Assessment. 4 Units.**

Students study an overview of behavioral assessment techniques is examined. Specific topics covered include data collection, inter-observer agreement, social validity, treatment integrity, functional assessment, stimulus preference assessment, indirect assessment techniques, and functional analysis procedures.

**PSYC 283. Research Design. 4 Units.**

Students learn the design and analysis of research using single subject and group designs.

**PSYC 285E. Behavior Analysis Internship I. 1 Unit.**

This course provides clinical experience with the University of the Pacific Behavior Analysis Services Program. This course includes practice in conducting behavioral interventions, designing, implementing, and monitoring behavior analysis programs for clients. Students oversee the implementation of behavioral programs by others, attending behavioral program planning meetings, and reviewing program-relevant literature. Faculty and staff will observe interns engaging the activities in the natural environment at least once every two weeks, and provide specific feedback to interns on their performance. Multiple populations and sites will be available, including but not limited to, typically developing school-aged children in school and home settings, and individuals with psychiatric diagnoses and/or developmental disabilities in their homes or in community settings. Permission of instructor. Pass/No Credit grading only.

**PSYC 285F. Behavior Analysis Internship II. 1 Unit.**

This course provides clinical experience with the University of the Pacific Behavior Analysis Services Program. This course includes practice in conducting behavior analysis programs for clients, overseeing the implementation of behavioral programs by others, attending behavioral program planning meetings, and reviewing program-relevant literature. Faculty and staff observe interns engaging in activities in the natural environment at least once every two weeks, and they provide specific feedback to interns on their performance. Multiple populations and sites are available, including but not limited to, typically developing school-aged children in school and home settings, and individuals with psychiatric diagnoses and/or developmental disabilities in their homes or in community settings. Permission of instructor. Pass/No Credit grading only.

**PSYC 291. Graduate Independent Study. 1-4 Units.****PSYC 295. Graduate Seminar in Psychology. 4 Units.**

**PSYC 297. Graduate Independent Research. 1-4 Units.**  
Pass/No Credit grading only.

**PSYC 297D. Independent Research. 1-4 Units.****PSYC 297E. Independent Research. 1-4 Units.****PSYC 299. Thesis. 2 or 4 Units.**

## Biological Sciences

Craig Vierra, Department Director of Graduate Program and Chair  
Joan Lin-Cereghino, Department Director of Graduate Program and Assistant Chair

### Programs Offered

**Master of Science in Biological Sciences**

For a graduate degree in the Department of Biological Sciences, the candidate may take a broadly based program in biology or may specialize in areas such as molecular and cellular biology, physiology or ecology.

Candidates for the master of science degree in biological sciences must hold a bachelor's degree that includes the equivalent of the baccalaureate program in biology at University of the Pacific. Candidates holding the bachelor's degree with a major in fields other than biology may be accepted provided deficiencies in biology are made up.

### Biological Sciences Faculty

Gregg D. Jongeward, Associate Professor and Senior Associate Dean, 1996, BS, University of Minnesota, 1986; PhD, California Institute of Technology, 1993, gjongeward@pacific.edu

Craig A. Vierra, Professor and Chair, 1995, BS, University of California, Davis, 1990; PhD, University of California, Riverside, 1994, cvierra@pacific.edu

Joan Lin-Cereghino, Professor and Assistant Chair, 2000, AB, Princeton University, 1987; PhD, University of California, San Diego, 1992, jlincere@pacific.edu

Maria G. Pallavicini, Professor and Provost, 2010, BS, University of California, Berkeley; PhD, University of Utah

Mark Brunell, Associate Professor, 2002, BA, California State University, 1988; MA, California State University, Fullerton 1991; PhD, University of California, Riverside, 1996, mbrunell@pacific.edu

Marcos Gridi-Papp, Assistant Professor, 2009, BS, State University of Campinas, Sao Paulo, Brazil, 1994; MS, State University of Campinas, Sao Paulo, Brazil, 1997; PhD, University of Texas, Austin, 2003, mgridipapp@pacific.edu

Ryan Hill, Assistant Professor, 2011, BS, University of Oregon, 1997; MA, University of Texas at Austin, 2003; PhD, University of California, Berkeley, 2008, rhill@pacific.edu

Kirkwood Land, Associate Professor, 2004, BS, University of California, Davis, 1992; MA, University of California, Riverside, 1995; PhD, University of California, Los Angeles, 2001, kland@pacific.edu

Geoffrey Lin-Cereghino, Professor, 2000, BS, University of California, Davis, 1989; PhD, University of California, San Diego, 1995, glincere@pacific.edu

Stacey Luthy, Assistant Professor, 2007, BS, Louisiana State University, 1997; PhD, The University of Miami, 2004, sluthy@pacific.edu

W. Desmond Maxwell, Associate Professor, 1999, BS, The Queen's University of Belfast, Ireland, 1986; PhD, 1991, dmaxwell@pacific.edu

Dale McNeal, Professor Emeritus, 1969, BA, Colorado College, 1962; MS, SUNY College of Forestry, 1965; PhD, Washington State University, 1968, dmcneal@pacific.edu

Douglas Risser, Assistant Professor, 2013, BS, University of New Hampshire, 2000; PhD, University of Hawaii, 2009

Ajna Rivera, Assistant Professor, 2010, BS, Stanford University, 1999; PhD, University of California, Berkeley, 2006, arivera@pacific.edu

Richard R. Tenaza, Professor, 1975, BA, San Francisco State College, 1964; PhD, University of California, Davis, 1974, rtenaza@pacific.edu

Tara Thiemann, Assistant Professor, 2013, BS, Truman State University, 2001; MS, Truman State University, 2003; PhD, University of California, Davis, 2011, tthiemann@pacific.edu

Eric O. Thomas, Associate Professor, 1993, BS, University of California, Riverside, 1984; MA, 1987; PhD, University of California, Berkeley, 1991, ethomas@pacific.edu

Douglas Weiser, Assistant Professor, 2009, BA, College of Wooster, 1999; PhD, Duke University, 2004, dweiser@pacific.edu

Lisa Wrischnik, Associate Professor, 1998, BS, University of California, Berkeley, 1986; PhD, University of California, San Francisco, 1996, lwrischnik@pacific.edu

## Master of Science in Biological Sciences

Students must complete a minimum of 32 units with a Pacific cumulative grade point average of 3.0 in order to earn the master of science degree in biological sciences.

### I. Required Graduate Courses

BIOL Electives (Four courses at the 200 level, one course may come from the 100 level if cross listed with a 200 level graduate course excluding Research and Independent Study) 16

## II. Thesis/Research

|          |                   |              |
|----------|-------------------|--------------|
| BIOL 297 | Graduate Research | 4-6          |
| BIOL 299 | Thesis            | 2<br>or<br>4 |

## III. Electives

BIOL Electives (2 courses at the 100 or 200 level or from CHEM 141) 8

**Note: 1) Students may count a maximum of six (6) units of Research and/or Independent Study toward their degree. 2) Students are encouraged, where appropriate, to select courses offered by other departments or units of the University, such as Chemistry or the Thomas J. Long School of Pharmacy and Health Sciences.**

Biological Sciences Courses

### BIOL 101. Genetics. 4 Units.

Emphasis of study is heritable variations and their relation to structure, behavior and function of genetic material. This basic course is for students concentrating on biological sciences, medical sciences and liberal arts. In addition to lecture, one-three hour laboratory per week is required. Prerequisites: BIOL 051 and BIOL 061. Recommended: Sophomore standing.

### BIOL 111. Anatomy and Physiology. 4 Units.

This lecture and laboratory course covers the structure and function of the major physiological systems of the human body, and it is intended primarily for students in the Dental Hygiene program. Students taking BIOL 111 do not receive credit for either BIOL 071 or BIOL 081. Prerequisites: BIOL 051 and BIOL 061.

### BIOL 122. Principles of Immunology. 4 Units.

The fundamental properties of antigens and antibodies are covered with an emphasis on the theories of antibody production, tolerance, transplantation immunity, autoimmunity and tumor immunology. Prerequisites: BIOL 101 and CHEM 121.

### BIOL 124. Cancer Biology. 4 Units.

The course examines the morphological and molecular events that accompany the changes of a normal mammalian cell into a cancer cell, with an emphasis on the major pathways that affect cell growth and division, cell communication, cell death and metastasis.

### BIOL 126. Neurobiology. 4 Units.

This course focuses on the molecular and cell biology of neuronal function and development, and how neurons work together to retrieve and process information and respond accordingly, with thorough discussions of sensory and motor systems and a brief review of more complex brain functions, such as emotions, speech and language, and memory. Prerequisites: BIOL 051 and BIOL 061.

### BIOL 128. Histology. 4 Units.

A study of the tissues which comprise the organs of the body is the focus. This course is limited to human tissues. Thin sections of organs will be studied and their structure related to function. Credit only given once for BIOL 128 or BIOL 129. Prerequisites: BIOL 051 and BIOL 061.

### BIOL 129. Histology Online. 3 Units.

This is a non-lab, online version of BIOL 128. Credit is only given once for BIOL 128 or BIOL 129. Prerequisites: BIOL 051 and BIOL 061. Recommended: BIOL 101.

### BIOL 130. Plant Kingdom. 4 Units.

Through lectures, laboratories and field trips, students are introduced to the morphology, reproduction biology and environmental requirements of all major groups of plants. Included are material bearing on the evolutionary relationships within and between each major group. Individual projects are required. Prerequisites: BIOL 051 and BIOL 061.

**BIOL 134. Comparative Physiology. 4 Units.**

This course is a detailed review of organ function in diverse groups of organisms. Emphasis is on physiological adaptation to the environment. Prerequisites: BIOL 051 and BIOL 061.

**BIOL 145. Microbiology. 4 Units.**

The biology of microorganisms is studied with emphasis on viruses, bacteria, fungi and protozoa. In addition to lecture, one three-hour laboratory per week is required. Prerequisites: BIOL 051, BIOL 061; CHEM 025, CHEM 027.

**BIOL 146. Industrial Microbiology. 4 Units.**

An in-depth knowledge of the industrial applications of microorganisms. The course uses an understanding of microbial physiology and genetics to illustrate how these organisms are utilized to create commercial products ranging from medicines to food products. Prerequisite: BIOL 145.

**BIOL 147. Medical Microbiology. 4 Units.**

Medical microbiology covers a survey of microorganisms implicated in human disease; emphasis on characteristics and properties of microorganisms, chiefly bacteria and fungi which are 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 with a C- or higher or permission of instructor.

**BIOL 151. Parasitology. 4 Units.**

Principles of parasitism as well as biology of animal parasites with special emphasis on the protozoa, platyhelminths, nematodes, acanthocephala and arthropods are studied. Techniques of recovery of parasites from various vertebrate hosts are introduced including staining, mounting and identification. Prerequisites: BIOL 051, BIOL 061, BIOL 101.

**BIOL 153. Cell Biology. 4 Units.**

Cell Biology studies 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 051, BIOL 061, BIOL 101, CHEM 025 and CHEM 027. Recommended: Organic chemistry.

**BIOL 155. Biological Electron Microscopy. 4 Units.**

The process 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 performs an original experiment as a term project. Prerequisites: BIOL 051, BIOL 061, CHEM 025, CHEM 027. Recommended: BIOL 101.

**BIOL 157. Topics in Biomedical Research. 4 Units.**

Basic research in the areas of cell biology, biochemistry, molecular biology and physiology are examined in their applications to current problems in medicine. Topics covered include genetic engineering, gene therapy, transplants and cloning. Prerequisites: BIOL 051, BIOL 061, BIOL 101; CHEM 121.

**BIOL 158. Computerized Data Acquisition. 4 Units.**

This lecture and laboratory course introduces students to experimental design and protocol. Students are 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 ends with a symposium-style presentation of each team's experiments and results. Prerequisites: BIOL 051 and BIOL 061.

**BIOL 159. Molecular Biological Techniques. 4 Units.**

This advanced laboratory course in the methods of molecular biology, has an 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 with a "C-" or higher.

**BIOL 162. Comparative Vertebrate Anatomy. 5 Units.**

The evolution of vertebrate organ systems as revealed by comparative morphology are emphasized. Prerequisites: BIOL 051 and BIOL 061. Recommended: BIOL 101.

**BIOL 165. Embryology and Development. 4 Units.**

This laboratory course focuses on the events that occur as a single-celled embryo develops into an adult organism. Developmental processes are studied at the descriptive and mechanistic levels, leading to an understanding of how and why complex structures are produced. Major emphases is placed on animal embryology (both vertebrate and invertebrate) leading to the production to tissues, organs and organ systems. Later developmental processes also are studied, as well as sex determination. Additional topics include cancer and evolution as seen in the context of development. Prerequisites: BIOL 051, BIOL 061, BIOL 101.

**BIOL 169. Elements of Biochemistry. 4 Units.**

The field of biochemistry is the focus in this non-lab course that 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 is discussed. This course does not count for the Biochemistry major. Prerequisites: BIOL 051, BIOL 061, BIOL 101, CHEM 123 with a "C-" or higher.

**BIOL 171. Methods in Field Biology. 4 Units.**

A course focused on methods of biological investigation with emphasis on modern field sampling techniques and instrumentation. Students are trained in experimental design and quantitative data analysis used to address a range of biological questions. Prerequisites: BIOL 051 and BIOL 061 with a "D" or better.

**BIOL 175. Ecology. 4 Units.**

The structure and dynamics of populations, biotic communities and ecosystems, is emphasized with particular focus upon relationships of organisms to their environments. In addition to lecture, one three-hour laboratory per week is required. Prerequisites: BIOL 051 and BIOL 061.

**BIOL 176. Ecology and Conservation Biology. 4 Units.**

The principles of ecology are introduced with attention to consider threats and disruptions to ecological systems from the level of local populations through ecosystems, landscapes, and global processes. Ecological principles are used to help understand these systems, to make predictions for the future or for other systems, and to evaluate possible solutions. The class considers the importance of economic and demographic forces in causing conservation problems and in shaping conservation strategies, and students practice planning conservation areas. Prerequisite: BIOL 051.

**BIOL 177. Natural Medicines. 4 Units.**

A lab course that surveys drugs found in nature, in particular their history, uses, and mode of action, and is designed as a preparation for students who will attend a Pharmacy or Dental School. Topics include history of medicine, survey of natural compounds relevant to pharmacology, and survey of naturally-derived drugs used to treat cancer, heart disease, and neurological disorders. Prerequisites: BIOL 051, BIOL 061, BIOL 101, CHEM 123 with a "C-" or higher.

**BIOL 179. Evolution. 4 Units.**

Lectures and readings on the mechanisms of evolutionary change in organisms are the focus. Prerequisites: BIOL 051 and BIOL 061. Recommended: BIOL 101.

**BIOL 182. Medical Endocrinology. 4 Units.**

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 051, BIOL 061, BIOL 101; CHEM 025 and CHEM 027. Recommended: BIOL 071 and BIOL 081.

**BIOL 185. Comparative Animal Behavior. 4 Units.**

The ecology and evolution of animal behavior are discussed. Laboratory involves a quantitative study of animal behavior at Micke Grove Zoo. Prerequisites: BIOL 051 and BIOL 061. Junior standing in Biological Sciences or Psychology.



**BIOL 186. Hormones and Behavior. 4 Units.**

This lecture/discussion course focuses 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 051, BIOL 061, BIOL 101.

**BIOL 191. Independent Study. 2-4 Units.****BIOL 197. Undergraduate Research. 1-4 Units.****BIOL 222. Immunology. 4 Units.**

Students study immunoglobulin structure, function, and expression in animals. Molecular and cellular mechanisms of humoral immune response, cell-mediated immunity, complement system, autoimmune diseases, tolerance induction, transplantations, cancer immunity, vaccines, and cytokine actions are also emphasized. Graduate standing.

**BIOL 224. Cancer Biology. 4 Units.**

The course examines the morphological and molecular events that accompany the change of a normal mammalian cell into a cancer cell, with an emphasis on the major pathways that affect cell growth and division, cell communication, cell death and metastasis.

**BIOL 226. Neurobiology. 4 Units.**

The course focuses on the molecular and cell biology of neuronal function and development, and how neurons work together to retrieve and process information and respond accordingly. It involves thorough discussions of sensory and motor systems and a brief review of more complex brain functions, such as emotions, speech and language, and memory.

**BIOL 234. Comparative Physiology. 4 Units.**

This course offers a detailed review of organ function in diverse groups of organisms. Emphasis is on physiological adaptation to the environment. Graduate standing.

**BIOL 244. Developmental Biology. 4 Units.**

Students examine the genetic control of development and the physiological mechanisms involved in fertilization and differentiation. Graduate standing.

**BIOL 246. Industrial Microbiology. 4 Units.**

An in-depth knowledge of the industrial applications of microorganisms. The course uses an understanding of microbial physiology and genetics to illustrate how these organisms are utilized to create commercial products ranging from medicines to food products. Prerequisite: BIOL 145.

**BIOL 247. Medical Microbiology. 4 Units.**

This course content is the same as BIOL 147 with three additional hours per week of seminar and/or special project. Graduate standing.

**BIOL 251. Parasitology. 4 Units.**

This course content is the same as BIOL 151. Principles of parasitism, biology of animal parasites with special emphasis on the protozoa, nematodes, helminths, acanthocephala, and arthropods are covered with three additional hours per week of seminar and/or special project. Graduate standing.

**BIOL 253. Cell Biology. 4 Units.**

This course content is the same as BIOL 153. Students take an in-depth look at the structure and function of a cell with an emphasis on the methodologies of Cell Biology. Research-based current understanding of the topics is stressed and a special project is required. Graduate standing.

**BIOL 255. Biological Electron Microscopy. 4 Units.**

This course content is the same as BIOL 155. The processes and techniques involved in examining biological specimens with the transmission electron microscope are covered in detail. When competence in specimen processing is achieved, each student performs an original experiment as a term project. Graduate standing.

**BIOL 259. Molecular Biological Techniques. 4 Units.**

This is 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. Graduate standing.

**BIOL 271. Methods in Field Biology. 4 Units.**

This is a course focused on methods of biological investigation with emphasis on modern field sampling techniques and instrumentation. Students are trained in experimental design and quantitative data analysis used to address a range of biological questions. Graduate standing.

**BIOL 279. Evolution. 4 Units.**

This course content is the same as BIOL 179 and a special project is required. Graduate standing.

**BIOL 291. Independent Study. 2 or 4 Units.****BIOL 295. Graduate Seminar. 4 Units.****BIOL 297. Graduate Research. 1-6 Units.****BIOL 299. Thesis. 2 or 4 Units.**

## Chemistry

Andreas H. Franz and C. Michael McCallum, Co-Chairs

### Programs Offered

**Master of Science in Pharmaceutical and Chemical Sciences****Doctor of Philosophy in Pharmaceutical and Chemical Sciences**

Specialized Areas: Bioanalytical and Physical Chemistry, Drug Design/Discovery and Chemical Synthesis, Clinical Pharmacy and Transitional Studies, Drug Targeting and Delivery, Molecular Cellular Pharmacology.

For detailed program information for these degrees please consult the Thomas J. Long School of Pharmacy and Health Sciences (p. 115) section in this catalog.

### Chemistry Faculty

Andreas Franz, Associate Professor and Co-Chair, 2002, BS, Universitaet-Gesamthochschule Siegen, 1994; MS, University of the Pacific, 1997; PhD, University of the Pacific, 2000.

C. Michael McCallum, Professor and Co-Chair, 1994, BS, Michigan State University, 1988; PhD, University of California, Berkeley, 1993.

Anthony D. Dutoi, Assistant Professor, 2012, BS, Saint Louis University, 1999; PhD, University of California, Berkeley, 2006.

Ryan Moffet, Assistant Professor, 2011, BS, San Francisco State University, 2002; PhD, University of California San Diego, 2007

Jianhua Ren, Associate Professor, 2002, BS, Beijing Normal University, 1986; MS, Auburn University, 1994; PhD, Purdue University, 1999.

Silvio Rodriguez, Professor, 1978, BS, University of Chile, 1968; MS, University of California Santa Barbara, 1970; PhD, University of California Santa Barbara, 1978.

Vyacheslav V. Samoshin, Professor, 1999, MS, Lomonosov Moscow State University, USSR, 1974; PhD, Moscow State University 1982; DSci, Moscow State University, 1991.

Bálint Sztáray, Associate Professor, 2008, MS, Eötvös Loránd University, 1997; PhD, Eötvös Loránd University, 2001.

Jerry Tsai, 2008, BS, University of California, Los Angeles, 1991; PhD, Stanford University, 1998.

Liang Xue, Assistant Professor, 2007, BS, Fudan University, Shanghai, China, 1996; PhD, Clemson University, 2004.

Qinliang Zhao, Assistant Professor, 2010, BS, Zhejiang University, 2003; PhD, Texas A & M University, 2007

Chemistry Courses

**CHEM 121. Organic Chemistry. 5 Units.**

An Introduction to the fundamental principles of organic chemistry including molecular structure, chemical bonding, functional groups, nomenclature, stereochemistry, basic organic reactions, and modern spectroscopy for structural characterization. Three lecture periods and two three-hour laboratory periods per week are required. Prerequisites: CHEM 025 and CHEM 027 with a "C-" or better.

**CHEM 123. Organic Chemistry. 5 Units.**

This course is a continuation of CHEM 121 with an emphasis on organic synthesis and mechanisms. The reactions of the aromatics, aldehydes, ketones, amines, carboxylic acids and their derivatives, and carbohydrates are covered. The course also touches on polymers and biological molecules including amino acids, proteins, and nucleic acids. Three lecture periods and two three-hour laboratory periods per week are required. Prerequisite: CHEM 121 with a "C-" or better.

**CHEM 132. Teaching and Learning Chemistry. 2 Units.**

Students are prepared for participation in peer-led team-learning (PLTL) models of instruction in this course and it provides the opportunity for the students to become student leaders. In the PLTL, or General Chemistry Workshops, a small group of students get together under the guidance of the trained student leaders and work through a set of challenging problems prepared by the instructor of the course. The main idea is for all the students in the group to work together and gain experience and confidence solving challenging problems as a group. The Workshop provides an active teaching and learning experience. This course can be taken multiple times. Prerequisites: CHEM 025 and CHEM 027 with a "C-" or better and permission of the instructor.

**CHEM 134. Teaching and Learning Organic Chemistry. 2 Units.**

Students are introduced to the learning and leadership model, Peer-Led Team Learning (PLTL). The student will gain hands-on experience in leading small discussion groups in organic chemistry. Instructor-covered topics in organic chemistry include specific instructions regarding the workshop lessons, strategies in guided problem solving for the groups, and review of organic chemistry materials. Instructor-covered topics in the didactic portion of the course include, but are not limited to, practical information (understanding motivation, managing time, dealing with dominating students, learning styles, group dynamics, study skills, helping students improve critical thinking, develop logical reasoning, and prepare for tests), and a foundation in learning theory. Prerequisites: CHEM 025 and CHEM 027 with "C-" or better, CHEM 121 and CHEM 123 with "B" or better and permission of instructor.

**CHEM 141. Analytical Chemistry. 4 Units.**

The roots of analytical chemistry and the principles used in modern instruments come from traditional techniques. These techniques include gravimetry, acid-base, complexometric, and redox titrations form the backbone of the course, which covers most major areas of modern quantitative analysis. The theory behind the techniques is covered through many numerical examples and their applications in environmental and biochemical analyses are emphasized. Standard procedures used in analytical laboratories are introduced, including error reporting, statistics, and quality assurance. Prerequisites: CHEM 025 and CHEM 027 or GEOS 142 with a "C-" or better.

**CHEM 143. Instrumental Analysis Lab. 4 Units.**

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 with a "C-" or better or permission of the instructor.

**CHEM 151. Biochemistry I. 4 Units.**

This is the first semester of a 2 semester survey of biochemistry. The fundamental building blocks of biochemical systems are introduced covering amino acids and proteins (enzymatic & structural), nucleic acids, lipids and membranes, and carbohydrates. Particular topics of oxygen transport, enzyme kinetics, DNA replication, RNA expression, and protein expression are gone over in detail. Prerequisites: CHEM 121 and CHEM 123; CHEM 159 or CHEM 161 all with a "C-" or better; or permission of instructor.

**CHEM 153. Biochemistry II. 3 Units.**

As the second semester in this biochemistry series, the detailed biochemical mechanisms of the major metabolic pathways are covered. These pathways include glycolysis, gluconeogenesis, citric acid cycle, electron transport/oxidative phosphorylation, photosynthesis/Calvin cycle, lipid metabolism/fatty acid catabolism, and the synthesis/degradation of amino and nucleic acids. Discussion centers on the enzymatic mechanisms, energy, reduction/oxidation, control/regulation, and integration of these pathways. Prerequisite: CHEM 151 with a "C-" or better or permission of instructor.

**CHEM 157. Biochemistry Laboratory. 4 Units.**

Standard techniques used in Biochemistry. Exercises focus on the expression, mutation, and purification of a protein target and involves the following techniques: site-directed mutagenesis, column chromatography, electrophoresis, nucleic acid isolation and manipulation/use of relevant databases. Prerequisite: CHEM 151 or BIOL 169 with a "C-" or better; or permission of instructor.

**CHEM 159. Biophysical Chemistry. 4 Units.**

This course applies the approaches and concepts of physical chemistry to describe the reactions and phenomena in biological systems. The principles of thermodynamics, kinetics, spectroscopy and transport phenomena are covered. While this is not a mathematic intensive course, the concepts require a basic knowledge of calculus. Prerequisites: MATH 051, CHEM 025, CHEM 027, PHYS 055 all with a "C-" or better or permission of instructor.

**CHEM 161. Physical Chemistry I-Thermodynamics. 4 Units.**

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 025, CHEM 027, MATH 055, PHYS 055 all with a "C-" or better or permission of instructor.

**CHEM 163. Physical Chemistry II-Quantum Mechanics. 4 Units.**

This course is a continuation of physical chemistry and includes quantum chemistry and applications, bonding, symmetry and group theory, atomic and molecular spectroscopy, and chemical kinetics. Three class periods a week are required. Prerequisites: CHEM 025, CHEM 027, MATH 055, PHYS 055 all with a "C-" or better or permission of the instructor.

**CHEM 165. Physical Chemistry III-Kinetics. 4 Units.**

The fundamental principles of Chemical Kinetics are introduced in this course which covers: kinetic molecular theory of gases, rates of chemical reactions, rate laws, collision theory and chemical dynamics. Selected applications include photochemistry, catalysis, enzyme kinetics, pharmacodynamics, electrochemical systems, transport properties, viscosity, diffusion, and sedimentation. Prerequisites: CHEM 025, CHEM 027, MATH 053 or MATH 055, PHYS 053 or PHYS 055 or permission of instructor.

**CHEM 167. Experimental Physical Chemistry. 4 Units.**

This laboratory course is 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 159 with a "C-" or better.

**CHEM 171. Advanced Inorganic Chemistry. 4 Units.**

This course includes: atomic structure, periodicity, covalent bonding theory, molecular geometry and symmetry, molecular orbital theory and its applications. Also covers coordination and organometallic chemistry, ligand field theory, spectroscopy, structure, reaction mechanisms, introduction to bioinorganic chemistry and metals in medicine. Two class periods and four hours of laboratory per week are required. Prerequisite: CHEM 163 with a "C-" or better or permission of the instructor.

**CHEM 181. Intro to Molecular Simulation. 4 Units.**

This course enables chemistry and other science students to utilize computational tools for molecular simulation. Students who complete this class are able to understand the theory behind molecular dynamics and force-fields. In addition, students construct and execute molecular simulations using standard tools such as CHARMM, NAMD, VMD and GAUSSIAN. Students then demonstrate an ability to analyze and present the data obtained from such simulations. Prerequisites: CHEM 025 and CHEM 027 with a grade of "C-" or better and permission of instructor.

**CHEM 191. Independent Study. 2-4 Units.****CHEM 193. Special Topics. 4 Units.****CHEM 197. Independent Research. 1-4 Units.**

Prerequisite: CHEM 025 with a "C-" or better.

**CHEM 197D. Independent Research. 1-4 Units.****CHEM 197E. Independent Research. 1-4 Units.****CHEM 197F. Independent Research. 1-4 Units.****CHEM 197G. Independent Research. 1-4 Units.****CHEM 234. Selected Topics: Organic Chemistry. 4 Units.**

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 Lab. 4 Units.**

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 Units.**

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 264. Selected Topics - Physical Chemistry. 4 Units.**

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 271. Advanced Inorganic/Bioinorganic Chemistry. 4 Units.**

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 Units.**

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 Units.****CHEM 293. Special Topics. 3 or 4 Units.****CHEM 295. Graduate Seminar. 2 Units.****CHEM 297. Graduate Research. 1-4 Units.****CHEM 299. Thesis. 1-4 Units.****CHEM 381. Apprentice Teaching. 1-4 Units.****CHEM 391. Independent Study. 2-4 Units.****CHEM 395. Tchg. Sem. in the Clg. Chem.. 2 Units.****CHEM 397. Graduate Research. 1-6 Units.****CHEM 399. Dissertation. 1-6 Units.****Pharm Chem Sciences Courses****PCSP 201. Statistics and Experimental Design. 3 Units.**

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 nonparametric measures of association and elements of good experimental design are also included. Graduate standing.

**PCSP 203. Information and Laboratory Management. 1 Unit.**

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). Graduate standing.

**PCSP 204. Introduction to Nanotechnology. 4 Units.**

The course provides an overview of Molecular Nanotechnology. It shows 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 or as they are planned for the future, will be discussed. Graduate standing or permission of instructor.

**PCSP 205. Instrumental Analytical Chemistry. 4 Units.**

Lectures focus on the theory and physical principles of instruments for the analysis of matter. Laboratory lecturer describes the actual operation of instruments. Students gain hands-on experience with the operation of instruments. Graduate standing.

**PCSP 206. Models and Concepts in Chemistry. 4 Units.**

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. Many chemical problems from organic, inorganic, and transition metal chemistry and biochemistry are presented and the applicability of the various models and concepts as well as their limitations are demonstrated. Graduate standing or permission of instructor.

**PCSP 207. Bioanalytical Techniques. 3 Units.**

Students are introduced to techniques of bioanalysis for the pharmaceutical and chemical sciences. The course provides a conceptual understanding and practical familiarity with techniques used for analysis of proteins and nucleic acids. Recommended: Basic biochemistry.

**PCSP 208. Applied Pharmaceutical Analysis. 4 Units.**

Students study analytical methods applied for the assessment of pharmaceutical quality, and the identification and quantification of active pharmaceutical molecules and metabolites in biological samples. Prerequisite: any analytical Chemistry or Biology background and permission of instructor.

**PCSP 209. Technical Writing and Presentation. 1 Unit.**

This course covers common written and oral forms of communication and scientific material. Graduate standing.

**PCSP 211. Drug Design. 4 Units.**

Students study modern methods used in the design of new drugs. Target selection, lead compound discovery and molecular modifications to optimize activity are studied. Graduate standing or bachelor's degree and permission of instructor.

**PCSP 213. Biotransformation of Pharmaceutical Agents. 3 Units.**

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. Graduate standing in TJ Long School of Pharmacy & Health Sciences or in Chemistry Department, or permission of instructor.

**PCSP 215. Molecular Modeling and Drug Design. 4 Units.**

The course presents a thorough and in-depth overview of methods and techniques in computer assisted drug design (CADD) where especially the needs of the pharmaceutical industry are considered. Graduate standing or permission of instructor.

**PCSP 217. Drug Biotransformation. 3 Units.**

This course generally meets two times a week (two 75 minute 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 are discussed. Students need to submit a research proposal at the end of the course. Graduate standing or permission of instructor.

**PCSP 221. Fundamentals of Dosage Forms. 3 Units.**

In this course the fundamental physicochemical properties and composition of various dosage forms is taught. Graduate standing.

**PCSP 222. Thermodynamics of Pharmaceutical Systems. 3 Units.**

This is a classical course on the applications of thermodynamics to the study of pharmaceutical systems. The course includes a review of the basic principles of thermodynamics. These principles are used to describe and study physical and chemical transformations of pure substances and mixtures in pharmaceutical systems. Graduate standing or permission of instructor.

**PCSP 223. Pharmacokinetics and Pharmacodynamics. 3 Units.**

This course teaches critical concepts and basic principles of pharmacokinetics and pharmacodynamics. Such concepts and principles are required for the students to understand the drug behavior in the body. Graduate standing or permission of instructor.

**PCSP 224. Diffusion in Pharmaceutical Sciences. 3 Units.**

Students discuss diffusion theories, experimental methods, and application to pharmaceutical/biological systems. Prerequisites: CHEM 161 and MATH 033 or equivalent or permission of instructor.

**PCSP 225. Pharmaceutical Technologies. 2 Units.**

Students study theory and practice in industrial pharmacy that include pre-formulation, formulation and pharmaceutical manufacture. Prerequisites: PHAR 114, 123, 133. Graduate standing.

**PCSP 228. Mathematical Modeling in Pharmaceutical Research. 3 Units.**

Students study the mathematical modeling theory and application to problems in pharmaceutical research. Modeling is applied to three major areas: drug delivery, metabolic/biological cascades and pharmacological response kinetics. Prerequisites: PHAR 113 or permission of instructor. Recommended: MATH 057; PHAR 114 and PHAR 134.

**PCSP 229. Advances in Drug Delivery Systems. 3 Units.**

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 are covered. The biopharmaceutical rational and evaluation of such systems is also discussed. Graduate standing.

**PCSP 230. Molecular Pharmacology of Nucleic Acid. 3 Units.**

Students study 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. Graduate standing.

**PCSP 231. Molecular Pharmacology I. 4 Units.**

This is the first course in the Molecular Pharmacology series, effects of autonomic and central nervous system therapeutic agents and the mechanisms whereby these effects are induced. Drug classes are presented to illustrate the effects of drug classes in the treatment of disease. The molecular principles of drug action and receptor theory are covered. Enrollment in the PCSP program is required.

**PCSP 232. Mechanisms of Drug Addiction II. 4 Units.**

This is the second course in the Molecular Pharmacology series, effects of cardiovascular, endocrine, cancer chemotherapy, immunologic therapeutic agents and the mechanisms whereby these effects are induced. Drug classes will be presented to illustrate the effects of drug classes in the treatment of diseases. Enrollment in the PCSP program is required.

**PCSP 233. Molecular Pharmacology III. 4 Units.**

This is the third course in the Molecular pharmacology series, effects of antimicrobial, hematologic and gastrointestinal therapeutic agents and the mechanism whereby these are induced. Drug classes are presented to illustrate the effects of drug classes in the treatment of diseases. The mechanisms of drug toxicity are also covered. Enrollment in the PCSP program is required.

**PCSP 234. Neurochemical Pharmacology. 3 Units.**

Students study neurobiology of nerve cells and the neurochemical pharmacology associated with function of central and peripheral nervous systems. Graduate standing.

**PCSP 235. Current Topics in Pharmacology and Toxicology. 2 Units.**

Each week this course focuses on a different area of research interest in pharmacology and toxicology. It involves discussions of assigned research papers that provide students with a current perspective and understanding of issues and techniques associated with the selected research topics. Graduate standing in the PCSP program.

**PCSP 236. Selected Topics: Advanced Toxicology. 2 Units.**

This course teaches students the organ systems and mechanistic approach to toxicological assessment. Quantitative, environmental and regulatory aspects of toxicology are included as essential elements of toxicological evaluation. Graduate standing in the PCSP program or permission of instructor.

**PCSP 237. Cell Culture Techniques. 3 Units.**

This course teaches students basic techniques in mammalian cell culture. In addition, advanced topics of cellular techniques are demonstrated and discussed representative of current research methods. Permission of PCSP Program Director.

**PCSP 240. Molecular Spectroscopy. 4 Units.**

The basic theory behind infrared, visible, ultraviolet, and magnetic resonance spectroscopy are studied. The course includes the quantum mechanics of light absorption, atomic absorption and emission spectroscopy, vibrational spectroscopy of diatomic and polyatomic molecules, absorption and emission electronic spectroscopy and magnetic resonance spectroscopy. Graduate standing or permission of instructor.

**PCSP 241. Advanced Organic/Bioorganic Chemistry. 4 Units.**

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 CHEM 123 with a "C" or better.

**PCSP 242. Selected Topics: Advanced Organic Chemistry. 4 Units.**

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 CHEM 123 with a "C" or better.

**PCSP 243. Applied Computational Chemistry. 4 Units.**

Besides the normal laboratory experiments traditionally expected, modern chemists/biochemists, whether in the chemical/pharmaceutical industry or academia, perform "experiments" on the computer by calculating the outcome of chemical and biochemical reactions. This in silico chemistry has become an integral part of the education in chemistry and the present course will provide an introduction into this field by addressing a general audience of chemists/biochemists and students from neighboring fields.

**PCSP 244. High-Resolution NMR Spectroscopy. 4 Units.**

A study of one and two dimensional FT-NMR techniques used for structure elucidation of organic molecules. Emphasis is placed on understanding the capabilities and limitations of these techniques, the information they provide and the practical aspects of their implementation. Permission of instructor.

**PCSP 245. Proteins and Nucleic Acids. 3 Units.**

Students study the chemical, physical and biological properties of the proteins and nucleic acids and their constituents. Topics include 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 Units.**

Students study the fundamentals of mass spectrometry, theory, instrumentation and applications to organic and biological molecules. Prerequisite: PCSP 205.

**PCSP 248. Enzymology. 4 Units.**

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 254. Research Processes: Publications, Presentations, Grants and IRB. 3 Units.**

This course prepares graduate students in Pharmacoeconomics and Health Care Outcomes and Services as a successful researcher by gaining experience in the development of a research plan, obtaining approval of the Institutional Review Board, submission of an extramural grant, dissemination of the student findings at a national or international meeting, and submission of a manuscript to a peer-reviewed journal. Prerequisite may be taken concurrently: PCSP 201, or other comparable statistics course at the discretion of the course coordinator. Permission of the instructor is required.

**PCSP 255. Long Term Care Practice. 3 Units.**

This class covers the clinical pharmacy component of a long term facility with special emphasis on opportunities and research needs. Students study the systematic approach to monitor the drug therapy of the long term care patient. Graduate standing.

**PCSP 256. Health Services Management and Finance. 2 Units.**

Health Care Finance offers an introduction to accounting, financial theory and practice in health care settings. It is designed to familiarized students with financial concepts and issues confronting managers in the health and pharmaceutical sectors. Prerequisites: Admission to the PCSP graduate program and permission of the instructor.

**PCSP 257. Ambulatory Care Practice. 3 Units.**

Students examine the application of clinical pharmacy to ambulatory care settings in an affiliated clinic or community pharmacy. Special emphasis is placed on opportunities and research needs. Graduate standing.

**PCSP 258. Teaching and Evaluation of Learning and Competency. 2 Units.**

Student abilities in development as a teacher are developed in an interactive, evidence-based manner covering the major components of teaching, learning, evaluation and assessment. Prerequisites: Admission to the PCSP graduate program and permission of the instructor.

**PCSP 259. Topics in Acute Case Practice. 3 Units.**

Students examine the application and investigation of clinical pharmacy in acute care setting with emphasis on medical management of common diseases and rational drug selection and dosing. Graduate standing.

**PCSP 260. Advances in Neuropsychiatric Pharmaceutical Care. 2 Units.**

Students examine pharmaceutical care for the patient with neurologic and psychiatric disorders. Emphasis is placed on appropriate use of drug therapy in the management of these disorders. Graduate standing. Permission of instructor.

**PCSP 261. Advances in Cardiovascular Pharmaceutical Care. 3 Units.**

Students explore the application of Drug Therapy to patient care with assignments that expand the students' knowledge of background material that support therapeutic guidelines. Permission of instructor.

**PCSP 262. Vascular, Renal and Pulmonary Care. 4 Units.**

Students study the pharmaceutical care for the patient with cardiovascular, respiratory and renal diseases. Emphasis is placed on 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 263. Analytical Techniques in Pharmacoconomics and Health Care Outcomes and Services. 4 Units.**

This course prepares graduate students in Pharmacoeconomics and Health Care Outcomes and Services to meet the challenges of a broad assortment of health services related research by providing fundamental principles and tools for the discipline. The class uses real world examples of research design, statistical evaluations and database selection and use to assess therapeutic, economic and humanistic outcomes. Prerequisites: PCSP 201 and PCSP 203.

**PCSP 264. Health Serv Rsrch Analysis. 3 Units.**

This course prepares graduate students in Pharmacoeconomics and Health Care Outcomes and Services to meet the challenges posed by the needed to rapidly and accurately review, critique and assimilate information from health care and economic literature and to complete a full, advanced statistical analysis such as that required for the introduction and discussion sections of a research article or dissertation in pharmacoeconomics and health care outcomes. Prerequisites: PCSP 201, 203, 263.

**PCSP 265. Health Care Economics. 2 Units.**

This course is a current medical literature based course and is designed to prepare graduate students in Pharmacoeconomics and Health Care Outcomes and Services to meet challenges associated with understanding microeconomics terms and tools used in health care, medical literature and health care decision making processes. Readings, lectures and discussions emphasize processes used in economic decisions made by health care consumers, providers and third party payers. Primary topics include the demand for health care, how it may vary based on payment/payer options and the scope and supply of care available. Prerequisites: PCSP 263, 264, and permission of the instructor.

**PCSP 266. Pharmacoeconomics and Microeconomics/Managerial Economics. 2 Units.**

This course is designed to prepare graduate students in Pharmacoeconomics and Health Care Outcomes and Services to evaluate the applicability, importance and relevancy of pharmacoeconomics, microeconomics and managerial economics in answering questions and solving problems within the US health care system. Additionally, after completion of this course, students can assess, apply, interpret and determine the appropriate utilization of pharmacoeconomics, microeconomic, and managerial economic principles to address relevant healthcare issues and questions. Prerequisites: PCSP 201 and permission of the instructor.

**PCSP 270. Theory and Methodology of Simulation of Natural Rock Formation. 4 Units.**

This course is created particularly for PhD students of the Pharmaceutical and Chemical Sciences Program. It offers a comprehensive integration of multi-disciplinary sciences such as biology, life science, geoscience, ocean science, environment science, material science, etc. The course introduces some new breakthroughs and frontier discovery which reveal the mystery relationship between life science and geoscience. Upon completion of this course, PhD students are able to carry out professional lab and on-site tests and measurements. Graduate standing in chemistry, biology, geology, material science, environmental science or engineering or permission of instructor.

**PCSP 283. Multidisciplinary Project. 1 Unit.**

Students in the Pharmaceutical and Chemical Science Graduate Program design an interdisciplinary project based upon the relevant contributions of their backgrounds. Enrollment in PCS Graduate Program.

**PCSP 287. Internship. 1-4 Units.**

The internship offers an experiential learning program at a pharmaceutical/chemical/biotechnological industry, academic institution, government laboratory, 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. Graduate students that have completed Category I course work, or obtained permission of coordinator shall enroll in this course. For students in thesis/dissertation tracks, concurrence of thesis/dissertation adviser(s) is required.

**PCSP 291. Independent Study. 1-4 Units.**

Independent Study is restricted to masters or doctoral (PhD) candidates. It may be repeated with permission as progress warrants. No more than eight credits may be used toward doctoral degree requirements. The student must be in good academic standing. Approval of the required contract for Independent Graduate Study is required. Graduate standing and permission of the instructor.

**PCSP 295. Graduate Seminar. 1 Unit.**

This seminar presents 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 attend seminars without official enrollment. PCSP faculty members present a short talk on their research areas at the beginning of the fall semester each year. Graduate standing.

**PCSP 297. Graduate Research. 1-4 Units.**

Graduate Research is limited to masters or doctoral (PhD) candidates. It may be repeated with permission as progress warrants. No more than eight credits may be used toward doctoral degree requirements. Admission to the graduate program and permission of research director.

**PCSP 299. Thesis. 1-6 Units.**

This course provides one-to-one work by student with faculty research mentor to plan, organize, conduct, evaluate and write an original research project as a thesis for partial fulfillment of the MS degree. Admission to MS thesis program (PCSP) and permission of research advisor.

**PCSP 387. Internship. 1-4 Units.**

This internship offers an experiential learning program at a pharmaceutical/chemical/biotechnological industry, academic institution, government laboratory, 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. Graduate Standing with completed Category I course work or permission of coordinator. For students in thesis/dissertation tracks, concurrence of thesis/dissertation adviser(s) is required.

**PCSP 391. Independent Study. 1-4 Units.**

Independent Study is restricted to masters or doctoral (PhD) candidates. It may be repeated with permission as progress warrants. No more than eight credits may be used toward doctoral degree requirements. The student must be in good academic standing. Approval of the required contract for Independent Graduate Study is required. Graduate standing and permission of the instructor.

**PCSP 391D. Independent Study. 1-4 Units.**

**PCSP 395. Graduate Seminar. 1 Unit.**

This seminar presents 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 attend seminars without official enrollment. PCSP faculty members present a short talk on their research areas at the beginning of the fall semester each year. Graduate standing.

**PCSP 397. Graduate Research. 1-4 Units.**

Graduate Research is limited to masters or doctoral (PhD) candidates. It may be repeated with permission as progress warrants. No more than eight credits may be used toward doctoral degree requirements. Admission to the graduate program and permission of research director.

**PCSP 397D. Graduate Research. 1-4 Units.**

**PCSP 397E. Graduate Research. 1-4 Units.**

**PCSP 399. Dissertation. 1-6 Units.**

This course is only open to doctoral (PhD) candidates. No more than eight credits may be used toward doctoral degree requirements. Admission to PhD program (PCSP) and permission of research advisor.

## Communication

Qingwen Dong, Chair

Jon Schamber, Department Director of Graduate Studies

### Programs Offered

#### Master of Arts in Communication

- Communication Education
- Communication Studies
- Political Communication
- Media and Public Relations

The Department of Communication offers graduate-level instruction that leads toward the Master of Arts degree. The degree program combines training in communication theory, methodology and practice for students who desire knowledge and skills for solving work-related communication problems and for students who intend to enter doctoral programs. The program offers four concentrations of study:

1. Communication Education
2. Communication Studies
3. Political Communication, and
4. Media and Public Relation

Three of the concentrations provide options for taking coursework from related disciplines that provide graduate students with an interdisciplinary approach to the study of communication. Each concentration is designed for students who regard knowledge of communication as important for their chosen professional careers but may or may not hold a bachelor's degree in communication.

The nature of the discipline of communication requires students to possess a high level of proficiency in written and spoken English. For this reason, students who come from non-English speaking cultures should

only apply for the program if they have extensive training and experience in speaking and writing in the English language.

## Thesis and Non Thesis Options

The thesis option (Plan A) requires 28 units of coursework and 4 units of thesis. Students must successfully complete a 6-hour written comprehensive examination and a 1-hour oral examination administered by a committee of three professors prior to starting the thesis. Students must also successfully defend a thesis proposal before a committee of three professors prior to collecting data for the thesis. The thesis must contribute to the body of knowledge of the field in a significant manner.

The non-thesis option (Plan B) requires 32 units of coursework. Students must also successfully complete a 12-hour written comprehensive examination and a 2-hour oral examination administered by a committee of three professors. Four hours of the written comprehensive examination covers material from a "landmark works in communication" list developed by the department faculty.

## Grade Point Requirements

Candidates for a graduate degree must maintain a cumulative GPA of at least 3.0. No grade below a B- (2.7) counts toward the degree program in any course at the 200 level. No grade below a B (3.0) counts toward the degree program in any course at the 100 level.

Students who seek admission to the Department of Communication must maintain a GPA of 3.0 or above in all upper-division undergraduate study and complete the Graduate Record Examination with satisfactory results.

## Graduate Assistant Requirements

A full-time graduate assistant normally takes 8 units. Graduate assistants who seek to take more than 8 units must receive department approval and approval of the Graduate Dean.

## Communication Faculty

Qingwen Dong, Chair, Professor, 1996, BA, Beijing Second Foreign Language Institute, 1983; MA, University of Missouri-Columbia, 1990; PhD, Washington State University, 1995.

Marlin Bates, Assistant Professor, 2005, BA, University of the Pacific, 1996; MA, 1999; PhD, Pennsylvania State University, 2004.

Teresa G. Bergman, Associate Professor, 2006, BA, University of California, Berkeley, 1978; MA, San Francisco State University, 1991; PhD, University of California, Davis, 2001.

Kenneth D. Day, Professor, 1987, BS, Indiana University, 1970; MA, 1975; PhD, 1980.

Heather Hether, Assistant Professor, 2011, BA York University, 1992; MA, 2003, 2007; PhD University of Southern California, 2009.

Randall J. Koper, Professor, 1985, BA, Michigan State University, 1974; MA, 1984; PhD, 1985.

R. Alan Ray, Assistant Professor, 1987, BS, Memphis State University, 1977; MA, 1980; PhD, University of Missouri, 1986.

Jon F. Schamber, Professor, 1980, BA, University of the Pacific, 1974; MA, 1975; PhD, University of Oregon, 1982.

Paul Turpin, Assistant Professor, 2007, BA University of California, Berkeley, 1994; MA, University of Southern California, 1997; PhD 2005.

## Master of Arts in Communication Concentration Communication Education

Students must complete a minimum of 32 units with a Pacific cumulative grade point average of 3.0 in order to earn the master of arts degree in communication with a concentration in communication education.

|          |   |   |
|----------|---|---|
| COMM 261 | Critical and Qualitative Research Methods | 4 |
| COMM 262 | Quantitative Research Methods             | 4 |
| COMM 271 | Graduate Seminar: Rhetorical Thought      | 4 |

|   |   |   |
|---|---|---|
| COMM 272  | Graduate Seminar: Interpersonal Communication | 4 |
| COMM 276  | Communication in Learning Settings            | 4 |
| Select one of the following courses from the School of Education: |   |   |
| EDUC 204  | Pluralism in American Education               |   |
| EDUC 209  | Curriculum Theory                             |   |
| EDUC 233  | Seminar: Multicultural Education              |   |
| Or an approved course by advisor                                  |   |   |
| Select one of the following:                                      |   | 4 |
| COMM 273  | Graduate Seminar: Mass Communication          |   |
| COMM 275  | Graduate Seminar: in Public Relations         |   |
| COMM 277  | Media Relations                               |   |
| COMM 278  | Political Communication                       |   |
| COMM 287  | Graduate Internship                           |   |
| COMM 289  | Graduate Practicum                            |   |
| Or an approved course by the advisor                              |   |   |
| Select one of the following options:                              |   | 5 |

### Thesis Option Plan A

|  |                   |  |
|--|-------------------|--|
| COMM 297                                 | Graduate Research |  |
| COMM 299                                 | Thesis            |  |
| 6-hour written comprehensive examination |                   |  |
| 1-hour oral examination                  |                   |  |

### Non-Thesis Option Plan B

|   |                            |  |
|---|----------------------------|--|
| COMM 291                                  | Graduate Independent Study |  |
| COMM Course (200 level)                   |                            |  |
| 12-hour written comprehensive examination |                            |  |
| 2-hour oral comprehensive examination     |                            |  |

## Master of Arts in Communication Concentration Political Communication

In order to earn the master of arts degree in communication with a concentration in political communication, students must complete a minimum of 32 units with a Pacific cumulative grade point average of 3.0.

|   |   |   |
|---|---|---|
| COMM 261  | Critical and Qualitative Research Methods | 4 |
| COMM 262  | Quantitative Research Methods             | 4 |
| COMM 271  | Graduate Seminar: Rhetorical Thought      | 4 |
| COMM 273  | Graduate Seminar: Mass Communication      | 4 |
| COMM 278  | Political Communication                   | 4 |
| Select one of the following:  |   | 4 |
| POLS Elective (One approved elective from Political Science department) |   |   |
| COMM Course (200 level course)  |   |   |
| COMM 287  | Graduate Internship                       | 2 |

|                                      |  |    |
|--------------------------------------|--|----|
|                                      |  | or |
|                                      |  | 4  |
| Select one of the following options: |  | 4  |

### Thesis Option Plan A

|  |        |  |
|--|--------|--|
| COMM 299                                 | Thesis |  |
| 6-hour written comprehensive examination |        |  |
| 1-hour oral comprehensive examination    |        |  |

### Non-Thesis Option Plan B

|   |  |  |
|---|--|--|
| COMM Course (200 level course)            |  |  |
| 12-hour written comprehensive examination |  |  |
| 2-hour oral comprehensive examination     |  |  |

## Master of Arts in Communication Concentration Media and Public Relations

Students must complete a minimum of 32 units with a Pacific cumulative grade point average of 3.0 in order to earn the master of arts degree in communication with a concentration in media and public relations.

|  |   |   |
|--|---|---|
| COMM 261   | Critical and Qualitative Research Methods | 4 |
| COMM 262   | Quantitative Research Methods             | 4 |
| COMM 273   | Graduate Seminar: Mass Communication      | 4 |
| COMM 275   | Graduate Seminar: in Public Relations     | 4 |
| Select one of the following:   |   | 4 |
| COMM 277   | Media Relations                           |   |
| COMM 278   | Political Communication                   |   |
| Select one of the following courses from the Department of Health, Exercise and Sports Sciences or School of Business: |   | 4 |
| HESP 274   | Advanced Sport Marketing and Promotions   |   |
| BUSI 109   | Management and Organizational Behavior    |   |
| BUSI 214   | Negotiation                               |   |
| BUSI 279   | Leadership                                |   |

Or an approved course by advisor

|                              |                     |   |
|------------------------------|---------------------|---|
| Select one of the following: |                     | 4 |
| COMM 287                     | Graduate Internship |   |
| COMM 289                     | Graduate Practicum  |   |

Select one of the following options: 4

### Thesis Option Plan A

|  |        |  |
|--|--------|--|
| COMM 299                                 | Thesis |  |
| 6-hour written comprehensive examination |        |  |
| 1-hour oral comprehensive examination    |        |  |

### Non-Thesis Option Plan B

|   |  |  |
|---|--|--|
| COMM Course (200 level elective or an approved course by advisor) |  |  |
| 12-hour written comprehensive examination                         |  |  |
| 2-hour oral comprehensive examination                             |  |  |

## Master of Arts in Communication Concentration Communication Studies

Students must complete a minimum of 32 units with a Pacific cumulative grade point average of 3.0 in order to earn the master of arts degree in communication with a concentration in communication studies,

|                               |   |    |
|-------------------------------|---|----|
| COMM 261                      | Critical and Qualitative Research Methods     | 4  |
| COMM 262                      | Quantitative Research Methods                 | 4  |
| Select five of the following: |   | 20 |
| COMM 271                      | Graduate Seminar: Rhetorical Thought          |    |
| COMM 272                      | Graduate Seminar: Interpersonal Communication |    |
| COMM 273                      | Graduate Seminar: Mass Communication          |    |
| COMM 275                      | Graduate Seminar: in Public Relations         |    |
| COMM 276                      | Communication in Learning Settings            |    |
| COMM 277                      | Media Relations                               |    |
| COMM 278                      | Political Communication                       |    |
| COMM 289                      | Graduate Practicum                            |    |
| COMM 287                      | Graduate Internship                           |    |

Select one of the following options: 4

### Thesis Option Plan A

|  |        |  |
|--|--------|--|
| COMM 299                                 | Thesis |  |
| 6-hour written comprehensive examination |        |  |
| 1-hour oral comprehensive examination    |        |  |

### Non-Thesis Option Plan B

COMM Course (200 level elective)

12-hour written comprehensive examination

2-hour oral comprehensive examination

### Communication Courses

#### COMM 114. Argumentation and Advocacy. 4 Units.

Students are introduced 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: COMM 027 or COMM 031 or COMM 043 or COMM 050, with a grade of C or higher.

#### COMM 116. Rhetorical Theory and Criticism. 4 Units.

The focus of this class is 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 117. Political Advocacy. 4 Units.

This course teaches the principles of persuasion in political contexts in the U.S. (types and characteristics of political audiences, official and unofficial advocacy campaigns, media framing of political news & commentary) from historical and theoretical perspectives. The focus is to make students aware of the constraints and opportunities in policy arguments and their public dissemination.

#### COMM 131. Media Production. 4 Units.

Practical and theoretical application of audio and video production techniques are covered in this course with an emphasis on aesthetic qualities of sight and sound productions. Some work involves student media facilities. A Lab fee is required. Prerequisite: COMM 031 or permission of instructor.

#### COMM 132. Writing for Media. 4 Units.

Examination and production of electronic and print writing techniques are studied in this course with an emphasis on writing news, information, and entertainment messages for the electronic and print industries. Some work involves student media facilities. A lab fee is required. Prerequisite: COMM 031.

#### COMM 133. Documentary Film as Persuasive Communication. 4 Units.

This course is a survey of documentary film beginning at the turn of the century and continuing through contemporary productions from a historical and rhetorical perspective. Students explore documentary film's origins and trace out its development in relation to its use and reception as students become familiar with the history of the documentary, the evolution of the genre, its rhetorical construction and its cultural influences.

#### COMM 134. Documentary Film Production. 4 Units.

This course is a field video production course in documentary production. Through a series of assignments, lectures and screening students learn the basics of video production for documentary style productions. This includes research, management, pre-production, production and post-production processes. Students work primarily within groups to produce documentary projects using digital production equipment and techniques. There are no prerequisites for this course.

#### COMM 135. Principles of Public Relations. 4 Units.

Principles and methods of public relations are discussed and analyzed. Study of the mass media as publicity channels acquaints 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 031.



**COMM 137. Public Relations Case Studies and Problems. 4 Units.**

This is an advanced course in public relations. The course engages students in case study research and application of public relations principles. There is both written and oral presentations with adherence to professional standards of excellence. Prerequisite: COMM 135.

**COMM 139. Theory of Mass Communication. 4 Units.**

An overview of major theories and research in mass communication is presented. Application of theories that explain and predict communication effects of political campaigns, advertising, entertainment, and information are discussed. Theoretical areas that are covered include socialization, information, diffusion, advertising, persuasion, and uses and gratification's research in addition to the discussion of the state, function, and form of theory in mass communication. Prerequisite: COMM 160 or permission of instructor.

**COMM 140. Writing for Public Relations. 4 Units.**

Theory and practice in public relations writing in the context of publicity are emphasized. Students learn the write news releases, backgrounds, business letters and feature stories. Prerequisite: COMM 135.

**COMM 143. Intercultural Communication. 4 Units.**

This course analyzes the major variables affecting interpersonal communication between persons of different cultural backgrounds.

**COMM 145. Human Communication Theory. 4 Units.**

Contemporary understandings of human interaction are studied beginning with epistemological issues as a framework. The course examines theory building, foundation theories of our discipline, and contextual theories.

**COMM 147. Nonverbal Communication. 4 Units.**

Major dimensions of nonverbal behavior exhibited by human beings in social interactional contexts are examined with special emphasis given to such areas as human proxemics, kinesics vocalics, haptics, and artifactual codes. Prerequisite: COMM 043 or permission of instructor.

**COMM 149. Introduction to Organizational Communication. 4 Units.**

Students are introduced to both a theoretical and an applied approach to the role of communication in various aspects of organizational functioning, such as motivation, leadership, decision-making, conflict management, message management, etc. Prerequisites: COMM 027 and COMM 043 or permission of instructor.

**COMM 150. The Capstone. 4 Units.**

This senior level capstone seminar devoted to expanding and applying communication course concepts that students have learned in the communication major and applying this knowledge to contemporary communication issues. Students undertake research projects and employ a variety of communication methodologies and theories to uncover the social, historical and ethical implications of their chosen communication interest. This course is designed to foster and promote communication competence, including analytic capacity, media literacy and ability to identify ethical issues in communication. Preparation for future professional work and development are explored. Senior standing.

**COMM 151. Community Based Learning. 2 Units.**

This senior-level capstone course provides students with a supervised learning experience in an off-campus, community-based organization. Students apply their knowledge of communication theories and skills to the needs of local organizations, which allows them to contribute to the public good. Senior Standing.

**COMM 152. Public Relations Administration. 4 Units.**

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 enhances critical skills of management for the understanding of public relations research, action/planning, communication and evaluation. Prerequisite: COMM 135. Prerequisite may be taken concurrently: COMM 137. Senior standing.

**COMM 155. Persuasion. 4 Units.**

This course is a survey of social psychological and communication approaches to social influence. Both past and contemporary theorizing is explored, and the methods of empirical research is discussed. Prerequisite: COMM 027 or permission of the instructor.

**COMM 160. Communication Research Methods. 4 Units.**

This course is 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 027, COMM 031, COMM 043 with a "C-" or better.

**COMM 187. Internship. 2-4 Units.**

Experiences in a work setting, are 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 087 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 087 course and a total of four in a COMM 187 course). Graded Pass/No credit.

**COMM 189. Practicum. 1-4 Units.**

This course is non-classroom experience in activities related to the curriculum under conditions that the appropriate faculty member determines. Students 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 089. Note: A student may not accumulate for credit more than eight units in any specific practicum. A total of four in a COMM 089 course and a total of four in a COMM 189 course). Prerequisite: COMM 089.

**COMM 189A. Advanced Print Practicum. 1-4 Units.****COMM 189B. Advanced Broadcast Practicum. 1-4 Units.****COMM 189C. Advanced Public Relations Practicum. 1-4 Units.****COMM 189D. Advanced Speech and Debate Practicum. 1-4 Units.****COMM 191. Independent Study. 2-4 Units.****COMM 197. Independent Research. 2-4 Units.****COMM 198B. Broadcast Practicum. 2-4 Units.****COMM 200. Communication and Consulting. 3 Units.**

This course explores topics related to the work of communication consultants. Through the course readings, presentations, workshops and other assigned work, students will acquire an understanding of the consulting process, including the role of the consultant, methods for undertaking a needs assessment, strategies for conducting training programs, and techniques for evaluating the work of consultants.

**COMM 201. Applied Public Relations. 3 Units.**

this course examines public relations strategies and tactics, as applicable to politics, non-profits and education. It will explore public affairs, public outreach and crisis management, and prepare students to communicate and utilize public relations with internal and external audiences.

**COMM 202. Public Communication Campaigns. 3 Units.**

The course is designed to provide a comprehensive overview of communication theory as it relates to attitudes and behavior changes involving public communication campaign issues. The course will also develop an understanding of the application of various quantitative and qualitative research methods to the design, execution, and evaluation of public communication campaigns.

**COMM 203. New Communication Technology. 3 Units.**

The course is designed to provide a comprehensive overview of a range of new communication technology and to give students basic skills and theoretical principles for their application to public communication through presentations, readings, videos placed on iTunes University and exercises. In addition, the course will enable students to identify, internalize and practice the necessary components of using new media technology for effective public communication.

**COMM 204. Media Relations: New Media World. 3 Units.**

The purpose of this course is to discuss and debate media relations principles and practices in relation to government, corporations, and public policy. From a scholarly examination of this unique and important form of communication, the course will survey the current trends and issues, and determine the validity of existing theories of media relations management from government, corporate, and community perspectives.

**COMM 205. Communication Decision Making. 3 Units.**

The purpose of this course is to assess communication strategies in decision making. From a scholarly examination of communication theories and decision making stages, the course will focus on the significance of communicating, administering, and evaluating decision making in professional environments.

**COMM 206. Management of Organizational Communication. 3 Units.**

This course examines both theoretical and applied approaches concerning the role of communication in various aspects of organizational function, such as motivation, leadership, decision-making, conflict management, and message management.

**COMM 207. Advanced Professional Communication. 3 Units.**

This advanced course both builds on basic oral and written professional communication skills, and goes well beyond them. The goals of this course are to provide opportunities for students to polish communication skills in different contexts, and to provide practice in and feedback on the interactive communication skills essential to successful professionals.

**COMM 214. Argumentation and Advocacy. 4 Units.**

This course introduces students to the theory and practice of argumentation, that is a method of decision-making that emphasizes reason giving evidence. The course includes instruction in debating, research, and critical writing, as well as advanced topics in the study of public deliberation. Prerequisites: three courses from COMM 027, 031, 043, 050 with a GPA of 2.5 or better, or permission of the instructor.

**COMM 216. Rhetorical Theory and Criticism. 4 Units.**

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 233. Documentary Film as Persuasive Communication. 4 Units.**

This course is a survey of documentary film beginning at the turn of the century and continuing through contemporary productions from a historical and rhetorical perspective. Students explore documentary film's origins and trace out its development in relation to its use and reception as students become familiar with the history of the documentary, the evolution of the genre, its rhetorical construction and its cultural influences.

**COMM 237. PR Case Studies and Problems. 4 Units.**

This advanced course in public relations engages students in case study research and application of public relations principles. Written and oral presentations with adherence to professional standards of excellence are required. Prerequisite: COMM 135.

**COMM 239. Theory of Mass Communication. 4 Units.**

This course is an overview of major theories and research in mass communication. Students examine the application of theories that explain and predict communication effects of political campaigns, advertising, entertainment, and information. Theoretical areas covered include socialization, information, diffusion, advertising, persuasion, and uses of gratification's research. The state, function, and form of theory in mass communication is discussed. Prerequisite: COMM 160 or permission of the instructor.

**COMM 245. Human Communication Theory. 4 Units.**

Students study contemporary understandings of human interaction. Beginning with epistemological issues as a framework, the course examines theory building, foundation theories of our discipline, and contextual theories.

**COMM 247. Nonverbal Communication. 4 Units.**

The course examines major dimensions of non-verbal behavior exhibited by human beings in social interactional contexts. Special emphasis is given to such areas as human proxemics, kinesics, vocalics, haptics, and artifactual codes. Prerequisite: COMM 043 or permission of the instructor.

**COMM 249. Introduction to Organizational Communication. 4 Units.**

This course takes both a theoretical and an applied approach to introduce the student to the role of communication in various aspects of organizational functioning, such as motivation, leadership, decision-making, conflict management, message management, etc. Prerequisites: COMM 043 and COMM 027 or permission of the instructor.

**COMM 252. Public Relations Administration. 4 Units.**

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 enhances critical skills of management for the understanding of public relations research, action/planning, communication and evaluation. Prerequisites: COMM 135 and COMM 137 (may be taken concurrently). Senior standing.

**COMM 255. Persuasion. 4 Units.**

This course is a survey of social psychological and communication approaches to social influence. Both past and contemporary theorizing are explored, and the methods of empirical research is discussed. Prerequisite: COMM 027 or permission of the instructor.

**COMM 260. Communication Research Methods. 4 Units.**

Students 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. A minimum GPA of 2.5 is required. Prerequisites: COMM 027, 031, 043, or permission of the instructor. Recommended for sophomores.

**COMM 261. Critical and Qualitative Research Methods. 4 Units.**

The course provides a graduate-level introduction to qualitative methods used in communication studies. Topics covered provide an overview of rhetorical analysis, critical and cultural studies, ethnography, and case studies in public relations. The course emphasizes the connection between the theoretical foundations of qualitative inquiry and their applications to communicative interactions. Applications include the writing of criticism, field work in ethnography, and case studies.

**COMM 262. Quantitative Research Methods. 4 Units.**

This course develops expertise in undertaking quantitative research at the graduate level. The seminar focuses on various quantitative methods, that include content analysis, survey research, experimental design, and scale construction, as well as statistical techniques for analyzing quantitative data.

**COMM 271. Graduate Seminar: Rhetorical Thought. 4 Units.**

This course provides a graduate level introduction into the theory and practice of rhetorical criticism. The course focuses on the role of the critic and six modes of criticism which are as follows: generic criticism, cluster, narrative criticism, narrative criticism, ideological criticism, metaphoric criticism, and fantasy theme criticism.

**COMM 272. Graduate Seminar: Interpersonal Communication. 4 Units.**

This course provides the student who has achieved a general understanding of interpersonal communication issues the opportunity to choose and explore a particular area of special interest. The first phase of the course focuses on discussion of several theories of interpersonal behavior. Beginning approximately the fourth week of class, each student brings in and presents two or more abstracts of published articles related to the interest area. The last session(s) provides the opportunity for students to share their conclusions with the others. Each student completes a paper which presents a research proposal in the area of interest. The term paper is due the last scheduled day of classes.

**COMM 273. Graduate Seminar: Mass Communication. 4 Units.**

The purpose of this course is to provide an introduction to mass communication theory and scholarship from three different scholarly perspectives: the social science or traditional paradigm, the critical theory paradigm, and the ethnographic paradigm. Students are not only exposed to the literature in each of these areas, but they are also asked to conduct small scale studies from two of the three paradigms. Because the class is a seminar, student presentations and discussion are the major activity during class time.

**COMM 275. Graduate Seminar: in Public Relations. 4 Units.**

The Graduate Seminar in Public Relations is designed through in-depth study and research to formalize understanding of Public Relations: theory and practice, functions in organizations and role in society. Students study concepts and theories related to public relations role in social systems. A "mock" APR tests knowledge at the end of the semester with both a written and an oral examination.

**COMM 276. Communication in Learning Settings. 4 Units.**

This graduate seminar is designed to develop knowledge of current communication education research and effective communication strategies for teaching undergraduate courses in communication.

**COMM 277. Media Relations. 4 Units.**

This course is to discuss and debate media relations, principles, and practice.

**COMM 278. Political Communication. 4 Units.**

This course is designed to provide a grounding in rhetorical approaches to persuasion in a political context, to acquaint students with the range of political ideologies, and to examine the theoretical and pragmatic opportunities and obstacles to advocacy in the current mediated content of national, regional, or location politics.

**COMM 287. Graduate Internship. 2 or 4 Units.****COMM 289. Graduate Practicum. 2 or 4 Units.****COMM 291. Graduate Independent Study. 2-4 Units.****COMM 295. Graduate Seminar. 4 Units.****COMM 297. Graduate Research. 1-4 Units.****COMM 299. Thesis. 2 or 4 Units.**

## Health, Exercise and Sport Sciences

Lara Killick, Director of Graduate Studies, (email: lkillick@pacific.edu)

The graduate program in Health, Exercise and Sport Sciences provides for scholarly study in the areas of Health & Exercise Science, Sport Pedagogy (Coaching Science or PE Single Subject Credential) and Sport Management. Each concentration contains a blend of core and elective

courses, enabling graduate students to design their program of study to meet their personal research and educational goals. These elective courses may be selected from other departments, including but not limited to Biology, Business, Chemistry, Communications, Education and Psychology. Each graduate student is provided with the choice between comprehensive exams or a thesis project. All graduate students are encouraged to include experiential learning and collaborative research in their program of study.

## Programs Offered

### Master of Arts

- Exercise Science
- Sport Pedagogy (focus on either Coaching Science or PE single subject teacher credential)
- Sport Management

## Admission Requirements

1. Undergraduate degree in health, exercise and sport sciences, a related discipline, or completion of essential undergraduate prerequisites, as determined by the Graduate Studies Committee.
2. Completion of the Graduate Records Examination (GRE)
3. Minimum 3.0 GPA (Cumulative *and* Major)
4. 3 Letters of Recommendation
5. Personal Essay/Statement
6. Official copies of Transcripts

## Health, Exercise and Sport Sciences Faculty

Pete Schroeder, Associate Professor & Chair, 2007, BS Truman State University, 1996; MA University of the Pacific, 1998; Ed.D. University of Missouri, 2003.

Jolene Baker, 2007, BA Whitworth College, 1997; MA San Diego State University, 2002; Ed.D. University of the Pacific, 2012

Margaret E. Ciccolella, Professor, 1985, BS, University of Colorado, 1970; MS, Brigham Young University, 1972; EdD 1978; JD, Humphreys College of Law, 1993.

Lara Killick, Assistant Professor, 2009, BA, Durham University, England, 2000; MA, University of Leicester, England, 2005; PhD, Loughborough University England, 2009.

Darrin Kitchen, Assistant Professor, 2005, BA, California State University, Chico, 1996; MS, California State University, Sacramento, 1997; EdD, University of the Pacific, 2006.

Linda Koehler, Associate Professor, 1989, BA, Purdue University, 1971; MS, University of New Mexico, 1975; PhD, University of Illinois, 1982.

Brian Moore, Assistant Professor, 2011, BS Loyola Marymount University, 1998; M.Ed. University of Virginia, 2000; Ph.D. University of California-Davis, 2012

Mark Van Ness, Associate Professor, 1999, BS, Wheaton College, 1990; MS, California State University, Sacramento, 1993; PhD, Florida State University, 1997.

Christopher Snell, Professor, 1990, BA, Bedford College, England, 1987; MS, University of Oregon, 1990; PhD, 1993.

## Master of Arts in Health, Exercise and Sport Sciences

### Plan A Thesis

Students must complete a minimum of 32 units with a Pacific cumulative and major/program grade point average of 3.0 in order to earn the master of arts degree in health, exercise and sport sciences. Twenty (20) of these units must be completed in health, exercise and sport sciences courses. Twelve (12) units may be completed in other departments.

Courses must be graded B- (2.7) or higher to be counted toward the degree program.

HESP 279 Research Methods in Sport Sciences 4

**Note: 1)** Fulfillment of the prerequisite requirement for : i.e., completion of a course in statistics or an introduction to research course that involves statistical analysis of data, with a B- or better. **2)** Units received for meeting this prerequisite requirement may not be included among the minimum units required for the master's degree. **3)** Courses may be taken concurrently.

Six HESP approved electives (12 of these units must be at the 200 level. Department may require that all must be at the 200 level) 24

HESP 299 Thesis 4

**Note: 1)** Students consult with an advisor regarding thesis committee members. The thesis committee should include a minimum of three members. A committee member may be selected from outside the department when an area of study crosses disciplinary lines. **2)** Students present an open colloquium that outlines the proposed thesis problem and basic design for problem-solving. **3)** Students must satisfactorily complete thesis during semester of registration or maintain continuing registration status until completed.

ORAL EXAM Must satisfactorily complete an open final oral examination encompassing the thesis and general professional knowledge.

## Plan B Non Thesis

Students must complete a minimum of 32 units with a Pacific cumulative and major/program grade point average of 3.0 in order to earn the master of arts degree in health, exercise and sport sciences. Twenty (20) of these units must be completed in health, exercise and sport sciences courses. Twelve (12) units may be completed in other departments.

Courses must be graded B- (2.7) or higher to be counted toward the degree program.

HESP 279 Research Methods in Sport Sciences 4

**Note: 1)** Fulfillment of the prerequisite requirement for : i.e., completion of a course in statistics or an introduction to research course involving statistical analysis of data, with a B- or better. **2)** Units received for meeting this prerequisite requirement may not be included among the minimum units required for the master's degree. **3)** Courses may be taken concurrently.

Seven HESP approved electives (16 of these units must be at the 200 level) 28

## Comprehensive Exam

Must satisfactorily complete a written comprehensive examination covering three general/comprehensive disciplinary areas.

**Note: 1)** The examination may be taken during the latter part of the semester in which coursework is being completed. The student's graduate faculty advisor serves as the coordinator of the Comprehensive Examination, and the coordinator has the responsibility of obtaining questions from the appropriate colleagues. The examination questions are forwarded to the Graduate Studies Coordinator/or designee who schedules and administers the examination. Following a review of the written examination by appropriate instructors, the results are transmitted to the student in writing. There is a departmental mechanism by which a student who has an unsuccessful result may apply for retesting in consultation with the Graduate Studies Committee.

## General Guidelines Applicable to both Plan A and Plan B Students

1. An individual Plan A or Plan B study program is to be approved by the end of the first semester of study. Programs developed by the

student and advisor are submitted to the department chair for review and approval. Changes in programs may subsequently be made by following the same review-approval process.

2. The student is assigned to a graduate faculty advisor based on student/faculty interest and in consultation with the Graduate Studies Coordinator.
3. All independent studies and/or independent research must be reviewed and approved by the department chair or Graduate Coordinator **prior to registration.**
4. Dates for open colloquiums, written comprehensive examinations and final oral examinations are to be coordinated through the Graduate Studies Coordinator.

Hlth, Exercise Sprt Sci Courses

### HESP 100. Introduction to Research in Health, Exercise and Sport Sciences. 3 Units.

This class is designed to develop research skills specific to the fields within health, exercise and sport sciences. Students learn to collect, review, synthesize and critically analyze scholarly research. Students are also able to create research questions and establish hypotheses, and they are supposed to a variety of data collection methods. In addition, students learn to apply appropriate techniques to interpret data and apply the results in health, exercise, and sport settings. The intention of this course is to develop analytical skills to enable the student to conduct and evaluate ethical research in your chosen field.

### HESP 120. Instructional Strategies and Methods of Teaching and Coaching. 4 Units.

This course is designed for the future physical educator or coach to deliver an effective, meaningful physical education curriculum to a diverse population of students. Emphasis is on physical education pedagogy; the skills and techniques that successful teachers use to ensure student learning. Students engage in guided teaching and systematic observation experiences at the primary and secondary school levels in an effort to introduce them to effective teaching and coaching behaviors.

### HESP 121. Analysis of Team and Individual Sports. 3 Units.

This is an applied motor learning approach to skill acquisition for team and Individual sports. In addition to personal skill development, students learn to prepare the introduction, explanation and demonstration of sports skills; develop and maintain skill levels through practice and reinforcement; analyze movement by systematically observing performance; utilize biomechanical concepts to analyze, correct and enhance performance and cognitive processes to improve performance. Ten to 15 different team and individual sports are presented and instruction time per sport varies. Lab fee required.

### HESP 123. Analysis of Nontraditional Games and Sports. 3 Units.

This is an applied motor learning approach to skill acquisition for nontraditional games and sports. A variety of nontraditional games and outdoor activities embedded in the CA curriculum framework for physical education. Clinical experience is provided for secondary students in the community. Eight to 10 different nontraditional games and sports are presented and instruction time per sport varies. Lab fee required.

### HESP 127. History and Philosophy of Sport and PE. 3 Units.

The course is designed to explore the development of sports and physical education from Ancient Greece to the present day. Students examine the organization, purpose and goals of sports and PE programs and critically evaluate a range of topics including but not limited to: performance-enhancing practices, equity and inclusion and health-related trends. The intention is to develop the students' understanding of the historical and philosophical foundations of sports and PE and examine the implications of these for goals, scope and components of sport and PE programs in America.

**HESP 129. Principles of Exercise Physiology. 4 Units.**

A course designed to meet the broad needs of Sports 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 are 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. Lab fee required.

**HESP 131. Assessment and Evaluation. 4 Units.**

This course is the development of competencies of Health, Exercise and 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. A Lab fee is required.

**HESP 133. Kinesiology. 4 Units.**

This course is a functional study of musculoskeletal anatomy and its relationship to human movement, posture, exercise prescription, and rehabilitation. Prerequisite: BIOL 011 or BIOL 051 or BIOL 061 or permission of instructor, and lab fee required.

**HESP 135. Sports Nutrition. 4 Units.**

This course provides a thorough study of the principles of nutrition as they relate to individuals who participate in sports or physical activity. Topics include calculating energy balance and the role of carbohydrates, fat, protein, vitamins, minerals and water in sports performance. The application of these topics for optimal metabolic functioning to a variety of physical activities is also presented.

**HESP 137. Psycho-Social Aspects of Sport. 3 Units.**

Students study the manner in which psychological factors influence sport performance and the manner in which sport participation can influence the human psyche. Theories concerning the relationship between human cognition, behavior and sport performance are covered. Particular emphasis is given to the practical application of these theories.

**HESP 139. Exercise Physiology. 4 Units.**

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 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.

**HESP 141. Sport, Culture and U.S. Society. 4 Units.**

This course is designed to explore the relationship between sport, culture and society in both the USA and the broader global world. Students learn to critically examine a wide range of topics that include, but not limited to, sport and gender, sport and race, global sports worlds, drugs and violence in sport, sport and politics and the crime-sport nexus. The intention of this course is to develop the student's sociological imagination and encourage the student to think critically about the role sport plays in the development of societies, ideologies and everyday life.

**HESP 142. Sport and Globalization. 4 Units.**

This course examines the interaction between sport and globalization. The foundation of the course is to provide a basic understanding of globalization and its underlying forces will provide a foundation for the course. The main focus of the course is the reciprocal nature of sport and globalization with special attention given to sport economic, cultural, and political issues. This course explores sport tourism and the Olympics as the two main intersections of sport and globalization.

**HESP 143. Prevention and Acute Care of Injury and Illness. 4 Units.**

This course provides an overview of the field of Athletic Training, its organization, and the responsibilities of a Certified Athletic Trainer (AT) as part of the sports medicine team. Instruction emphasizes prevention, recognition, and immediate care of injuries and illnesses associated with physical activity. This course is recommended for freshmen.

**HESP 145. Therapeutic Modalities. 4 Units.**

This course is 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. Topics include discussions of the physiological effects, indications, contra indications, dosage and maintenance of each modality. Recommended: BIOL 081. Lab fee is required. Junior standing.

**HESP 146. Health, Disease, and Pharmacology. 4 Units.**

This course is 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 also develop an awareness of the indications, contraindications, precautions, and interactions of medications used to treat those illnesses and diseases.

**HESP 147. Exercise Physiology I. 4 Units.**

This course is primarily designed to familiarize students with the theoretical background and hands-on skills to competently assess levels of wellness/fitness in a healthy, active, adult population. The topics and skills in the class encompass the latest information on the structure and function of body systems, training adaptations, testing and evaluation, exercise techniques, and program design. These skills are used to prescribe lifestyle and/or exercise modifications that result in individual progress toward a desired goal. The content of this course is highly focused toward the knowledge and skills required for successfully completing the National Strength and Conditioning Association's Certified Strength and Conditioning Specialist (CSCS) examination. Prerequisite: HESP 129 and upper-division class standing. Lab fee required.

**HESP 149. Clinical Evaluation and Diagnosis I. 3 Units.**

This course presents an in-depth study of musculoskeletal assessment of the lower extremity, thoracic and lumbar spine for the purpose of identifying (a) common acquired or congenital risk factors that would predispose an individual to injury and/or (b) musculoskeletal injury common to athletics or physical activity. Students receive instruction in obtaining a medical history, performing a visual observation, palpating bones and soft tissues, and performing appropriate special tests for injuries and conditions of the foot, ankle, lower leg, knee, thigh, hip, pelvis, lumbar and thoracic spine. This course is directed toward students who pursue athletic training and/or physical therapy professions. Prerequisite: HESP 133 or BIOL 071, and a lab fee is required.

**HESP 150. Clinical Evaluation and Diagnosis II. 3 Units.**

This course presents an in-depth study of musculoskeletal assessment of the upper extremity, cervical spine, head and face for the purpose of identifying (a) common acquired or congenital risk factors that would predispose an individual to injury and/or (b) musculoskeletal injury common to athletics or physical activity. Students receive instruction in obtaining a medical history, performing a visual observation, palpating bones and soft tissues, and performing appropriate special tests for injuries and conditions of the shoulder, upper arm, elbow, forearm, wrist, hand, fingers, thumb, cervical spine, head, and face. This course is directed toward students who pursue athletic training and/or physical therapy professions. Students may take this course independent of HESP 149. Prerequisite: HESP 133 or BIOL 071. Lab fee is required.

**HESP 151. Elementary Physical Education. 3 Units.**

This course is designed to prepare students for employment in an elementary school setting and provide them with the tools necessary to formulate and implement a comprehensive elementary PE experience for all students. Participants learn a wide range of teaching skills that facilitate the ability to create a quality active learning environment in elementary PE. Students explore effective teaching and assessment strategies, classroom management skills, the use of constructive feedback, the negotiation of diverse classrooms and the development of appropriate student learning outcomes. Students also are introduced to the subject matter of elementary PE and will undertake several teaching episodes. This course encourages students to engage in reflexive teaching practices, develop physically educated young people, maximize student involvement and enjoyment in PE and integrate core curriculum subject matter into PE lessons.

**HESP 152. Secondary Physical Education. 4 Units.**

This course is designed for junior/senior level students in the Sport Sciences/Sport Pedagogy concentration to deliver an effective, meaningful physical education curriculum to diverse students. This course covers curriculum components that include content, content organization, distinctive curriculum models and aspects of curriculum application. Students learn how to sustain a positive learning experience, conceive and plan meaningful curricula for school based instruction, and link the school program to opportunities for adolescents outside of school. Prerequisites: HESP 121, HESP 123, HESP 151.

**HESP 153. Equity and Inclusion in Physical Education. 4 Units.**

This course is designed to provide students with the theoretical and practical tools necessary to teach PE within a diverse classroom. Students learn a wide range of teaching skills that facilitate their ability to create a quality inclusive learning environment in Physical Education. Particular attention is paid to the following diversity categories: disabilities, gender, ethnicity and social class. Students explore a variety of adapted PE activities, federal/state legislative mandates and related policies, effective teaching and assessment strategies, classroom management skills, the use of constructive feedback and the development of appropriate student learning outcomes within diverse classrooms. Students undertake a number of peer-to-peer teaching episodes. The course encourages the students to engage in reflexive teaching practices, develop inclusive PE lessons sensitive to diversity issues and maximize student involvement and enjoyment in PE.

**HESP 155. Motor Learning. 3 Units.**

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 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, in addition to the application of motor learning principles to sport, physical education, industrial and physical therapy settings.

**HESP 157. The Clinician in Health and Exercise Science. 4 Units.**

This course integrates theory and practice and requires students to develop a research topic, consistent with an explicitly and narrowly defined area of interest. Permission of the instructor is required.

**HESP 159. Educator in Preparation. 3 Units.**

This course is designed for the future physical educator to deliver an effective, meaningful physical education experience to diverse students and help them sustain it through the knowledge to conceive and plan meaningful curricula, the administrative skill to produce an organizational structure within school time that optimizes the impact of the program, and the creative energy to link the school program to opportunities for children and youths outside of school. Prerequisites: HESP 131 and HESP 151.

**HESP 161. Biomechanics of Human Movement. 4 Units.**

This course is an introduction to the biomechanics of human movement and the analytic procedures and techniques for subsequent application in the sport sciences and related fields. The course includes 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 011 or BIOL 051 or BIOL 061 or permission of instructor, and a lab fee is required.

**HESP 163. Therapeutic Exercise. 4 Units.**

This course is 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: HESP 133 or permission of instructor, and a lab fee is required.

**HESP 165. Legal Aspects of Health, Exercise and Sport. 4 Units.**

This course addresses legal issues and responsibilities relevant to professionals in the areas of health and exercise science, 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.

**HESP 167. Introduction to Sport Management. 4 Units.**

This course is for beginning sport management students and students interested in sport business. Students study general academic, managerial, and business concepts related to sport and explore the variety of sport and fitness-related businesses and organizations within the public and private sectors. Potential career opportunities are considered.

**HESP 169. Managing Sport Enterprises. 4 Units.**

The purpose of this class is to introduce students to management and leadership in the sport industry. The unique attributes and structures of sport organizations will be explained. The course then covers multiple frames of organizational analysis and applies these to sport settings. In addition, students learn managerial and leadership skills and develop a management philosophy suited to the sport industry. Prerequisites: HESP 167 and HESP 187A.

**HESP 171. Sport Economics and Finance. 4 Units.**

This course is designed to address the respective areas of sport economics, finance, and labor relations. Both theoretical and practical aspects are explored. Students examine sport as a multi-billion dollar industry and analyze the role of sport within the larger socio-economic structure within the United States and internationally. Prerequisites: ECON 053 and BUSI 031. Junior standing.

**HESP 172. Case Analysis in Sport and Fitness Management. 4 Units.**

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 focuses on designing and implementing the prospectus, feasibility studies, and the analysis of organizational effectiveness. Topics of special interest include the planning and controlling of resources, facility operations, and strategies for production and operations management.

**HESP 173. Health Care Management and Professional Development. 4 Units.**

This course is an in-depth study of the management of health care organizations related to finances, facilities, equipment, organizational structures, medical/insurance records, risk management, human relations, and personnel. Practical and conceptual skills are taught to help students focus on more efficient health care delivery. Also covered is the development of leadership skills, future trends in health care management, guidelines for designing effective work groups and managing conflict.

**HESP 174. Sport Marketing and Promotions. 4 Units.**

This course focuses on three main aspects of sports marketing. First, students gain the knowledge necessary to market sport products. Second, the course covers the manner in which sport is used as a marketing tool. Finally, students learn about the variety of forms of public relations that are used by sport organizations. In the process, students become familiar with the role of technology in sport marketing and public relations. Sophomore standing.

**HESP 175. Sport Event and Facility Management. 4 Units.**

This course is a comprehensive investigation into the principles needed to design, implement, and manage all types of sport events and facilities. Planning, logistics, risk management, human resource management, and marketing of events and facilities are given special attention. Opportunities for the application of these principles are also provided. Prerequisites: BUSI 107 and HESP 174. Junior standing.

**HESP 177. Exercise Physiology II. 4 Units.**

This course seeks to fulfill two main objectives: 1) To establish a foundational understanding of clinical exercise testing to examine cardiac, metabolic and respiratory pathology. 2) To provide a more in-depth examination of several basic exercise physiology concepts introduced in HESP 129. These include lactate kinetics, oxygen dynamics, pulmonary function and cardiovascular function during exercise and in response to training. Prerequisite: HESP 129 and upper division class standing. Lab fee required.

**HESP 179. Introduction to Research. 4 Units.**

This course covers the rationale for and status of professional research; research designs and their applicability to students' disciplines, review, critique and synthesis of selected literature; development of research proposal and pretest of instrument.

**HESP 182. Exercise Testing and Prescription. 4 Units.**

This course is primarily designed to provide students with the hands-on training and theoretical background to competently assess levels of wellness/fitness in an "apparently healthy" (i.e. low risk) adult population. The topics and skills addressed include health screening protocols/risk stratification, use of Informed Consent documents, as well as measurement protocols for the health-related components of fitness (i.e. cardiorespiratory fitness, muscular fitness, flexibility, body composition). These skills are then used to prescribe lifestyle and/or exercise modifications that result in individual progress toward a desired goal. The content of this course is highly focused toward the knowledge and skills required for taking the ACSM Fitness Specialist (HFS) certification exam. Prerequisite: HESP 147.

**HESP 187. Internship in Health and Exercise Science. 4 Units.**

This course provides an opportunity for qualifying students to work in an area of Health and Exercise Science that interests them. Prerequisites: HESP 157, GPA 2.0, no grade below "C-" in major, and approval of course supervisor.

**HESP 187D. Sport Pedagogy Internship I. 2 Units.**

This class involves the student completing a semester-long internship connected to their chosen field of sport pedagogy. This internship develops their evaluation skills and encourage the student to engage in reflexive teaching practices to better prepare themselves for the challenges and terrain of their post-graduation employment. Prerequisite: HESP 131.

**HESP 187E. Sport Pedagogy Internship II. 4 Units.**

This class involves the student completing a semester-long internship connected to their chosen field of sport pedagogy. This internship develops their evaluation skills and encourage the student to engage in reflexive teaching practices to better prepare themselves for the challenges and terrain of their post-graduation employment. Prerequisite: HESP 187D.

**HESP 189. Practicum: Coaching. 1 or 2 Unit.**

The practicum offers non-classroom experiences in activities related to Sports Sciences, under conditions determined by the appropriate faculty member. HESP 189 represents advanced practicum work involving increased independence and responsibility. Enrollment is limited to eight units maximum of HESP 089/189A, B, C, D, H, J, K offerings and no category within a course may be repeated for credit. A list of specific courses follows. Grading option is Pass/No Credit only.

**HESP 189A. Practicum: Adapted Physical Education. 2 Units.**

These courses provide advanced practicum work in Sport Medicine. See HESP 089 for subcategories and enrollment limitations. Prerequisite: HESP 169 with a "C-" or better.

**HESP 189B. Practicum: Athletic Training III. 2 Units.**

This is a clinical education course in the field of athletic training. It incorporates 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: HESP 089K.

**HESP 189C. Practicum: Biomechanics. 2 Units.**

These courses provide advanced practicum work in Sport Medicine. See HESP 089 for subcategories and enrollment limitations. Grading option is Pass/No Credit only.

**HESP 189D. Practicum: Exercise Physiology. 2 Units.**

These courses provide advanced practicum work in Sport Medicine. See HESP 089 for subcategories and enrollment limitations. Grading option is Pass/No Credit only.

**HESP 189E. Practicum: Sport Pedagogy. 2 Units.**

This course offers a supervised leadership experience in the elementary or secondary school setting. The student works as a physical education specialist and develops as well as conducts appropriate physical activity programs. Prerequisites: HESP 151 or HESP 159 and permission of instructor.

**HESP 189F. Practicum: Coaching. 2 Units.**

Students are assigned to an intercollegiate or interscholastic sports team for the semester and participate in practice sessions throughout the specific sport season. Written guidelines are developed cooperatively by the supervisor, coach and student. Prerequisites: HESP 139 and HESP 155.

**HESP 189G. Practicum: Coaching. 2 Units.**

Students will be assigned to an intercollegiate or interscholarship 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: HESP 139 and HESP 155.

**HESP 189H. Practicum: Sports Law. 2 Units.**

These courses provide advanced practicum work in Sport Medicine. See HESP 089 for subcategories and enrollment limitations. Grading option is Pass/No Credit only.

**HESP 189J. Practicum: Kinesiology. 2 Units.**

These courses provide advanced practicum work in Sport Medicine. See HESP 089 for subcategories and enrollment limitations. Prerequisite: HESP 133 with a "C-" or better. Grading option is Pass/No Credit only.

**HESP 189K. Practicum: Athletic Training IV. 2 Units.**

This clinical education course is in the field of athletic training. It incorporates 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 go through final preparations for the NATABOC examination. Prerequisite: HESP 189B.

**HESP 191. Independent Study. 1-4 Units.****HESP 193. Special Topics. 1-4 Units.**

**HESP 195. Ethical Issues in Sport. 3 Units.**

The primary goal of this course is to enhance student awareness regarding their values, their evolving moral and ethical codes, and the ways of addressing moral problems. Students examine various ethical theories and questions encountered in the field of Sport Sciences. As part of this course, students need to identify necessary information from various sub-disciplines in order to make professional and ethical decisions. Senior standing.

**HESP 197. Independent Research. 1-4 Units.****HESP 233. Advanced Kinesiology. 4 Units.**

This graduate seminar considers the musculoskeletal analysis of human movement, posture, exercise prescription, and rehabilitation. Prerequisite: HESP 133 or permission of instructor. Graduate standing.

**HESP 235. Graduate Nutrition/Exercise Metabolism. 4 Units.**

Students study 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.

**HESP 237. Advanced Sport Psychology. 4 Units.**

This course provides a detailed examination of the theories and concepts that explain how the human psyche affects sport performance. Particular emphasis is given to the application of these concepts for coaches and athletes.

**HESP 239. Advanced Applied Sport Psychology. 4 Units.**

This graduate seminar is designed for advanced students to explore theoretical concepts of psychology as they relate to individual and group behavior in physical activity environments.

**HESP 241. Advanced Sociology of Sport. 4 Units.**

This graduate seminar deals 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 are covered, as well as the relationship of sport and social stratification such as gender, race, and class.

**HESP 242. Global Sports Worlds. 4 Units.**

Like all social institutions in the United States, global forces are increasingly shaping the sports worlds we live in. Understanding this phenomenon is imperative for future practitioners with sport sciences. This course is designed to explore this relationship between sport and globalization processes. Students learn to identify the characteristics of the sport-globalization nexus and critically examine its consequences. Through a host of experiential learning opportunities, students develop a deeper understanding of the implications of global sports worlds in your field of study. The eight pre-trip meetings take place during the Spring semester (one per week from Spring break onwards). The trip to London is scheduled after these meetings each year. The students register for the class as a Spring course. Travel required. Prerequisite: HESP 279 with a "B-" or better or permission of the instructor. Graduate standing.

**HESP 247. Advanced Exercise Physiology. 4 Units.**

This course is an advanced study of physiological responses to exercise with emphasis on laboratory methods and procedures for testing and demonstrating these responses for research application. Lab fee is required. Prerequisites: HESP 147 and permission of the instructor.

**HESP 248. Applied and Clinical Physiology. 4 Units.**

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 to enhance health, fitness, and performance. This course serves as a foundation for clinical exercise science and the use of exercise testing in the study of cardiac, metabolic and respiratory pathology.

**HESP 253. Advanced Adapted Physical Education. 4 Units.**

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.

**HESP 255. Advanced Motor Learning. 4 Units.**

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 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.

**HESP 257. Advanced Clinician in Sports Medicine. 4 Units.**

This course integrates theory and practice and requires students to develop a research topic, consistent with an explicitly and narrowly defined area of interest. Prerequisite: Permission of instructor.

**HESP 259. Professional Preparation in Sport Sciences. 4 Units.**

This course is designed for the future professional practitioner who wishes to deliver an effective, meaningful clinical or educational experience to a diverse population. The course helps them sustain the experiences 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 engage in an in-depth study of the research on teaching and the application of research-based knowledge to the teaching and clinical professions.

**HESP 261. Advanced Biomechanics of Sport. 4 Units.**

This course is an 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 and critical evaluation of current research findings in biomechanics. Lab fee required. Prerequisite: an undergraduate course in kinesiology or biomechanics or permission of instructor.

**HESP 265. Advanced Sports Law. 4 Units.**

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.

**HESP 269. Advanced Management of Sport Enterprises. 4 Units.**

The purpose of this class is to prepare graduate students to lead in the unique business environment of sport. The unique governance structure of intercollegiate athletics and professional sports is presented. Students then develop a multi-frame approach to management of sport organizations. Students also explore the subjective nature of leadership to develop a style best suited for sport. Emphasis is placed on the integration of applied research that uses leadership and management theories.

**HESP 272. Advanced Case Analysis of Sport and Fitness Management. 4 Units.**

This graduate seminar is designed to provide breadth and depth of topical knowledge beyond that covered in the introductory course.

**HESP 274. Advanced Sport Marketing and Promotions. 4 Units.**

This course provides an in-depth study of the unique nature of sport marketing that focuses on three areas. Students learn how to market sport products and events. The course explores the many mechanisms through which sport is used as a marketing tool. Finally, students learn to gain maximum benefit from the relationship between sport and the media.



**HESP 275. Advanced Sport Management. 4 Units.**

This class provides graduate students with the knowledge base necessary to lead the mega-events and manage multipurpose and single-use facilities common in sport. The first portion of the course is devoted to event planning, marketing and execution. The second part of the course focuses on planning, design and maintenance of sports facilities. Special attention is given to the environmental impact of sporting events and facilities.

**HESP 279. Research Methods in Sport Sciences. 4 Units.**

This in-depth evaluation of the various methods used in the disciplines of the sport sciences, includes experimental, descriptive, qualitative and historical approaches. Students learn the means of selecting a research problem and planning its solution as well as important considerations to regard in reviewing the literature. The course also includes an overview of proper form and style in research writing. Student must complete a fully developed Research Proposal as part of this course. Prerequisite: a course in statistics. Graduate standing.

**HESP 287. Advanced Internship: Sport Medicine. 4 Units.**

This course provides an opportunity for qualifying students to work in an area of sports medicine that interests them. Prerequisites: HESP 257 with a "C" or better and permission of instructor. Graduate standing. Grading option is Pass/No Credit only.

**HESP 287A. Advanced Internship: Sport Management. 4 Units.**

This course provides professional leadership experience for graduate students. Agency placement is based on student goals and professional leadership background. Grading option is Pass/No Credit only.

**HESP 287B. Advanced Internship: Sport Management. 4 Units.**

This course provides professional leadership experience for graduate students. Agency placement is based on student goals and professional leadership background. Grading option is Pass/No Credit only.

**HESP 289A. Advanced Practicum: Sport Management. 4 Units.**

This course is designed to provide students with a practical experience in the application of administrative theory. Prerequisite: HESP 169 or HESP 269 with a "B-" or better. Grading option is Pass/No Credit only.

**HESP 289B. Advanced Practicum: Coaching. 2-4 Units.**

This practicum offers non-classroom experiences in activities related to Sports Medicine, under conditions determined by the appropriate faculty member. HESP 189 represents advanced practicum work that involves increased independence and responsibility. Enrollment is limited to six units maximum of HESP 089/189A, B, C, D offerings and no category within a course may be repeated for credit. Grading option is Pass/No Credit only.

**HESP 291. Independent Study. 1-4 Units.****HESP 293. Special Topics. 3 or 4 Units.****HESP 297. Independent Research. 1-4 Units.****HESP 299. Thesis. 4 Units.**

## Psychology

Scott Jensen, Chair

Matt Normand, Director of Graduate Studies

### Program Offered

**Master of Arts in Psychology**

The department offers a program of graduate study that leads to the MA degree in psychology with special strengths in behavior analysis and behavioral clinical psychology. Students receive formal academic training in behavior analytic principles and techniques. All students obtain experience in relevant applied settings and/or teaching assistantships. The design and conduct of research is required throughout a student's graduate work and students are provided with research mentorship and supervision.

The program prepares students for **1)** entrance into doctoral programs and for **2)** employment in applied behavior analysis settings. Students who apply to the doctoral preparation track are those who wish to increase their experiences and skills in order to become more competitive doctoral program applicants. Students in this track are interested in obtaining their doctorate in clinical or counseling psychology (behavioral emphasis) or behavior analysis. Previous graduates have been successful in entering quality doctoral programs and obtaining employment in a variety of settings.

Opportunities for specialized training, applied experience, and research are available in many settings that include:

1. The Community Re-Entry Program, a multifaceted treatment program for adults diagnosed with chronic mental illness closely affiliated with the Psychology Department. It is designed to move adults diagnosed with chronic mental illness to greater independence, and it provides special intervention and research opportunities with individuals diagnosed with schizophrenia;
2. Behavior Assessment and Intervention Service, a program that provides in-home intervention for people with developmental disabilities in conjunction with Valley Mountain Regional Center;
3. Contracts with local schools, several of which provide opportunities for experience in behavioral assessment and intervention. Most of these services are provided in the field, such as working with students and their teachers in area schools and working with parents of typically developing children with behavioral problems.
4. Additional practicum facilities in the community include Stockton Children's Home, Regional Youth Services Program, San Joaquin County Mental Health Services, Head Start, Stockton Unified School District, and the Transitional Learning Center for homeless children. The Behavior Analyst Certification Board (BACB)® has accepted many of these applied experiences toward eventual board certification in Behavior Analysis.

Our course sequence and supervised experience have been approved by the BACB® and our students have had a high rate of sitting for and passing the BCBA® exam. Doctoral preparation students have a high rate of being accepted into quality doctoral programs. A list of former graduate students and their current employment or academic placements upon graduating our program is available upon request.

### Psychology Faculty

Scott A. Jensen, Associate Professor and Chair, 2006, BS, Brigham Young University, 1998; MS, Colorado State University, Fort Collins, 2003; PhD, 2004., sjensen@pacific.edu

Matthew P. Normand, Associate Professor and Director of Graduate Studies, 2007, BA, Western New England College; MA, Western Michigan University, 1999; MS, Florida State University, 2002; PhD, 2003, BCBA., mnormand@pacific.edu, <http://www.theskinnerbox.com>

Carolynn S. Kohn, Associate Professor, 2003, BA, University of California Santa Barbara; MA, Hahnemann University, 1996; PhD 2000; BCBA., ckohn@pacific.edu

### Master of Arts in Psychology

Students must complete a minimum of 30 units with a Pacific cumulative grade point average of 3.0 in order to earn the master of arts in psychology.

Minimum 18 units, including each of these required courses:

|          |   |   |
|----------|---|---|
| PSYC 207 | Psychology of Learning                    | 4 |
| PSYC 283 | Research Design                           | 4 |
| PSYC 251 | Behavioral Treatment/Applications         | 4 |
| PSYC 253 | Supervising and Teaching Behavior Changes | 2 |

Select one of the following options:

**A) Doctoral Preparation Track**

PSYC Three electives from 200 level (PSYC 297 - Graduate Independent Research recommended)

**B) Applied Behavior Analysis Track**

PSYC 258 Behavioral Assessment

Two PSYC behavior analysis electives (e.g., Behavioral Medicine, Radical Behaviorism, Controversial Treatments in Applied Settings)

*Note: 1) Students are expected to spend four semesters and one summer in residence in Stockton as part of completing the program. All students must complete a one year research apprenticeship with the same faculty research mentor during their first year. During their second year, students may continue with the same faculty mentor, change faculty mentors, or remain with the same faculty mentor and join additional research teams.*

Psychology Courses

**PSYC 103. Statistical Inference in Behavioral Sciences. 4 Units.**

Students examine 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 are studied and include chi square, t-test and analysis of variance. Students learn how to use "eyeball" estimation procedures to facilitate understanding of statistical concepts, and learn how to use spread sheet and statistical computer programs for data analysis. Prerequisite: MATH 003 or appropriate score on the Mathematics Placement Test. PSYC 103 (or MATH 035 or MATH 037) with a grade of C- or better is required for psychology majors. Sophomore standing.

**PSYC 105. Experimental Psychology. 5 Units.**

This course introduces to research methodology in the field of psychology. The course covers experimental design and statistical analysis appropriate to various designs and includes conducting reviews of research literature, writing research proposals and reports, and research ethics. All students use word processing and statistical analysis computer programs. All students complete an individual experimental research project. This course is required for psychology majors. Prerequisite: PSYC 103 or MATH 035 or MATH 037 with a grade of C- or better. Recommended: PSYC 031 and/or PSYC 053 taken in sophomore year. Sophomore standing.

**PSYC 107. Psychology of Learning. 4 Units.**

This course focuses on the scientific investigation of learning and behavior. Both experimental and related theoretical developments are considered, as well as applications of the basic principles of learning to issues of social significance. Prerequisite: PSYC 105 or permission of instructor.

**PSYC 109. Biological Psychology. 4 Units.**

This course investigates the relationship of the nervous system to mental processes and behavior. Lecture and laboratory exercises introduce current research and methodology, clinical application, and hands-on demonstration of this rapidly developing field. Topics include the evolution and development of the human brain, neuroanatomy and neural transmission, biological rhythms, sensory and motor systems, sleep, emotional control, brain damage and disease, and many others. Prerequisite: PSYC 105 with a "C-" or better, or permission of instructor.

**PSYC 110. Psychoactive Drugs and Behavior. 4 Units.**

This course is an intensive study of how drugs affect psychological processes and behavior. The course covers 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 is required.

**PSYC 111. Abnormal Psychology. 4 Units.**

Students study of the causes, classification and treatment of abnormal behavior. The class is 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 cannot 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 pharmacy.

**PSYC 115. Cognitive Psychology. 4 Units.**

PSYC 115 is an introduction to the field of cognitive psychology that focuses on the mental processes that underlie thinking, remembering/forgetting, perception, attention, knowledge, language, and problem solving. Lecture and laboratory activities emphasize the current research on cognition, as well as applications of research findings. Prerequisite: PSYC 105 or permission of instructor.

**PSYC 125. History and Systems of Psychology. 4 Units.**

This senior capstone course traces the development of "modern psychology" from its birth in early philosophy to its founding as an independent discipline in the late 1800s to its current status with an emphasis on modern behaviorism and cognitive psychology as the two dominant theoretical systems in psychology. In addition, other modern developments such as evolutionary psychology and cognitive neuroscience are discussed. The course focuses on specific content areas and ideas in psychology and the individuals who are most credited with their development. Prerequisites: PSYC 105 and or permission of instructor. Junior standing. The course is required for psychology majors and it is recommended for the senior year.

**PSYC 129. Developmental Psychology. 4 Units.**

Students compare major models and specific theories of the development of behavior and examine an overview of research methodology that includes those methods particularly appropriate to the study of developmental phenomena. The major emphasis is on current empirical theory and data about child development. Field observation of children and/or adolescents is required. Prerequisite: PSYC 105 or permission of the instructor.

**PSYC 131. Adolescence and Young Adulthood. 4 Units.**

This course is the 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. The material is selected to interest both 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. Prerequisites: sophomore standing is required.

**PSYC 133. Adulthood and Aging. 4 Units.**

This course provides an overview of developmental issues that occur in the adult and aging population. Topics include developmental theories, research techniques, and the biological, psychological, and sociological aspects of aging. Some emphasis is placed on providing psychological services to the aging population. Some field experiences in nursing homes will be part of the course. Sophomore standing is required.

**PSYC 140. Psychology of Gender. 4 Units.**

This course introduces students to psychological research on the experiences, behaviors, and abilities of men and women. A comparative approach is used to examine historical, contemporary, and cultural differences. Topics include gender differences and similarities in mental abilities, social behavior, mental health issues, and experiences of men and women in the workplace. Sophomore standing.

**PSYC 144. Psychological Assessment. 4 Units.**

An overview of the statistical underpinnings of psychological tests which include reliability, validity, and test creation as well as an overview of the most commonly administered psychological tests and their appropriate applications and use. The ethics of test creation and administration as well as practical application of various assessment techniques are discussed. This class is recommended for students who plan to pursue graduate training in clinical psychology. Prerequisite: PSYC 103.

**PSYC 149. Sensation and Perception. 4 Units.**

This course is an introduction to human sensory systems and perception. Building upon a detailed analysis of visual processing, students explore through lecture, readings, demonstrations, case studies, and investigations how scientists research the various sensory systems and how they shape our experience of, and interaction with the world. This draws on diverse fields such as biology, physics, philosophy and art in addition to psychology. This course is open to all students.

**PSYC 152. Parenting. 4 Units.**

This course discusses the role of parents in society as well as what is effective parenting. The course explores the available research on effective parenting as well as discussing and experiencing effective interventions to improve parenting skills. The course is intended to focus on both personal application as well as larger scale societal issues and interventions for others. Prerequisite: Sophomore standing.

**PSYC 154. Child Mental Health. 4 Units.**

Students study the casual factors that relate to the development of mental health problems in children. The emphasis is on the environmental issues associated with specific disorders that include behavioral learning histories, cognitive behavioral patterns, and family/parenting issues. Socio-cultural contributions to mental health are presented in addition to discussion of Evidence-Based Treatments for commonly diagnosed disorders and problems in childhood. Sophomore standing.

**PSYC 155. Couples and Family Therapy. 4 Units.**

This course is an introduction to couples and family therapy, theory, and practice. Behavioral psychology is used as the foundation, and students learn a broad systems perspective. Students are familiarized with the history of family therapy, as well as current family therapy strategies. Sophomore standing.

**PSYC 156. Behavioral Medicine/Health Psychology. 4 Units.**

Students examine the overlapping fields of behavioral medicine and health psychology. The course 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. Topics include health promotion and medical compliance. This course may interest any student who aspires to become a health care professional in health psychology, clinical psychology, medicine, pharmacy, physical therapy, or nursing. Prerequisite: PSYC 053. Junior or Senior standing recommended.

**PSYC 158. Behavioral Assessment. 4 Units.**

An overview of behavioral assessment techniques is examined. Specific topics include data collection, inter-observer agreement, social validity, treatment integrity, functional assessment, stimulus preference assessment, indirect assessment techniques, and functional analysis procedures. Prerequisites: PSYC 053 and permission of instructor.

**PSYC 166. Psychology of Personality. 4 Units.**

This course is a survey of contemporary personality theories and research. The course focuses on the study of individual difference and how these differences are explained and measured using different personality assessment devices. This course is recommended for students who aspire to enroll in graduate study of clinical psychology, school psychology, marriage and family counseling, child development, or social work. It may interest those who want to learn more about themselves and the diversity of the species. Junior or Senior standing recommended.

**PSYC 167. Psychology and the Law. 4 Units.**

The course examines the contribution of psychology to the judicial system. Students explore both the role of forensic psychologists in criminal cases and applied psychological research designed to assist police and courts in their functions. Case studies illustrate forensic issues, such as examining serial killers and the uses and abuses of police interrogation in criminal cases. Topics include insanity and incompetency of defendants; psychopathy; problems with eyewitness testimony; issues involved with sentencing (including the death penalty); the mistreatment of children and adolescents by the justice system; and false confessions. Students visit actual course trials early in the semester. Not recommended for first-year students.

**PSYC 169. Social Psychology. 4 Units.**

Students study 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: PSYC 105 or permission of the instructor.

**PSYC 183. Research Design. 4 Units.**

This course is the design and analysis of research using single subject and group designs. Prerequisite: PSYC 105 and permission of instructor.

**PSYC 187. Internship. 1-4 Units.**

This internship course gives experiences in a work setting and is contracted on an individual basis. PSYC 187 represents advanced internship work that involves 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 is the only grading.

**PSYC 189. Practicum. 1-4 Units.**

The practicum offers non-classroom experiences in activities related to the curriculum under conditions that is determined by the appropriate faculty member. PSYC 189 represents advanced practicum work which involves 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 is the only grading.

**PSYC 191. Independent Study. 1-4 Units.****PSYC 195. Seminar. 4 Units.****PSYC 197. Independent Research. 1-4 Units.****PSYC 207. Psychology of Learning. 4 Units.**

This course focuses on the scientific investigation of learning and behavior. Both experimental and related theoretical developments are considered, as well as applications of the basic principles of learning to issues of social significance.

**PSYC 220. Clinical Neuropsychology. 4 Units.**

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 to evaluate 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 to develop a clearer understanding of both normal and abnormal brain functioning are studied. Permission of instructor.

**PSYC 251. Behavioral Treatment/Applications. 4 Units.**

This course focuses on the application of behavior analytic principles and methods in applied settings, with an emphasis on behavior change procedures, maintenance and generalization of behavior change, and emergency interventions. Topics addressed include the definition and characteristics of applied behavior analysis, selection and evaluation of intervention strategies, measurement of behavior, display and interpretation of behavioral data, and behavioral assessment. Additionally, basic behavioral principles, single-case experimental design, and ethical issues are discussed in the context of behavioral assessment and intervention. Open This course is open only to graduate students with permission.

**PSYC 253. Supervising and Teaching Behavior Changes. 2 Units.**

This course introduces graduate students to the role of practicum supervisor and instructor. Under the supervision of the PSYC 053 course instructor, students develop, sustain, and evaluate their own interventions at pre-approved externship sites. Students conduct bi-weekly discussion groups that provide undergraduate students enrolled in PSYC 053 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 053 instructor. Prerequisites: PSYC 251, PSYC 258, extensive training in behavior analysis and permission of instructor.

**PSYC 254. Child Mental Health. 4 Units.**

Students study the casual factors related to the development of mental health problems in children. The emphasis is on the environmental issues associated with specific disorders, that include behavioral learning histories, cognitive behavioral patterns, and family/parenting issues. Socio-cultural contributions to mental health are presented in addition to discussion of Evidence-Based Treatments for commonly diagnosed disorders and problems in childhood.

**PSYC 255. Couples and Family Therapy. 4 Units.**

This course is an introduction to couples and family therapy, theory, and practice. Behavioral psychology is used as the foundation, and students learn a broad systems perspective. Students are familiarized with the history of family therapy, as well as current family therapy strategies.

**PSYC 256. Behavioral Medicine/Health Psychology. 4 Units.**

Students examine the overlapping fields of behavioral medicine and health psychology. The course 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. Topics include health promotion and medical compliance. This course is of interest to any student who aspires to become a health care professional in health psychology. clinical psychology, medicine, pharmacy, physical therapy, or nursing.

**PSYC 258. Behavioral Assessment. 4 Units.**

Students study an overview of behavioral assessment techniques is examined. Specific topics covered include data collection, inter-observer agreement, social validity, treatment integrity, functional assessment, stimulus preference assessment, indirect assessment techniques, and functional analysis procedures.

**PSYC 283. Research Design. 4 Units.**

Students learn the design and analysis of research using single subject and group designs.

**PSYC 285E. Behavior Analysis Internship I. 1 Unit.**

This course provides clinical experience with the University of the Pacific Behavior Analysis Services Program. This course includes practice in conducting behavioral interventions, designing, implementing, and monitoring behavior analysis programs for clients. Students oversee the implementation of behavioral programs by others, attending behavioral program planning meetings, and reviewing program-relevant literature. Faculty and staff will observe interns engaging the activities in the natural environment at least once every two weeks, and provide specific feedback to interns on their performance. Multiple populations and sites will be available, including but not limited to, typically developing school-aged children in school and home settings, and individuals with psychiatric diagnoses and/or developmental disabilities in their homes or in community settings. Permission of instructor. Pass/No Credit grading only.

**PSYC 285F. Behavior Analysis Internship II. 1 Unit.**

This course provides clinical experience with the University of the Pacific Behavior Analysis Services Program. This course includes practice in conducting behavior analysis programs for clients, overseeing the implementation of behavioral programs by others, attending behavioral program planning meetings, and reviewing program-relevant literature. Faculty and staff observe interns engaging in activities in the natural environment at least once every two weeks, and they provide specific feedback to interns on their performance. Multiple populations and sites are available, including but not limited to, typically developing school-aged children in school and home settings, and individuals with psychiatric diagnoses and/or developmental disabilities in their homes or in community settings. Permission of instructor. Pass/No Credit grading only.

**PSYC 291. Graduate Independent Study. 1-4 Units.****PSYC 295. Graduate Seminar in Psychology. 4 Units.****PSYC 297. Graduate Independent Research. 1-4 Units.**

Pass/No Credit grading only.

**PSYC 297D. Independent Research. 1-4 Units.****PSYC 297E. Independent Research. 1-4 Units.****PSYC 299. Thesis. 2 or 4 Units.**

# Conservatory of Music

Giulio Maria Ongaro, Dean

## Programs Offered

**Master of Music in Music Education**

**Certification in Music Therapy**

**Master of Art in Music Therapy**

The Conservatory of Music offers one graduate degree in music education: the Master of Music, and two graduate level programs in music therapy. Additionally, the Master of Education (with an emphasis in music education) is available through the Gladys L. Benerd School of Education. Building on previous music and teaching experiences, the education programs are individualized and lead to a creative, productive career in teaching music, pre-K through college. The Conservatory of Music graduate programs give students individual faculty attention and opportunities to work with experts in their field.

Graduate students in the Conservatory of Music take a range of coursework designed to enhance their musicianship and research skills. Graduate students develop advanced skills in music therapy, conducting, pedagogy, or other areas of music specialization depending on individual career goals. Music education degrees are designed for those with a previous degree/credential in music; in general, the Master of Music includes more coursework in music, while the Master of Education includes more education courses. Applicants who have not attained a music education degree/teaching credential previously are expected to complete the credential program as part of earning their graduate degree. The Master of Arts in Music Therapy offers a choice of two tracks of study and includes advanced clinical skill development. The Certification (Equivalency) offers an entry level professional course of study open to qualifying individuals with a bachelor's degree either in music or in other fields.

## Comprehensive Examination

At the conclusion of the master's program, all students are expected to pass a comprehensive written and/or oral examination/thesis defense on all work covered during their graduate study at University of the Pacific.

## Admission Requirements

Admission to any graduate program in music at University of the Pacific is based upon both academic qualifications and musicianship, including overt musical behavior as demonstrated in performance and listening. Academic considerations for the entering master's student, regardless of major, are discussed in earlier pages of this catalog under Admission. The graduate faculty of the Conservatory of Music consider each prospective graduate student based upon:

Music education majors — a live audition or tape of either:

1. The candidate's primary solo performing medium.
2. A recent (within two years) example of a performance or demonstration by a school ensemble or class taught or conducted by the applicant.
3. The candidate's original compositions (with scores).

Candidates must have a Bachelor's Degree in Music.

Candidates must apply for and be accepted into the Graduate School.

Grade point average of at least 3.0 for the last two year of undergraduate study.

Successful completion of the basic aptitude portion of the Graduate Record Examination. (GRE). The music subject exam of the Graduate Record Examination is not required. In cases where a student has earned an exemplary undergraduate GPA (3.5 or higher), the GRE examination requirements may be waived by the Conservatory Graduate Studies Chair.

Candidates must apply for and be accepted into the Graduate programs of the Conservatory of Music (and the School of Education, if they do not already possess a music education degree/teaching credential).

Credential candidates must apply for and meet the admission procedures and standards of the Credential Program of the Gladys L. School of Education during the first term of attendance.

Instructions regarding repertory and recording specifications are available in the Office of the Dean, Conservatory of Music and should be requested by all applicants.

Music therapy majors —

1. A degree in music.
  2. Undergraduate GPA of 3.0 or better.
  3. Online application form through the Graduate School.
  4. 3 letters of recommendation.
  5. General GRE scores (GRE is not required for applicants with GPA of 3.5 or higher.)
  6. Official Transcripts
  7. Music Audition (live or DVD recording):
- Prepare two contrasting pieces on your principal musical instrument/voice.
  - Sing two pieces from a traditional or contemporary musical repertoire and accompany yourself with piano and guitar (proficiency on both piano and guitar is an important consideration for potential candidates). For these pieces, you may use sheet music or a lead sheet.
  - Sing one American folk song from memory a capella.

## Conservatory of Music Faculty

James W. Hipp, Interim Dean of the Conservatory of Music, 2007, BM, University of Texas, Austin, 1956; MM, University of Texas, Austin, 1963; Doctor of Music, University of Texas, Austin, 1979.

Giulio Maria Ongaro, Dean, 2009, BM, University of Iowa, 1978; MA, University of North Carolina, 1981; PhD, University of North Carolina, 1986.

Robert Coburn, Chair, Composition and Music History, Professor of Music Theory and Composition, 1993, BM, University of the Pacific, 1972; MA, University of California, Berkeley, 1974; PhD, University of Victoria (Canada), 1995.

Stephen C. Anderson, Director of the Brubeck Institute, 2007, Dean, Conservatory of Music, 2000, BA, Southwestern College, 1967; MM, Louisiana State University, 1968; DMA, University of Oklahoma, 1977.

Ruth Brittin, Program Director and Professor of Music Education, 1997, BME, Texas Tech University, 1983; MME, 1985; PhD, Florida State University, 1989.

Edward Cetto, Assistant Professor of Music, Director of Choral Activities, 1994, MM, Boston Conservatory of Music, 1992; BME, Hart School of Music (University of Hartford), 1981; Certificate, Kodaly Musical Training Institute (Hungary), 1980.

Eric Hammer, Professor, Director of Band Activities, Professor of Music Education, 1993, BM, University of the Pacific, 1973; MM, University of Oregon, 1990; DMA, University of Oregon, 1994.

Sarah Clemmens Waltz, Assistant Professor of Music History; Program Director of Music History, 2007, PhD in Music History, MPhil, Yale University, 2007; BM in Music History with Honors, Oberlin Conservatory, 2000; BA in Physics, Oberlin College, 2000.

K. Allen Brown, Assistant Professor of Percussion, 1981, BM, University of Oregon, 1969; MM, Western Michigan University, 1972; Doctoral study at the University of Illinois.

Rex Cooper, Professor of Piano, 1973, BM, Oberlin College Conservatory of Music, 1969; Juilliard School of Music, 1970, MusD, Indiana University, 1987.

Daniel Ebbers, Assistant Professor of Voice, 2004, BM, University of Wisconsin-Stevens Point, MM, University of Southern California.

James Haffner, Assistant Professor, 1999, BA, Baldwin Wallace College, 1993; MFA, University of Cincinnati College, 1996.

Keith N. Hatschek, Associate Professor, 2001, BA, University of California Berkeley, 1973; Certificate in Marketing, University of California Berkeley, 1993.

Feilin Hsiao, Associate Professor of Music Therapy, 2006, PhD, University of Iowa, 2006; MA, New York University, 1994; Certified Music Therapist, 1994; BA, Chinese Cultural University (Taipei, Taiwan), 1986; Board Certified Music Therapist, 2001; Teaching Credential in Music Education (1996) and Special Education (1999).

Patrick Langham, Associate Professor of Jazz Studies, 2003, BM, University of Tennessee, 1992; MM, 1994.

Burr Cochran Phillips, Assistant Professor of Voice, 2007, BM, University of North Texas, 1982; MM, Texas Christian University, Fort Worth, TX, 1994.

Patricia Shands, Associate Professor of Clarinet, 1995, BM, Peabody Conservatory of Music, 1981; MM, University of Southern California, 1985.

Eric Waldon, Assistant Professor of Music Therapy, 2011, PhD in Educational Psychology, University of the Pacific; MA in Music Therapy, MA in Educational and Counseling Psychology, University of the Pacific; BM in Music Therapy, Western Michigan University. In addition to board certification as a music therapist, Dr. Waldon holds a credential as a school psychologist as well as a license as a psychologist in the state of California.

Nicholas Waldvogel, Associate Professor, 2001, BA, MA, Harvard University, 1989; MM, Peabody Conservatory, 1993; Graduate diploma in Conducting, Peabody Conservatory, 1994; PhD, Yale University, 1992.

Linda Wang, Assistant Professor of Violin, 2003, BM, University of Southern California, 1992; Artist Diploma, 1996; MM, 1997.

Frank H. Wiens, Professor of Piano, 1976, BM, University of Michigan, 1970; MM, 1971.

Lynelle Frankforter Wiens, Professor of Voice, 1978, BM, University of Nebraska, 1975; MM, Indiana University, 1978; MusD, Indiana University, 1988.

#### Music Education Courses

##### **MEDU 100. Music for Children. 3 Units.**

This course explores music fundamentals, resources, concepts and activities for the pre-adolescent child. This course is open to non-music majors only, and it is required for multiple subjects credential candidates.

##### **MEDU 101. Woodwind Instruments I. 1 Unit.**

Students study the principles of teaching and playing flute and clarinet.

##### **MEDU 102. Woodwind Instruments II. 1 Unit.**

Students study the principles of teaching and playing oboe, bassoon and saxophone.

##### **MEDU 103. Brass Instruments I. 1 Unit.**

Students study the principles of teaching and playing brass instruments.

##### **MEDU 104. Brass Instruments II. 1 Unit.**

Students study the advanced principles of brass instrument teaching.

##### **MEDU 105. Percussion Instruments. 1 Unit.**

Students study the principles of teaching and playing percussion instruments.

##### **MEDU 107. String Instruments I. 1 Unit.**

Students study the principles of teaching and playing violin and viola.

##### **MEDU 108. String Instruments II. 1 Unit.**

Students study the principles of teaching and playing string instruments which include the cello and bass.

##### **MEDU 110. Band Development. 2 Units.**

Students examine the teacher's role in instrumental music education which includes concert, marching, jazz band and orchestras in public schools.

##### **MEDU 111. Choral Development. 2 Units.**

Students examine the teacher's role in choral music education which includes concepts and techniques for choral ensembles.

##### **MEDU 112. Orchestra Development. 2 Units.**

Students examine the teacher's role in orchestras in public schools.

##### **MEDU 113. Laboratory Ensemble. 0.5 Units.**

This course offers laboratory experience of music education fieldwork that includes developmentally appropriate class and rehearsal skills, secondary instrument performance, vocal ensemble techniques, planning, and assessment.

##### **MEDU 114. Music in Elementary School. 2 Units.**

Students investigate the role of music within the elementary school and its environment. The course includes 50 hours of laboratory observation/teaching in the elementary schools. Corequisite: MEDU 115.

##### **MEDU 115. Music Experiences, K-6. 2 Units.**

This course offers a music specialist approach to materials and techniques that develop music experiences for elementary school children. Corequisite: MEDU 114. Open to music majors only.

##### **MEDU 116. Music in Secondary School. 2 Units.**

Students examine the role of school music in grades 6-12. The course includes 50 hours of laboratory observation/teaching. Corequisite: MEDU 117. Open to music majors only.

##### **MEDU 117. Music Experiences, 7-12. 2 Units.**

This course offers a music specialist approach to materials and techniques that develop music experiences in secondary school. Corequisite: MEDU 116. Open to music majors only.

##### **MEDU 118. Advanced Teaching Practicum. 1-3 Units.**

This course is supervised practical observation/teaching experiences in both public and private schools. Prerequisites: MEDU 114 and MEDU 116.

##### **MEDU 191. Independent Study. 1-4 Units.**

##### **MEDU 200. Video Microrehearsal for Music Teaching Candidates. 3 Units.**

Course content includes microrehearsals, seminars, and individual and group viewing sessions to define and develop rehearsal-teaching techniques with video recording as a basic tool. Prerequisites: bachelor's degree in music and permission of Music Education faculty.

##### **MEDU 201. Video Microrehearsal for Experienced Music Teachers. 1-4 Units.**

Students study the restructuring of music teaching techniques that use video recording techniques. Other topics of study include microrehearsals, seminars, individual and group viewing sessions, and field application of new procedures. Prerequisites: bachelor's degree in music, two years of full-time music teaching in public schools and permission of instructor.

##### **MEDU 202. Fieldwork in Music Education. 3 Units.**

This course offers advanced work in schools. It may include music drama, small ensembles, unique curriculum design as well as large ensembles and class instruction.

##### **MEDU 210. Seminar in Music Education. 2 Units.**

This seminar course includes discussion, research and writing related to music education.

##### **MEDU 220. Instrumental Organization, Conducting and Literature. 3 Units.**

##### **MEDU 221. Choral Organization, Conducting and Literature. 3 Units.**

##### **MEDU 222. Advanced Problems in Elementary Music Teaching. 3 Units.**

**MEDU 291. Independent Study. 1-4 Units.**

**MEDU 293. Special Topics. 1-2 Units.**

**MEDU 299. Thesis. 3 Units.**

**MEDU 301. Video Microrehearsal for Experienced Music Teachers. 4 Units.**

Students study the restructuring of music teaching techniques that use video recording techniques. Other topics of study include microrehearsals, seminars, individual and group viewing sessions, and field application of new procedures. A research component is required. Prerequisites: bachelor's degree in music and two years of full-time music teaching in public schools and permission of instructor.

**MEDU 310. Seminar in Music Education. 2 Units.**

This course includes discussion, research and writing related to music education.

**MEDU 311. Philosophy of Music Education. 3 Units.**

Students examine the development of individual music education philosophy through the study of history, aesthetics, sociology, psychology and school practice.

**MEDU 312. Graduate Research in Music Education. 1-3 Units.**

**MEDU 313. Graduate Research in Music Education. 1-3 Units.**

**MEDU 322. Issues in Elementary Music Teaching. 3 Units.**

**MEDU 391. Graduate Independent Study. 1-3 Units.**

**MEDU 393. Special Topics. 1-2 Units.**

Music Therapy Courses

**MTHR 135. Music with Children in Inclusive Settings: Therapeutic and Educational Applications. 3 Units.**

This course presents specific music therapy techniques and skills for 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 also acquaints 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 018 or MCOM 002; or with instructor permission.

**MTHR 140. Psychology of Music. 3 Units.**

This course introduces the psychological foundations of music that include 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. The course is open to non-majors. Prerequisite: MCOM 002 or permission of the instructor.

**MTHR 141. Music Therapy in Mental Health and Social Services. 3 Units.**

MTHR 141 examines 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 current DSM criteria for mental disorders commonly encountered by music therapists, and an overview of major theories of psychotherapy as they relate to music therapy. The course introduces music therapy techniques for group treatment which includes music improvisation, songwriting, and basic relaxation methods. This course is for music therapy majors only and it must be taken concurrently with Fieldwork in Music Therapy. Prerequisites: MTHR 011, MTHR 018, MTHR 135, and MTHR 140, PSYC 111 and completion of Voice, Guitar, and Piano competencies.

**MTHR 142. Music Therapy in Medicine and Health Care. 3 Units.**

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 the 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. The course is for music therapy majors only. Prerequisites: MTHR 141, BIOL 011 and completion of Voice, Guitar, and Piano competencies.

**MTHR 143. Supervisory Techniques. 1 or 2 Unit.**

This course offers techniques in the supervision of music therapy fieldwork. The course is only open to music therapy majors by permission of the instructor. Prerequisites: MTHR 020, MTHR 140 and MTHR 150.

**MTHR 150. Fieldwork in Music Therapy. 1-2 Units.**

Fieldwork provides students with structured clinical experiences in music therapy under the supervision of a music therapist in varying community settings. This course repeated for credit and taken concurrently each semester students are enrolled in MTHR 135, MTHR 140, MTHR 141 and MTHR 142. Prerequisites: MTHR 011 and MTHR 018. This course is open only to music therapy majors, and 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 Unit.**

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, competency evaluation and individualized internship training plan. Students are required to enroll in MTHR 150 within the period of one year prior to the start of internship.

**MTHR 191. Independent Study. 1-2 Units.**

**MTHR 230. Bonny Method of Guided Imagery and Music Level I Training. 3 Units.**

Intensive 5-day residential seminar introduces theory and clinical applications of the Bonny Method of Guided Imagery and Music (BMGIM) and other music and imagery techniques. Participants gain intensive personal experience with BMGIM. Hands-on experiential exercises, demonstrations, and clinical examples introduce simple imagery techniques to add to participants' existing repertoire of therapeutic interventions. This residential phase of the course meets the Association of Music and Imagery (AMI) requirements for introductory training in the Bonny Method. The on-line learning component extends and deepens the student's understanding through exposure to literature in the Bonny Method, sharing of discoveries from readings and music listening, as well as personal reflection and integration of experiential learning. Due to the experiential nature of this course, participants must be willing to participate in all learning activities and in the group sharing process, and attend all seminar sessions as listed in the residential seminar course schedule. All students and instructors are expected to maintain confidentiality of personal material shared by group members. Prerequisites: Evidence of clinical experience and permission of instructor.

**MTHR 231. Individual Music Therapy: Advanced Theory and Techniques. 3 Units.**

This course explores current theories and techniques of music-centered psychotherapy for supportive, re-educative/rehabilitative, and re-constructive levels of clinical practice with a variety of populations. The course includes development of therapeutic relationship through music improvisation, and focused music-evoked imagery to address supportive and re-educative goals for individual clients. Experiential learning includes classroom simulations and supervised clinical practice. Prerequisites: MTHR 187 (or an AMTA-approved clinical internship) and MTHR 230 (or Level I training in the Bonny Method of Guided Imagery and Music) or permission of instructor.

**MTHR 232. Group Music Therapy: Advanced Theory and Techniques. 3 Units.**

This course examines theories and models for group music therapy with applications for a variety of clinical populations. The course includes approaches for quick group assessment and brief treatment environments. The focus is on therapist and member roles and tasks within group development processes. Students refine group facilitation skills that use music-centered techniques of improvisation and music-evoked imagery through in-class simulations and supervised clinical practice. Prerequisite: MTHR 231 with a "B" or better or permission of instructor.

**MTHR 240. Psychology of Music. 3 Units.**

Students examine the psychological foundations of music. Topics include 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. Students enrolled for graduate credit also complete a formal research project proposal and mock IRB proposal as preparation for eventual research activities within the graduate program or professional venues. This course is recommended for graduate students in music therapy or music education, but it is open to students in other majors. Prerequisite: competency in basic music reading skills.

**MTHR 245. Clinical Clerkship in Music Therapy. 1-4 Units.**

As an alternate requirement for Thesis, Clinical Clerkship is designed for students who may want to focus on clinical skills and knowledge. Students complete a major project related to an applied therapeutic or educational setting.

**MTHR 251. Music Therapy Supervision I: Introduction to Theory and Applications. 1 Unit.**

This course provides a foundation for effective music therapy clinical supervision. It introduces multicultural, ethical, and legal considerations and explores factors unique to music therapy supervision. Readings, workbook assignments, field observations and in-class discussion of theories and techniques prepare students for MTHR 252, and practical experience supervising undergraduate students in clinical training settings. Prerequisite: MTHR 187 or an AMTA approved clinical internship.

**MTHR 252. Music Therapy Supervision II: Applied Experience. 1 Unit.**

This course provides mentored practice in clinical supervision and it supports individualized skill development of competencies for professional participation in clinical management and student, volunteer, or peer supervision situations. Learning experiences include direct on-site supervision of undergraduate music therapy students in fieldwork placements, maintaining the on-site learning environment, monitoring student progress, conducting formal evaluations, conducting group student supervision and regular participation in supervisors group consultation meetings with faculty. Prerequisite: MTHR 251 with a "B" or better.

**MTHR 260. Advanced Clinical Practice in Music Therapy. 1 Unit.**

This course provides individualized experiences for development of advanced clinical skills in music therapy. Students may focus on a new area of specialization, or may work within a familiar clinical environment that develops skills at a more advanced level. Experiences may include supervised practice in advanced music therapy techniques, interdisciplinary collaboration, new program development, or expansion of an existing clinical program. Prerequisites: two semesters of MTHR 187 or clinical internship.

**MTHR 265. Human Research in Music Therapy: Supervised Experience. 1 Unit.**

This course offers individualized experiences for development of advanced research skills in music therapy. It provides faculty oversight and supervision of human research in clinical or laboratory settings. Students may focus on their own independent research project or may work within a collaborative or faculty-directed research environment. It is required for students who conduct summer research activities with human subjects and includes projects that contribute to completion of the master's thesis or clinical clerkship. This course may be repeated. Prerequisites: Completion of University Human Subjects (IRB) training for student investigators, and permission of instructor.

**MTHR 275. College Teaching in Music Therapy: Curriculum, Competencies and Classroom. 3 Units.**

Students review the AMTA requirements for music therapy undergraduate program curriculum and for competency-based education and clinical training. The course provides mentored practice in teaching foundational level music therapy college courses, and it supports individualized skill development for professional participation in academic music therapy programs as an instructor. Permission of instructor.

**MTHR 291. Graduate Independent Study. 1-4 Units.**

**MTHR 299. Thesis. 1-4 Units.**

Students create an original monograph that embodies original research.

General Music Courses

**MUSC 202. Introduction in Music Research. 3 Units.**

This course is designed for the graduate level student to develop music research skills.

**MUSC 203. Contemporary Issues in Music Education and Music Therapy. 3 Units.**

Graduate students research, analyze, and reflect on current values, philosophical issues, and contemporary trends in the professions of music education and music therapy.

## Music Education

### Master of Music Degree in Music Education

The music education graduate program offers a core course of study along with numerous electives in music and education that provide an individualized program that caters to the individual's specific career goals. Candidates for the Master of Music degree must have their baccalaureate degree from an accredited school or department of music and must also give evidence of accomplishments during their undergraduate years commensurate with those that lead to the Bachelor of Music degree at University of the Pacific. All transcripts and placement tests are evaluated; recommendations for courses of study are made accordingly. Supplementary undergraduate work may be prescribed if deemed advisable. The major field is music education.

The music education department offers two plans for students who have completed an undergraduate music education degree: Plan A with emphasis on research, Plan B with emphasis on advanced techniques and practices in music education and music. Students with an undergraduate music degree other than music education can obtain the master's degree and California music certificate in teaching through the Master of Education in Music Education offered through the School of Education. See music education department chair for program description.

In certain cases (depending on previous teaching experience), a candidate may gain the teaching credential with the Master of Music Education degree, working with both the Conservatory of Music and the Gladys L. Benerd School of Education; see music education department coordinator for details. Note that both MM programs contain a number of electives; specific courses come from the upper division and graduate courses listed later in this catalog and in the university's general catalog. This flexibility of electives allows for the personalization of the degree plan.



## Music Education Faculty

### Master of Music in Music Education

Students must complete a minimum of 33 units with a Pacific cumulative grade point average of 3.0 in order to earn the master of music degree in music education.

#### Plan A: Thesis

|  |  |      |
|--|--|------|
| MUSC 202   | Introduction in Music Research                           | 3    |
| MUSC 203   | Contemporary Issues in Music Education and Music Therapy | 3    |
| Select a minimum ten units from the following:   |  | 10   |
| MHIS Minimum 2 units in Music History  |  |      |
| MCOM Minimum 2 units in Music Theory   |  |      |
| MAPP Additional units in Applied Music   |  |      |
| Select three to nine units of non music courses (such as education, psychology, languages, statistics) |  | 3-9  |
| Select four to ten units from:   |  | 4-10 |
| MEDU Music Education   |  |      |
| MHIS Music History   |  |      |
| MTHR Music Therapy   |  |      |
| MCOM Music Theory  |  |      |
| MAPP Music Applied   |  |      |
| MEDU 299   | Thesis   | 3    |
| One of the following must be met before degree is awarded:   |  |      |
| Bachelor's Degree in Music Education   |  |      |
| Music Education Credential   |  |      |

**Note:** 1) 18 units must be at the graduate (200 or higher) level.

#### Plan B: Seminar

|  |  |      |
|--|--|------|
| MUSC 202   | Introduction in Music Research                           | 3    |
| MUSC 203   | Contemporary Issues in Music Education and Music Therapy | 3    |
| Select a minimum ten units from the following:   |  | 10   |
| MHIS Minimum 2 units in Music History  |  |      |
| MCOM Minimum 2 units in Music Theory   |  |      |
| MAPP Additional units in Applied Music   |  |      |
| Select three to nine units of non music courses (such as education, psychology, languages, statistics) |  | 3-9  |
| Select four to ten elective units from:  |  | 4-10 |
| MEDU Music Education   |  |      |
| MHIS Music History   |  |      |
| MTHR Music Therapy   |  |      |
| MCOM Music Theory  |  |      |
| MAPP Music Applied   |  |      |
| One of the following must be met before degree is awarded:   |  |      |
| Bachelor's Degree in Music Education   |  |      |
| Music Education Credential   |  |      |

**Note:** 1) 18 units must be at the graduate (200 or higher) level

#### Music Education Courses

##### MEDU 100. Music for Children. 3 Units.

This course explores music fundamentals, resources, concepts and activities for the pre-adolescent child. This course is open to non-music majors only, and it is required for multiple subjects credential candidates.

##### MEDU 101. Woodwind Instruments I. 1 Unit.

Students study the principles of teaching and playing flute and clarinet.

##### MEDU 102. Woodwind Instruments II. 1 Unit.

Students study the principles of teaching and playing oboe, bassoon and saxophone.

##### MEDU 103. Brass Instruments I. 1 Unit.

Students study the principles of teaching and playing brass instruments.

##### MEDU 104. Brass Instruments II. 1 Unit.

Students study the advanced principles of brass instrument teaching.

##### MEDU 105. Percussion Instruments. 1 Unit.

Students study the principles of teaching and playing percussion instruments.

##### MEDU 107. String Instruments I. 1 Unit.

Students study the principles of teaching and playing violin and viola.

##### MEDU 108. String Instruments II. 1 Unit.

Students study the principles of teaching and playing string instruments which include the cello and bass.

##### MEDU 110. Band Development. 2 Units.

Students examine the teacher's role in instrumental music education which includes concert, marching, jazz band and orchestras in public schools.

##### MEDU 111. Choral Development. 2 Units.

Students examine the teacher's role in choral music education which includes concepts and techniques for choral ensembles.

##### MEDU 112. Orchestra Development. 2 Units.

Students examine the teacher's role in orchestras in public schools.

##### MEDU 113. Laboratory Ensemble. 0.5 Units.

This course offers laboratory experience of music education fieldwork that includes developmentally appropriate class and rehearsal skills, secondary instrument performance, vocal ensemble techniques, planning, and assessment.

##### MEDU 114. Music in Elementary School. 2 Units.

Students investigate the role of music within the elementary school and its environment. The course includes 50 hours of laboratory observation/teaching in the elementary schools. Corequisite: MEDU 115.

##### MEDU 115. Music Experiences, K-6. 2 Units.

This course offers a music specialist approach to materials and techniques that develop music experiences for elementary school children. Corequisite: MEDU 114. Open to music majors only.

##### MEDU 116. Music in Secondary School. 2 Units.

Students examine the role of school music in grades 6-12. The course includes 50 hours of laboratory observation/teaching. Corequisite: MEDU 117. Open to music majors only.

##### MEDU 117. Music Experiences, 7-12. 2 Units.

This course offers a music specialist approach to materials and techniques that develop music experiences in secondary school. Corequisite: MEDU 116. Open to music majors only.

##### MEDU 118. Advanced Teaching Practicum. 1-3 Units.

This course is supervised practical observation/teaching experiences in both public and private schools. Prerequisites: MEDU 114 and MEDU 116.

##### MEDU 191. Independent Study. 1-4 Units.

##### MEDU 200. Video Microrehearsal for Music Teaching Candidates. 3 Units.

Course content includes microrehearsals, seminars, and individual and group viewing sessions to define and develop rehearsal-teaching techniques with video recording as a basic tool. Prerequisites: bachelor's degree in music and permission of Music Education faculty.

##### MEDU 201. Video Microrehearsal for Experienced Music Teachers. 1-4 Units.

Students study the restructuring of music teaching techniques that use video recording techniques. Other topics of study include microrehearsals, seminars, individual and group viewing sessions, and field application of new procedures. Prerequisites: bachelor's degree in music, two years of full-time music teaching in public schools and permission of instructor.

**MEDU 202. Fieldwork in Music Education. 3 Units.**

This course offers advanced work in schools. It may include music drama, small ensembles, unique curriculum design as well as large ensembles and class instruction.

**MEDU 210. Seminar in Music Education. 2 Units.**

This seminar course includes discussion, research and writing related to music education.

**MEDU 220. Instrumental Organization, Conducting and Literature. 3 Units.****MEDU 221. Choral Organization, Conducting and Literature. 3 Units.****MEDU 222. Advanced Problems in Elementary Music Teaching. 3 Units.****MEDU 291. Independent Study. 1-4 Units.****MEDU 293. Special Topics. 1-2 Units.****MEDU 299. Thesis. 3 Units.****MEDU 301. Video Microrehearsal for Experienced Music Teachers. 4 Units.**

Students study the restructuring of music teaching techniques that use video recording techniques. Other topics of study include microrehearsals, seminars, individual and group viewing sessions, and field application of new procedures. A research component is required. Prerequisites: bachelor's degree in music and two years of full-time music teaching in public schools and permission of instructor.

**MEDU 310. Seminar in Music Education. 2 Units.**

This course includes discussion, research and writing related to music education.

**MEDU 311. Philosophy of Music Education. 3 Units.**

Students examine the development of individual music education philosophy through the study of history, aesthetics, sociology, psychology and school practice.

**MEDU 312. Graduate Research in Music Education. 1-3 Units.****MEDU 313. Graduate Research in Music Education. 1-3 Units.****MEDU 322. Issues in Elementary Music Teaching. 3 Units.****MEDU 391. Graduate Independent Study. 1-3 Units.****MEDU 393. Special Topics. 1-2 Units.**

General Music Courses

**MUSC 202. Introduction in Music Research. 3 Units.**

This course is designed for the graduate level student to develop music research skills.

**MUSC 203. Contemporary Issues in Music Education and Music Therapy. 3 Units.**

Graduate students research, analyze, and reflect on current values, philosophical issues, and contemporary trends in the professions of music education and music therapy.

## Certification Program in Music Therapy

### Certification (Equivalency) Programs in Music Therapy

#### Program Description

The Music Therapy Certification program is designed for individuals who already have bachelor's degrees in music (e.g., performance, music education, composition, etc.) or related fields (e.g., psychology, special education, etc.). The MT Certification program does not require students to earn a second bachelor's degree. Instead, the Certification Program focuses on the completion of all required courses in music foundations, music therapy, and health/behavioral/natural sciences, AMTA-defined

music therapy competencies, and the 6-month full time clinical internship, all required as prerequisites to sit for the board certification examination, administered by CBMT (Certification Board for Music Therapists). Passing the board certification examination certifies individuals to begin the professional level of practice of music therapy with the MT-BC credential (Music Therapist-Board Certified), recognized as the professional standard throughout the United States and in many other countries.

The Certification program offers a popular and flexible learning option for mature individuals making a career change to enter music therapy. The number of courses required for the completion of the certification program varies according to the academic background and musical skills of those who apply. However, students must complete all of the required music therapy courses listed below (min. 27 units) at the University of the Pacific, or demonstrate equivalent coursework from an AMTA-approved academic program. The music therapy faculty works closely with potential Certification students to design an individualized plan for successful study, and to document completion of all courses, supervised clinical training (minimum 1200 hours), and demonstration of AMTA competencies required for **eligibility for the Board Certification examination.**

### Program Requirements

The following courses constitute the Certification program in music therapy at the University of the Pacific, as approved by the AMTA (American Music Therapy Association). Music therapy courses must be completed at the University of the Pacific or other program approved by AMTA. Total units for course requirements are approximated and may vary slightly according to the college or university where course(s) are completed. Certification students must maintain a minimum grade point average of B in all coursework taken during the Certification program, must earn a B or better in all music therapy courses, and must demonstrate interpersonal and professional skills appropriate to the clinical profession as evaluated by the Music Therapy Program faculty, in order to remain in the program.

Music foundations courses completed at a NASM-approved college level program may be applied to fulfill Music Therapy Certification requirements, subject to evaluation by Conservatory faculty.

1. Students who have completed a bachelor's degree in music at a NASM-Accredited institution will be considered to have completed music foundation coursework.
2. Students who have completed theory coursework at an institution not accredited by NASM will be assessed for knowledge and skill level. Failing to meet competencies in theory and musicianship, students will be required to take additional theory coursework.
3. Students who need to complete theory coursework at Pacific will be evaluated for placement in music theory.

Students must provide official college transcripts documenting any courses to be applied to the Certification requirements. Course description and course syllabus may be required to support evaluation of course equivalence. Courses with a grade lower than C+ will not be accepted for credit toward Certification requirements.

Required Health/Behavioral/Natural Sciences courses may be transferred from other accredited college level institutions. No courses with a grade lower than B- will be accepted in this category.

#### Required courses

##### I. Music Theory Foundation Courses (4 semesters; minimum 16 units)

- MCOM 009 Music Technology
- MCOM 010 Music Theory and Aural Perception I
- MCOM 011 Music Theory and Aural Perception II
- MCOM 012 Music Theory III
- MCOM 013 Aural Perception III

Additional courses to reach minimum of 16 units:

- MCOM 014 Introduction to Orchestration
- MCOM 015 Music Theory IV: 20<sup>th</sup> Century
- MCOM 016 Aural Perception IV
- MCOM 019 Music & Computer Technology
- MCOM 030 Jazz Theory and Aural Training

## II. Music History Courses (3 semesters; minimum 9 units)

Select from the following:

- MHIS 006 Music of the World's Peoples
- MHIS 008 History of Jazz
- MHIS 012 Music History II
- MHIS 013 Music History III

**Note:** 1) One semester may consist of world music or jazz/contemporary music. (Recommended)

## III. Music Performance & Skills Foundations

- MPER 4 semesters of Ensembles
- MEDU 105 1 semester of Percussion Instruments
- MPER 151 1 semester of Conducting
- MAPP 010 2 semesters of Applied Instruction on Principal Instrument

## IV. AMTA level Proficiencies

- Piano Proficiency
- Voice Proficiency
- Guitar Proficiency

**Note:** 1) Individual assessments by the faculty determine whether the AMTA required music skills competencies have been met. 2) Course instruction at Pacific is available in any music foundation area if needed.

## V. Health/Behavioral/Natural Science Courses (minimum of 20 units)

- PSYC 111 Abnormal Psychology
- SPED 123 The Exceptional Child
- BIOL 011 Human Anatomy & Physiology

Additional courses to reach minimum of 20 units

**Note:** 1) Recommended; other college level Anatomy courses are also accepted by AMTA)

## VI. Music Therapy Courses

- MAPP 001E Voice Class for Music Therapy and Music Education Majors
- MTHR 011 Music as Therapy: A Survey of Clinical Applications
- MTHR 018 Basic Music Skills for Music Therapists and Applied Professionals
- MTHR 020 Observation and Assessment in Music Therapy
- MTHR 135 Music with Children: Therapeutic & Educational Applications
- MTHR 140 Psychology of Music
- MTHR 141 Music Therapy in Mental Health and Social Services
- MTHR 142 Music Therapy in Medicine and Health Care
- MTHR 150 Fieldwork in Music Therapy (4 semesters)
- MTHR 187 Internship in Music Therapy (2 semesters)

## Certification Program in Music Therapy Faculty Program Requirements

The following courses constitute the Certification program in music therapy at the University of the Pacific, as approved by the AMTA (American Music Therapy Association). Music therapy courses must be completed at the University of the Pacific or other program approved by AMTA. Total units for course requirements are approximated and may vary slightly according to the college or university where course(s) are completed.

Certification students must maintain a minimum grade point average of B in all coursework taken during the Certification program, must earn a B or better in all music therapy courses, and must demonstrate interpersonal and professional skills appropriate to the clinical profession as evaluated by the Music Therapy Program faculty, in order to remain in the program.

Music foundations courses completed at a NASM-approved college level program may be applied to fulfill Music Therapy Certification requirements, subject to evaluation by Conservatory faculty.

1. Students who have completed a bachelor's degree in music at a NASM-Accredited institution are considered to have completed music foundation coursework.
2. Students who have completed theory coursework at an institution not accredited by NASM are assessed for knowledge and skill level. Failing to meet competencies in theory and musicianship, students are required to take additional theory coursework.
3. Students who need to complete theory coursework at Pacific are evaluated for placement in music theory.

Students must provide official college transcripts documenting any courses to be applied to the Certification requirements. Course description and course syllabus may be required to support evaluation of course equivalence. Courses with a grade lower than C+ are not accepted for credit toward Certification requirements.

Required Health/Behavioral/Natural Sciences courses may be transferred from other accredited college level institutions. No courses with a grade lower than B- are accepted in this category.

## I. Music Theory Foundation Courses

Minimum 16 units

|                              |                                      |   |
|------------------------------|--------------------------------------|---|
| MCOM 009                     | Introduction to Music Technology     | 1 |
| MCOM 010                     | Music Theory and Aural Perception I  | 4 |
| MCOM 011                     | Music Theory and Aural Perception II | 4 |
| MCOM 012                     | Music Theory III: Chromaticism       | 2 |
| MCOM 013                     | Aural Perception III                 | 1 |
| Select two of the following: |                                      | 4 |
| MCOM 014                     | Introduction to Orchestration        |   |
| MCOM 015                     | Music Theory IV: Twentieth Century   |   |
| MCOM 016                     | Aural Perception IV                  |   |
| MCOM 019                     | Music and Computer Technology        |   |
| MUJZ 020                     | Jazz Theory and Aural Training       |   |

## II. Music History Courses (3 semesters)

Minimum 9 units

|                                |                             |   |
|--------------------------------|-----------------------------|---|
| Select three of the following: |                             | 9 |
| MHIS 006                       | Music of the World's People |   |
| MHIS 011                       | Survey of Music History I   |   |
| MHIS 012                       | Survey of Music History II  |   |
| MUJZ 008                       | Introduction to Jazz        |   |

**Note:** 1) One semester may consist of world music or jazz/contemporary music. (Recommended)

## III. Music Performance & Skills Foundations

|                                    |                          |   |
|------------------------------------|--------------------------|---|
| MAPP 010                           | Applied Music            | 2 |
| MEDU 105                           | Percussion Instruments   | 1 |
| MPER (Four semesters of Ensembles) |                          | 4 |
| MPER 151                           | Principles of Conducting | 2 |

## IV. AMTA level Proficiencies

Piano Proficiency

Voice (All students must take MAPP 001E)

Guitar Proficiency

**Note:** 1) Individual assessments by the faculty determine whether the AMTA required music skills competencies have been met. 2) Course instruction at Pacific is available in any music foundation area if needed.

## V. Health/Behavioral/Natural Science Courses

Minimum of 20 units

|   |                              |    |
|---|------------------------------|----|
| PSYC 111  | Abnormal Psychology          | 4  |
| SPED 123  | The Exceptional Child        | 3  |
| BIOL 011  | Human Anatomy and Physiology | 4  |
| Additional courses to reach minimum of 20 units |                              | 11 |

**Note:** 1) Recommended; other college level Anatomy courses are also accepted by AMTA)

## VI. Music Therapy Courses

|                              |   |     |
|------------------------------|---|-----|
| MAPP 001E                    | Voice Class   | 1   |
| MTHR 011                     | Music as Therapy: A Survey of Clinical Applications   | 3   |
| MTHR 018                     | Basic Skills for Music Therapists and Allied Professionals                                  | 3   |
| MTHR 020                     | Observation and Assessment in Music Therapy   | 2   |
| MTHR 135                     | Music with Children in Inclusive Settings: Therapeutic and Educational Applications         | 3   |
| Select one of the following: |   | 3   |
| MTHR 140                     | Psychology of Music   |     |
| MTHR 240                     | Psychology of Music (For students concurrently enrolled in the MA in Music Therapy program) |     |
| MTHR 141                     | Music Therapy in Mental Health and Social Services  | 3   |
| MTHR 142                     | Music Therapy in Medicine and Health Care   | 3   |
| MTHR 150                     | Fieldwork in Music Therapy  | 1-2 |
| MTHR 187                     | Internship in Music Therapy   | 1   |

Music Therapy Courses

### **MTHR 135. Music with Children in Inclusive Settings: Therapeutic and Educational Applications. 3 Units.**

This course presents specific music therapy techniques and skills for 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 also acquaints 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 018 or MCOM 002; or with instructor permission.

### **MTHR 140. Psychology of Music. 3 Units.**

This course introduces the psychological foundations of music that include 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. The course is open to non-majors. Prerequisite: MCOM 002 or permission of the instructor.

### **MTHR 141. Music Therapy in Mental Health and Social Services. 3 Units.**

MTHR 141 examines 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 current DSM criteria for mental disorders commonly encountered by music therapists, and an overview of major theories of psychotherapy as they relate to music therapy. The course introduces music therapy techniques for group treatment which includes music improvisation, songwriting, and basic relaxation methods. This course is for music therapy majors only and it must be taken concurrently with Fieldwork in Music Therapy. Prerequisites: MTHR 011, MTHR 018, MTHR 135, and MTHR 140, PSYC 111 and completion of Voice, Guitar, and Piano competencies.

### **MTHR 142. Music Therapy in Medicine and Health Care. 3 Units.**

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 the 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. The course is for music therapy majors only. Prerequisites: MTHR 141, BIOL 011 and completion of Voice, Guitar, and Piano competencies.

### **MTHR 143. Supervisory Techniques. 1 or 2 Unit.**

This course offers techniques in the supervision of music therapy fieldwork. The course is only open to music therapy majors by permission of the instructor. Prerequisites: MTHR 020, MTHR 140 and MTHR 150.

### **MTHR 150. Fieldwork in Music Therapy. 1-2 Units.**

Fieldwork provides students with structured clinical experiences in music therapy under the supervision of a music therapist in varying community settings. This course repeated for credit and taken concurrently each semester students are enrolled in MTHR 135, MTHR 140, MTHR 141 and MTHR 142. Prerequisites: MTHR 011 and MTHR 018. This course is open only to music therapy majors, and 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 Unit.**

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, competency evaluation and individualized internship training plan. Students are required to enroll in MTHR 150 within the period of one year prior to the start of internship.

### **MTHR 191. Independent Study. 1-2 Units.**

**MTHR 230. Bonny Method of Guided Imagery and Music Level I Training. 3 Units.**

Intensive 5-day residential seminar introduces theory and clinical applications of the Bonny Method of Guided Imagery and Music (BMGIM) and other music and imagery techniques. Participants gain intensive personal experience with BMGIM. Hands-on experiential exercises, demonstrations, and clinical examples introduce simple imagery techniques to add to participants' existing repertoire of therapeutic interventions. This residential phase of the course meets the Association of Music and Imagery (AMI) requirements for introductory training in the Bonny Method. The on-line learning component extends and deepens the student's understanding through exposure to literature in the Bonny Method, sharing of discoveries from readings and music listening, as well as personal reflection and integration of experiential learning. Due to the experiential nature of this course, participants must be willing to participate in all learning activities and in the group sharing process, and attend all seminar sessions as listed in the residential seminar course schedule. All students and instructors are expected to maintain confidentiality of personal material shared by group members. Prerequisites: Evidence of clinical experience and permission of instructor.

**MTHR 231. Individual Music Therapy: Advanced Theory and Techniques. 3 Units.**

This course explores current theories and techniques of music-centered psychotherapy for supportive, re-educative/rehabilitative, and re-constructive levels of clinical practice with a variety of populations. The course includes development of therapeutic relationship through music improvisation, and focused music-evoked imagery to address supportive and re-educative goals for individual clients. Experiential learning includes classroom simulations and supervised clinical practice. Prerequisites: MTHR 187 (or an AMTA-approved clinical internship) and MTHR 230 (or Level I training in the Bonny Method of Guided Imagery and Music) or permission of instructor.

**MTHR 232. Group Music Therapy: Advanced Theory and Techniques. 3 Units.**

This course examines theories and models for group music therapy with applications for a variety of clinical populations. The course includes approaches for quick group assessment and brief treatment environments. The focus is on therapist and member roles and tasks within group development processes. Students refine group facilitation skills that use music-centered techniques of improvisation and music-evoked imagery through in-class simulations and supervised clinical practice. Prerequisite: MTHR 231 with a "B" or better or permission of instructor.

**MTHR 240. Psychology of Music. 3 Units.**

Students examine the psychological foundations of music. Topics include 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. Students enrolled for graduate credit also complete a formal research project proposal and mock IRB proposal as preparation for eventual research activities within the graduate program or professional venues. This course is recommended for graduate students in music therapy or music education, but it is open to students in other majors. Prerequisite: competency in basic music reading skills.

**MTHR 245. Clinical Clerkship in Music Therapy. 1-4 Units.**

As an alternate requirement for Thesis, Clinical Clerkship is designed for students who may want to focus on clinical skills and knowledge. Students complete a major project related to an applied therapeutic or educational setting.

**MTHR 251. Music Therapy Supervision I: Introduction to Theory and Applications. 1 Unit.**

This course provides a foundation for effective music therapy clinical supervision. It introduces multicultural, ethical, and legal considerations and explores factors unique to music therapy supervision. Readings, workbook assignments, field observations and in-class discussion of theories and techniques prepare students for MTHR 252, and practical experience supervising undergraduate students in clinical training settings. Prerequisite: MTHR 187 or an AMTA approved clinical internship.

**MTHR 252. Music Therapy Supervision II: Applied Experience. 1 Unit.**

This course provides mentored practice in clinical supervision and it supports individualized skill development of competencies for professional participation in clinical management and student, volunteer, or peer supervision situations. Learning experiences include direct on-site supervision of undergraduate music therapy students in fieldwork placements, maintaining the on-site learning environment, monitoring student progress, conducting formal evaluations, conducting group student supervision and regular participation in supervisors group consultation meetings with faculty. Prerequisite: MTHR 251 with a "B" or better.

**MTHR 260. Advanced Clinical Practice in Music Therapy. 1 Unit.**

This course provides individualized experiences for development of advanced clinical skills in music therapy. Students may focus on a new area of specialization, or may work within a familiar clinical environment that develops skills at a more advanced level. Experiences may include supervised practice in advanced music therapy techniques, interdisciplinary collaboration, new program development, or expansion of an existing clinical program. Prerequisites: two semesters of MTHR 187 or clinical internship.

**MTHR 265. Human Research in Music Therapy: Supervised Experience. 1 Unit.**

This course offers individualized experiences for development of advanced research skills in music therapy. It provides faculty oversight and supervision of human research in clinical or laboratory settings. Students may focus on their own independent research project or may work within a collaborative or faculty-directed research environment. It is required for students who conduct summer research activities with human subjects and includes projects that contribute to completion of the master's thesis or clinical clerkship. This course may be repeated. Prerequisites: Completion of University Human Subjects (IRB) training for student investigators, and permission of instructor.

**MTHR 275. College Teaching in Music Therapy: Curriculum, Competencies and Classroom. 3 Units.**

Students review the AMTA requirements for music therapy undergraduate program curriculum and for competency-based education and clinical training. The course provides mentored practice in teaching foundational level music therapy college courses, and it supports individualized skill development for professional participation in academic music therapy programs as an instructor. Permission of instructor.

**MTHR 291. Graduate Independent Study. 1-4 Units.**

**MTHR 299. Thesis. 1-4 Units.**

Students create an original monograph that embodies original research.

**General Music Courses**

**MUSC 202. Introduction in Music Research. 3 Units.**

This course is designed for the graduate level student to develop music research skills.

**MUSC 203. Contemporary Issues in Music Education and Music Therapy. 3 Units.**

Graduate students research, analyze, and reflect on current values, philosophical issues, and contemporary trends in the professions of music education and music therapy.

## Music Therapy

Pacific's music therapy program offers post baccalaureate education for **1)** entry to the music therapy profession (Certification/Equivalency)

and 2) also offers a Master's Degree in Music Therapy, which supports career advancement beyond the entry-level foundations required for Board Certification. Flexible learning options support a broad range of enhanced career opportunities for rapidly developing health care arenas. Advanced (MA) coursework affords students greater depth and breadth in knowledge and skills for advanced clinical competency and career development. Master's degree students in music therapy receive individual mentoring throughout the process, from selecting an area for career focus, through the development of advanced skills and specialization.

## Overview of Post-Bachelor's Degree Music Therapy Options

1. **Master of Arts Degree in Music Therapy.** (See complete program description below.) This program is for Board-Certified Music Therapists seeking preparation for advanced level of practice, with specialization in either clinical or academic areas. Application is submitted to the graduate school; an informal musicianship assessment and interview is done prior to student advising.
2. **Certification (Equivalency) Program in Music Therapy.** (These students are not awarded a degree or certificate from Pacific.) This program is designed for individuals who already have bachelor's degrees in music (e.g., performance, music education, music management, etc.) or related fields (e.g., psychology, special education, etc.). This option does not include all the coursework that is required to earn a second bachelor's degree. Instead, the Certification Program focuses on the completion of all necessary music/music therapy courses, competencies, and clinical internship as required by the AMTA as prerequisites to sit for the board certification examination, administered by CBMT (Certification Board for Music Therapists).

This popular and flexible learning option is for mature individuals who make a career change. The number of courses required for the completion of the certification program varies according to the academic background and musical skills of those who apply. The music therapy faculty works closely with potential Certification students to design an individualized plan to enable students to complete the various requirements in a cost-effective and timely manner, to expedite their entry into the music therapy job market.

3. **Certification (Equivalency) Program Plus Master's Degree in Music Therapy** (These students are classified as graduate students and are referred to as Certification Graduate Students.) This program supports rapid development of advanced clinical competencies for strong careers in music therapy clinical or academic settings. Persons who already have an undergraduate degree, demonstrate strong musicianship, and who qualify to enter the Graduate School may apply for this program. A complete application for graduate school admission is required for this program option, as well as the audition, interview, and music skills assessment described under the Certification program application procedure below.

The Music Therapy Certification Graduate student first completes the Certification Program requirement. Then, depending upon the individual's situation, some students may begin work toward the graduate (MA) degree while they complete their Certification requirements. Certification Graduate students who are making good progress in the certification/undergraduate level academic and competency work may concurrently take graduate level classes such as MUSC 202 or MUSC 203, music electives, or courses in other departments which support development of competencies for their area of specialization.

However, since all core music therapy courses in the master of arts in music therapy program focus on advanced clinical skills, these courses can only be taken after successful completion of all (undergraduate level) Certification courses and the clinical internship (MTHR 187). Certification Graduate students usually earn

the MT-BC credential shortly after completing internship, and are encouraged to work part-time as music therapists; this "real life" experience is extremely valuable in conjunction with the advanced coursework in music therapy. (For more information on the advanced phase of the Certification Graduate program option, see the MA program description below.)

## Program Policies

Requirements for the master of arts degree in music therapy and students concurrently enrolled in the Music Therapy Certification Program:

- Students enrolled in the Certification Graduate program option must complete all Certification coursework requirements, demonstrate functional music competencies, and complete an approved clinical internship prior to enrolling in any foundational music therapy graduate courses except .
- requires prerequisite for Certification Graduate students, but may be taken concurrently with with permission of advisor.
- Students may take concurrently with (Internship) with permission of both the instructor and the Clinical Training Director.
- Specialization field courses and may be taken concurrently with Certification coursework. Other MA specialization field and free elective graduate courses *except* Human Research, College Teaching, Thesis, or Clerkship may also be taken prior to the internship, .

## For all Master of Arts in Music Therapy students:

- The work for the master's degree must be completed within 7 years from the date when the first 200 level course was taken at Pacific.
- Students must pass the Board Certification (CBMT) Examination or provide evidence of current re-certification (MT-BC) status prior to completion of the master of arts degree in music therapy.
- Students who provide evidence of equivalent prior coursework may substitute a free elective for any required course, with permission of advisor and music therapy program director.
- Students enrolled in Thesis or Clerkship meet at least once each semester with their faculty advisor, and are encouraged to participate in Graduate Research Progress Meetings with peers and MT faculty members.
- In order to provide Protection of Human Research Subjects, IRB oversight, student liability insurance coverage, and ongoing faculty mentoring of students during Thesis and Clerkship work:
  - Students must be continuously enrolled for a minimum of 1 unit of credit ( or ) each Fall or Spring semester while working with human subjects in thesis or clinical clerkship projects. Thesis and Clerkship students who wish to conduct human research during summer sessions enroll in Supervised Experience in Music Therapy Human Research.
- Students must be enrolled for a minimum of 1 unit of credit ( or ) during the semesters in which the thesis or clinical clerkship is proposed and when it is defended. Thesis and Clerkship proposal and defense meetings with the student's faculty committee must be scheduled between September 1 and May 1.

## Required Advanced Clinical Competencies

Students must demonstrate advanced clinical competence in music therapy as well as academic success, in order to receive the master of arts degree. The American Music Therapy Association (AMTA) defines advanced clinical competencies expected of individuals who earn a graduate degree in Music Therapy. As the student progresses through the master of arts program coursework, the Music Therapy faculty evaluates each student for demonstrations of advanced competencies. Particular emphasis is placed upon the acquisition of advanced competencies relevant to the student's area of specialization.

# Master of Arts Program in Music Therapy

## Program Description

The master of arts in music therapy requires a minimum total of 36 units and provides a balance across three main areas, with at least 13 units in music therapy foundation courses, 13 units in specialization field courses, and 10 or more units of free electives. Students have the option to take additional elective courses related to their specific goals for clinical or for research/academic professional development, resulting in a range of 36-40 units earned within the master of arts in music therapy degree program.

The master of arts in music therapy program provides a foundation set of courses for all students, and then allows for individualization of the plan of study. Students who pursue the master of arts in music therapy are able to focus on their specific personal career goals by selecting one of two tracks supporting:

1. preparation for eventual entry into teaching and research careers (Generally, this requires completion of the master's degree in music therapy first, followed by doctoral level work available in other programs.) or
2. development of advanced clinical, administrative, and program development skills.

## Application Procedure

Application is submitted to the graduate school; applicants who have a cumulative college GPA of 3.5 or higher are not required to take the GRE. For persons with the MT-BC credential, an informal musicianship assessment and interview with the music therapy graduate faculty may be conducted at any time, and must be done prior to student advising and registration for courses.

## Plan of Study

Both tracks in the master of arts in music therapy program allow for flexible designs for the individualized plan of study. Master of arts students should consult with their advisor during the first term in residency, to determine their overall plan of study, and to detail their schedule of classes for each semester or summer term of the plan.

## Music Therapy Faculty

### Master of Arts in Music Therapy

Students must complete a minimum of 36 units with a Pacific cumulative and major/program grade point average of 3.0 or higher in order to earn the master of arts degree in music therapy.

### Music Therapy Foundational Courses:

Minimum 13 units

|          |  |   |
|----------|--|---|
| MTHR 231 | Individual Music Therapy: Advanced Theory and Techniques             | 3 |
| MTHR 232 | Group Music Therapy: Advanced Theory and Techniques                  | 3 |
| MTHR 260 | Advanced Clinical Practice in Music Therapy *                        | 1 |
| MTHR 251 | Music Therapy Supervision I: Introduction to Theory and Applications | 1 |
| MTHR 252 | Music Therapy Supervision II: Applied Experience                     | 1 |
| MUSC 203 | Contemporary Issues in Music Education and Music Therapy             | 3 |

- \* 1. Two semesters, one unit each semester.  
2. Students may fulfill one unit of this requirement by completing a Special Topics course in a clinical practice area.

Choose one of the following Options:

### Academic/Research Track (Option A, Thesis Plan)

Studies in this track prepare the graduate student to go on to doctoral level studies that lead to careers in academia and/or research. Students may receive mentored experience in college teaching as well as develop skills for research and scholarly work. Studies culminate in a research thesis. The thesis may consist of either experimental or applied research related to the student's specialization interests.

#### Required Courses

Minimum 13 units

|   |                                   |     |
|---|-----------------------------------|-----|
| MTHR 240  | Psychology of Music *             | 3   |
| Two Research Design & Statistics Course Electives |                                   | 6   |
| MUSC 202  | Introduction in Music Research ** |     |
| 200 level Research course                         |                                   |     |
| MTHR 299  | Thesis                            | 1-4 |

#### Free Electives

Minimum 10-14 units

|                                      |   |     |
|--------------------------------------|---|-----|
| Area of Specialization Electives *** |   | 6   |
| Select three of the following:       |   | 4-8 |
| MTHR 230                             | Bonny Method of Guided Imagery and Music Level I Training                 |     |
| MTHR 265                             | Human Research in Music Therapy: Supervised Experience                    |     |
| MTHR 291                             | Graduate Independent Study  |     |
| MTHR 275                             | College Teaching in Music Therapy: Curriculum, Competencies and Classroom |     |
| Other Music Electives                |   |     |

\* May be waived if prior upper division undergraduate coursework covered this course content

\*\* Generally, students take MUSC 202 unless they have already had extensive coursework/ experience in the research mythologies

\*\*\* All Music Therapy graduate students select a minimum of 6 elective units to support their chosen area of specialization and can benefit from graduate coursework selected from among many program offerings across the University in such areas as: counseling/ health psychology/ experimental psychology/ behavior analysis (Department of Psychology), special education/educational or counseling psychology (Benerd School of Education) or courses from the MEd in Music Education program. Academic Track students are also encouraged to consider electives from Speech- Language Pathology and other Health Sciences or helping professions offerings, as well as applied music studies or ensembles in the Conservatory.

### Clinical Track (Option B, Clinical Clerkship Plan)

Studies in this track support the development of skills for advanced clinical practice, program development, and administrative positions. Studies culminate in a Clinical Clerkship project, where the student designs, implements, and evaluates an innovative applied project or a model demonstration program in their area of clinical specialization.

#### Required Courses

Minimum of 13 units

|   |                                     |     |
|---|-------------------------------------|-----|
| MTHR 240  | Psychology of Music *               | 3   |
| Two Research Design & Statistics Course Electives |                                     | 6   |
| MUSC 202  | Introduction in Music Research **   |     |
| 200 level Research course                         |                                     |     |
| MTHR 245  | Clinical Clerkship in Music Therapy | 1-4 |

#### Free Electives

Minimum 10-14 units

|                                      |  |     |
|--------------------------------------|--|-----|
| Area of Specialization Electives *** |  | 6   |
| Select three of the following:       |  | 4-8 |

|                       |   |
|-----------------------|---|
| MTHR 230              | Bonny Method of Guided Imagery and Music Level I Training |
| MTHR 265              | Human Research in Music Therapy: Supervised Experience    |
| MTHR 291              | Graduate Independent Study                                |
| Other Music Electives |   |

- \* This course may be waived if prior upper division undergraduate coursework covered this course content.
- \*\* General students take MUSC 202 unless they have already had extensive coursework/experience in the research mythologies
- \*\*\* All Music Therapy graduate students select a minimum of 6 elective units to support their chosen area of specialization and can benefit from graduate coursework selected from among many program offerings across the University in such areas as: counseling/health psychology/experimental psychology/behavior analysis (Department of Psychology), special education/educational or counseling psychology (Benerd School of Education) or courses from the MEd in Music Education program. Clinical Track students are also encouraged to consider electives from applied music studies or ensembles in the Conservatory, electives from Speech-Language Pathology and other Health Sciences or helping professions offerings or liberal or fine arts studies which might enhance their careers as creative therapists. Electives in business management or music business are also options for Clinical Track students.

#### Music Composition Courses

##### **MCOM 108. Counterpoint. 3 Units.**

This course is the study of Palestrina's and Lassus' contrapuntal techniques that are accomplished through written exercises and analysis. Prerequisites: MCOM 010, MCOM 011, MCOM 012, MCOM 013, MCOM 014, MCOM 015, MCOM 016 and MCOM 017.

##### **MCOM 109. Advanced Orchestration. 3 Units.**

This course focuses on orchestration techniques from the first half of the 20th Century, and new performance practices. This is accomplished through orchestra analysis and writing exercises that include a reading session with the orchestra. Prerequisites: MCOM 010-017.

##### **MCOM 111. Advanced Computer Music. 3 Units.**

This course is taught in the Conservatory Computer Studio for Music Composition, and it focuses on digital synthesis, sampling/sound design, digital audio editing/mixing and a composing environment, live performance with computers, video creation, and intermedia composition. Students develop creative projects with Pro Tools HD, Max/MSP/Jitter, Cecilia/Csound, Final Cut Studio, and other software packages. As a project oriented study students complete several compositions during the process of the course. Prerequisite: MCOM 019 or permission of instructor.

##### **MCOM 112. Composition- Computer Music. 2 Units.**

Students study private composition in computer music within the Conservatory Computer Studio for Music Composition.

##### **MCOM 113. Advanced Analysis. 3 Units.**

Students explore advanced topics in music analysis that includes extensive study of Schenkerian analysis. Prerequisites: MCOM 010-017.

##### **MCOM 124. Composition, Upper-Division. 2 Units.**

This course is guided composition for experienced students that leads to the creation of several compositions for instruments and voices. This course may be repeated for credit. The course is for music composition majors, and admission to this upper division course is based on review of students' work at the end of the second year. Prerequisite: MCOM 024 or permission of instructor.

##### **MCOM 126. New Performance Techniques. 1 Unit.**

This class focuses on the study of extended acoustical techniques for voice, keyboard, string, woodwinds, brass, and percussion instruments. Specific techniques and appropriate notation are discussed and compositions that utilize these techniques are studied. Prerequisite: MCOM 015.

##### **MCOM 127. Music, Sound, and Film. 1 Unit.**

In any visual experience from real-life to commercial cinema to sound/image installation, sound plays a significant role in defining the expressive and relational content of the experience. This course explores the use of sound/music in film and experimental art with an emphasis on understanding the complex role sound plays in our experience. Through readings, film viewing, discussion, and analysis, students delve into the thinking of current sound designers, sound artists, and composers. Prerequisite: MCOM 019.

##### **MCOM 128. New Approaches to Form. 1 Unit.**

In the 20th Century, composers have found it necessary to explore new formal structures that allow them to unify their compositions at all levels. These approaches vary greatly from technical to conceptual. This course pursues the study of formal approaches to compositional organization with an emphasis on the unique problems each one confronts musically. Prerequisite: MCOM 017.

##### **MCOM 129. Non-Western Composing Techniques. 1 Unit.**

This course examines the expansion of melodic, rhythmic, harmonic, and timbral composition techniques through the study of music from the Republic of Central Africa, Japan, India and Bali. Prerequisite: MCOM 015.

##### **MCOM 191. Independent Study. 1-2 Units.**

##### **MCOM 194. Composition Senior Recital. 0 Units.**

This is a half-recital (+30-45 minutes of music) required for degree completion, organized, managed, and promoted by a Senior composition student, featuring a selection from the works he/she composed during his/her/ tenure in the composition program. Prerequisites: MCOM 124 with a "D" or better. Senior standing.

##### **MCOM 208. Counterpoint. 3 Units.**

Students study Palestrina's and Lassus' contrapuntal techniques accomplished through written exercises and analysis. Prerequisites: MCOM 010-017.

##### **MCOM 209. Advanced Orchestration. 3 Units.**

Course content focuses 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 that include a reading session with the orchestra. Prerequisites: MCOM 010-017.

##### **MCOM 211. Advanced Computer Music. 3 Units.**

This course is 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 is assigned for those who wish to receive graduate credit. Prerequisites: MCOM 010-017, MCOM 019 or equivalent.

##### **MCOM 212. Composition- Computer Music. 2 Units.**

Students study private composition in computer music within the Conservatory Computer Studio for Music Composition.

##### **MCOM 213. Advanced Analysis. 3 Units.**

Students examine advanced topics in music analysis that include the extensive study of Schenkerian analysis. An additional project is assigned for those who wish to receive graduate credit. Prerequisites: MCOM 010-017.

##### **MCOM 291. Graduate Independent Study. 1-4 Units.**

##### **MCOM 299. Thesis. 3 Units.**

Music History Courses



**MHIS 140. Symphonic Literature. 3 Units.**

Students study the history of the symphony from Baroque antecedents to contemporary examples. Prerequisites: MCOM 010, MCOM 011, MCOM 012, MCOM 013, MCOM 014, MCOM 015, MCOM 016, MCOM 017; MHIS 011, MHIS 012, MHIS 013 or permission of instructor.

**MHIS 141. Opera Literature. 3 Units.**

Students study the development of opera from 1600 to the present day. Special emphasis is on major operatic works and the relationship of opera to world history. Prerequisites: MCOM 010, MCOM 011, MCOM 012, MCOM 013, MCOM 014, MCOM 015, MCOM 016, MCOM 017, MHIS 011, MHIS 012, MHIS 013 or permission of instructor.

**MHIS 142. Chamber Music Literature. 3 Units.**

Students examine the formal and stylistic study of chamber music literature and analyze specific works. Prerequisites: MCOM 010-007, MHIS 011, 012 and 013 or permission of instructor.

**MHIS 143A. Keyboard Literature I. 3 Units.**

Students examine the historical, formal and stylistic study of keyboard literature from 1450 through 1825. Prerequisites: MCOM 010, MCOM 011, MCOM 012, MCOM 013, MCOM 014, MCOM 015, MCOM 016, MCOM 017, MHIS 011, MHIS 012, MHIS 013 or permission of instructor.

**MHIS 143B. Keyboard Literature II. 3 Units.**

Students examine keyboard music from 1825 to present. Prerequisites: MCOM 010, MCOM 011, MCOM 012, MCOM 013, MCOM 014, MCOM 015, MCOM 016, MCOM 017, MHIS 011, MHIS 012, MHIS 013 or permission of instructor.

**MHIS 144. Vocal Literature. 3 Units.**

Students study vocal compositions of major composers with emphasis on 19th and 20th century French and German repertoire. The relationship of poetry and music in the melodie and Lied is stressed in addition to recital programming. Prerequisites: MCOM 010, MCOM 011, MCOM 012, MCOM 013, MCOM 014, MCOM 015, MCOM 016, MCOM 017, MHIS 011, MHIS 012, MHIS 013 or permission of instructor.

**MHIS 152. Music in Baroque. 3 Units.**

Students study early music topics from before 1700 (medieval, renaissance, or early baroque periods). Sample topics include Renaissance madrigal, medieval chant, 17th century opera, etc. See program director for specific topics in a given semester. This course meets once in four semesters. Prerequisite: MCOM 010, MCOM 011, MCOM 012, MCOM 013, MCOM 014, MCOM 015, MCOM 016, MCOM 017, MHIS 011, MHIS 012 or permission of instructor.

**MHIS 153. Topics in Eighteenth-Century Music. 3 Units.**

Students study music topics from the eighteenth century (high baroque, pre-classical, classical, and pre-romantic styles). Sample topics include the Bach family, Haydn or Mozart, birth of the symphony, etc. See instructor for specific topics in a given semester. This course meets once in four semesters. Prerequisite: MCOM 010, MCOM 011, MCOM 012, MCOM 013, MCOM 014, MCOM 015, MCOM 016, MCOM 017, MHIS 011, MHIS 012 or permission of instructor.

**MHIS 154. Topics in Nineteenth-Century Music. 3 Units.**

Students study music topics from the nineteenth century that cover a broad spectrum of repertory. Students examine common issues of the nineteenth century through the lens of particular repertoires, composers, and/or genres, e.g. Lied and Song Cycles, Nationalism, or fin-de-siecle Vienna. See instructor for specific topics in a given semester. This course meets once in four semesters. Prerequisite: MCOM 010, MCOM 011, MCOM 012, MCOM 013, MCOM 014, MCOM 015, MCOM 016, MCOM 017, MHIS 011, MHIS 012 or permission of instructor.

**MHIS 155. Topics in Music of the 20th-21st Century. 3 Units.**

Students study music topics in music of the 20th and 21st centuries. Sample topics concentrate on specific sub-periods and repertoires such as Russian music, music after 1945, etc. This course meets once in four semesters. Prerequisite: MCOM 010, MCOM 011, MCOM 012, MCOM 013, MCOM 014, MCOM 015, MCOM 016, MCOM 017, MHIS 011, MHIS 012 or permission of instructor.

**MHIS 158. Advanced History of Jazz. 3 Units.**

This course is a 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 that concern race, ethnicity, and social justice. Course content involves connections to slavery, Civil and World Wars, segregation, and the musical response of African-Americans. The course includes analysis of jazz compositions, live performance critiques, album reviews, artist papers, and a research project involving the Brubeck Collection. This course is designated for music students with junior or senior standing. Prerequisite: MCOM 011.

**MHIS 160. American Music. 3 Units.**

Students study the music in America from colonial times to the present. The focus is primarily Western music traditions by interacting with African-American and Native American musical traditions. Covers development of popular music traditions with respect to their effects on American musical composition and reception. Prerequisite: MCOM 010, MCOM 011, MCOM 012, MCOM 013, MCOM 014, MCOM 015, MCOM 016, MCOM 017, MHIS 011, MHIS 012 or permission of the instructor.

**MHIS 191. Independent Study. 1-3 Units.****MHIS 197. Research in Music History. 1-4 Units.**

Permission of instructor. Senior standing.

**MHIS 250. Medieval Music. 3 Units.**

Students study topics in music history to c. 1450. Emphasis is on research methodology. Prerequisites: MCOM 010-017, MHIS 011, 012, 013, or permission of instructor.

**MHIS 251. Music in the Renaissance. 3 Units.**

Students study topics in the history of the music of the 15th and 16th centuries. Prerequisites: MCOM 010-17, MHIS 011, 012, 013, or permission of instructor.

**MHIS 252. Music in the Baroque. 3 Units.**

Students study topics in music history from c. 1580-1750. Prerequisites: MCOM 010-017, MHIS 011, 012, 013, or permission of instructor.

**MHIS 253. Studies in the Classical Period. 3 Units.**

Students study music from c. 1750-1810 with stress on evolution of style and historical factors which relate to this evolution. Prerequisites: MCOM 010-017, MHIS 011, 012, 013, or permission of instructor.

**MHIS 254. Studies in the Romantic Period. 3 Units.**

Students study music of the 19th century and its relationship to other art forms and historical developments. Emphasis is on research methodology. Prerequisites: MCOM 010-017, MHIS 011, 012, 013, or permission of the instructor.

**MHIS 291. Graduate Independent Study. 1-3 Units.****MHIS 293. Special Topics. 3 Units.**

Music Therapy Courses

**MTHR 135. Music with Children in Inclusive Settings: Therapeutic and Educational Applications. 3 Units.**

This course presents specific music therapy techniques and skills for 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 also acquaints 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 018 or MCOM 002; or with instructor permission.

**MTHR 140. Psychology of Music. 3 Units.**

This course introduces the psychological foundations of music that include 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. The course is open to non-majors. Prerequisite: MCOM 002 or permission of the instructor.

**MTHR 141. Music Therapy in Mental Health and Social Services. 3 Units.**

MTHR 141 examines 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 current DSM criteria for mental disorders commonly encountered by music therapists, and an overview of major theories of psychotherapy as they relate to music therapy. The course introduces music therapy techniques for group treatment which includes music improvisation, songwriting, and basic relaxation methods. This course is for music therapy majors only and it must be taken concurrently with Fieldwork in Music Therapy. Prerequisites: MTHR 011, MTHR 018, MTHR 135, and MTHR 140, PSYC 111 and completion of Voice, Guitar, and Piano competencies.

**MTHR 142. Music Therapy in Medicine and Health Care. 3 Units.**

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 the 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. The course is for music therapy majors only. Prerequisites: MTHR 141, BIOL 011 and completion of Voice, Guitar, and Piano competencies.

**MTHR 143. Supervisory Techniques. 1 or 2 Unit.**

This course offers techniques in the supervision of music therapy fieldwork. The course is only open to music therapy majors by permission of the instructor. Prerequisites: MTHR 020, MTHR 140 and MTHR 150.

**MTHR 150. Fieldwork in Music Therapy. 1-2 Units.**

Fieldwork provides students with structured clinical experiences in music therapy under the supervision of a music therapist in varying community settings. This course repeated for credit and taken concurrently each semester students are enrolled in MTHR 135, MTHR 140, MTHR 141 and MTHR 142. Prerequisites: MTHR 011 and MTHR 018. This course is open only to music therapy majors, and 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 Unit.**

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, competency evaluation and individualized internship training plan. Students are required to enroll in MTHR 150 within the period of one year prior to the start of internship.

**MTHR 191. Independent Study. 1-2 Units.**

**MTHR 230. Bonny Method of Guided Imagery and Music Level I Training. 3 Units.**

Intensive 5-day residential seminar introduces theory and clinical applications of the Bonny Method of Guided Imagery and Music (BMGIM) and other music and imagery techniques. Participants gain intensive personal experience with BMGIM. Hands-on experiential exercises, demonstrations, and clinical examples introduce simple imagery techniques to add to participants' existing repertoire of therapeutic interventions. This residential phase of the course meets the Association of Music and Imagery (AMI) requirements for introductory training in the Bonny Method. The on-line learning component extends and deepens the student's understanding through exposure to literature in the Bonny Method, sharing of discoveries from readings and music listening, as well as personal reflection and integration of experiential learning. Due to the experiential nature of this course, participants must be willing to participate in all learning activities and in the group sharing process, and attend all seminar sessions as listed in the residential seminar course schedule. All students and instructors are expected to maintain confidentiality of personal material shared by group members. Prerequisites: Evidence of clinical experience and permission of instructor.

**MTHR 231. Individual Music Therapy: Advanced Theory and Techniques. 3 Units.**

This course explores current theories and techniques of music-centered psychotherapy for supportive, re-educative/rehabilitative, and re-constructive levels of clinical practice with a variety of populations. The course includes development of therapeutic relationship through music improvisation, and focused music-evoked imagery to address supportive and re-educative goals for individual clients. Experiential learning includes classroom simulations and supervised clinical practice. Prerequisites: MTHR 187 (or an AMTA-approved clinical internship) and MTHR 230 (or Level I training in the Bonny Method of Guided Imagery and Music) or permission of instructor.

**MTHR 232. Group Music Therapy: Advanced Theory and Techniques. 3 Units.**

This course examines theories and models for group music therapy with applications for a variety of clinical populations. The course includes approaches for quick group assessment and brief treatment environments. The focus is on therapist and member roles and tasks within group development processes. Students refine group facilitation skills that use music-centered techniques of improvisation and music-evoked imagery through in-class simulations and supervised clinical practice. Prerequisite: MTHR 231 with a "B" or better or permission of instructor.

**MTHR 240. Psychology of Music. 3 Units.**

Students examine the psychological foundations of music. Topics include 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. Students enrolled for graduate credit also complete a formal research project proposal and mock IRB proposal as preparation for eventual research activities within the graduate program or professional venues. This course is recommended for graduate students in music therapy or music education, but it is open to students in other majors. Prerequisite: competency in basic music reading skills.

**MTHR 245. Clinical Clerkship in Music Therapy. 1-4 Units.**

As an alternate requirement for Thesis, Clinical Clerkship is designed for students who may want to focus on clinical skills and knowledge. Students complete a major project related to an applied therapeutic or educational setting.

**MTHR 251. Music Therapy Supervision I: Introduction to Theory and Applications. 1 Unit.**

This course provides a foundation for effective music therapy clinical supervision. It introduces multicultural, ethical, and legal considerations and explores factors unique to music therapy supervision. Readings, workbook assignments, field observations and in-class discussion of theories and techniques prepare students for MTHR 252, and practical experience supervising undergraduate students in clinical training settings. Prerequisite: MTHR 187 or an AMTA approved clinical internship.

**MTHR 252. Music Therapy Supervision II: Applied Experience. 1 Unit.**

This course provides mentored practice in clinical supervision and it supports individualized skill development of competencies for professional participation in clinical management and student, volunteer, or peer supervision situations. Learning experiences include direct on-site supervision of undergraduate music therapy students in fieldwork placements, maintaining the on-site learning environment, monitoring student progress, conducting formal evaluations, conducting group student supervision and regular participation in supervisors group consultation meetings with faculty. Prerequisite: MTHR 251 with a "B" or better.

**MTHR 260. Advanced Clinical Practice in Music Therapy. 1 Unit.**

This course provides individualized experiences for development of advanced clinical skills in music therapy. Students may focus on a new area of specialization, or may work within a familiar clinical environment that develops skills at a more advanced level. Experiences may include supervised practice in advanced music therapy techniques, interdisciplinary collaboration, new program development, or expansion of an existing clinical program. Prerequisites: two semesters of MTHR 187 or clinical internship.

**MTHR 265. Human Research in Music Therapy: Supervised Experience. 1 Unit.**

This course offers individualized experiences for development of advanced research skills in music therapy. It provides faculty oversight and supervision of human research in clinical or laboratory settings. Students may focus on their own independent research project or may work within a collaborative or faculty-directed research environment. It is required for students who conduct summer research activities with human subjects and includes projects that contribute to completion of the master's thesis or clinical clerkship. This course may be repeated. Prerequisites: Completion of University Human Subjects (IRB) training for student investigators, and permission of instructor.

**MTHR 275. College Teaching in Music Therapy: Curriculum, Competencies and Classroom. 3 Units.**

Students review the AMTA requirements for music therapy undergraduate program curriculum and for competency-based education and clinical training. The course provides mentored practice in teaching foundational level music therapy college courses, and it supports individualized skill development for professional participation in academic music therapy programs as an instructor. Permission of instructor.

**MTHR 291. Graduate Independent Study. 1-4 Units.**

**MTHR 299. Thesis. 1-4 Units.**

Students create an original monograph that embodies original research.

General Music Courses

**MUSC 202. Introduction in Music Research. 3 Units.**

This course is designed for the graduate level student to develop music research skills.

**MUSC 203. Contemporary Issues in Music Education and Music Therapy. 3 Units.**

Graduate students research, analyze, and reflect on current values, philosophical issues, and contemporary trends in the professions of music education and music therapy.

# Eberhardt School of Business

Lewis R. Gale, Dean

Cynthia F. Eakin, Associate Dean for Graduate Programs

## Programs Offered

**Master in Business Administration (MBA)**

**Master of Accounting (MAcc)**

**Bachelor of Science in Accounting/Master of Accounting Dual Degree Program**

**JD/MBA**

**PharmD/MBA**

**Peace Corps MBA**

## Mission

The Eberhardt School of Business develops knowledgeable, innovative business leaders in a personalized, experience-based learning environment and produces scholarship that contributes to disciplinary knowledge, informs teaching, and advances the practice of business.

We share a set of underlying principles that govern our behaviors and our ability to achieve our mission. These include:

- Maintaining a student-centered learning environment;
- Educating the whole person;
- Stimulating intellectual growth;
- Maintaining a mutually supportive community of faculty, staff and students;
- Engaging external stakeholders;
- Promoting excellence;
- Being socially responsible;
- Behaving ethically and with integrity;
- Providing service to the university, community and profession.

Degree programs offered by the Eberhardt School of Business are designed to fulfill this mission and to provide the educational breadth and depth tomorrow's leaders will need.

## Learning Goals, Objectives, and Outcomes

The goals of the Eberhardt School of Business graduate programs are to produce graduate students who possess business knowledge and skills, who are able to apply their knowledge and skills in a global business setting, who are able to work as part of a team, and who are able to communicate effectively.

The specific objectives and outcomes are:

1. Demonstrate business knowledge and skills
  - a. For each business discipline, each student demonstrates knowledge of business principles, concepts, theories, and perspectives.
  - b. For each business discipline, each student is skilled in the use of business procedures, methods, strategies, and approaches.
  - c. Each student demonstrates an understanding of the interrelationships among business disciplines.

The business disciplines include accounting, finance, organizational behavior, marketing, operations management, managerial economics, information systems, quantitative analysis, and strategy development and implementation.

2. Apply business knowledge and skills

Each student can apply knowledge and skills to business situations and problems in domestic and international settings. This includes:

- a. Strategic thinking. Each student can analyze business environments and opportunities, and to align business activities in developing and implementing organizational strategy and change in complex and uncertain conditions.
- b. Critical thinking. Each student can identify problems, define objectives, gather and analyze information, evaluate risks and alternatives, and make decisions that are ethical and socially responsible and incorporate cultural perspectives.

3. Demonstrate effective teamwork skills

Each student can work effectively with others as a colleague and as a manager. This includes:

- a. Teamwork. Each student is able to work in a team and collaborate effectively with others.
- b. Group and organization effectiveness. Each student is able to manage, influence, and lead others.

4. Communicate clear ideas and plans

- a. Each student demonstrates effective oral communication skills.
- b. Each student demonstrates effective written communication skills.

## Master of Business Administration

The Eberhardt School of Business MBA Program is designed to train the managers of the 21<sup>st</sup> 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. Students may choose the 16-Month Full Time MBA pathway or the Part-Time MBA pathway. Admission, prerequisite, and program requirements are the same for both pathways.

## Master of Accounting

The nine-month Master of Accounting is designed for students who possess an undergraduate degree in accounting and wish to apply for licensure as a Certified Public Accountant under California's new accounting education rules. The challenging coursework goes beyond traditional accounting curriculum to emphasize important skills such as leadership, communication, professional ethics, and applied research. Students who do not have an undergraduate accounting degree are also eligible for the Master of Accounting program, but in most cases, will spend two or more years completing the coursework necessary for licensure as a Certified Public Accountant.

## Bachelor of Science in Accounting/Master of Accounting Dual Degree Program

The Dual Degree Program is a five-year program designed for Pacific's undergraduate accounting students. The program begins in the third undergraduate academic year with a "junior core" in accounting, includes a broad foundation in business, and finishes with a specific focus in professional accounting. At the end of the fifth year successful graduates will be awarded both a Bachelor of Science in Accounting and a Master of Accounting, and will meet the current education requirements for California licensure as a Certified Public Accountant.

## Graduate Admission Requirements

- Admission to the Eberhardt School of Business MBA and Master of Accounting programs is competitive and based on criteria which indicate a high promise of success. Performance in prior coursework and standardized test scores are strong considerations in the admission decision.
- A U.S. bachelor's degree or its equivalent is required for admission. The Graduate Admissions Committee gives equal consideration to all undergraduate majors in the admissions process.

- 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 and supporting materials.
- 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.
- A score on the Graduate Management Admissions Test (GMAT). For GMAT information and materials go to [www.mba.com](http://www.mba.com) (<http://www.mba.com>). These scores must be less than five years old.
- Applicants are encouraged to prepare for the GMAT by obtaining review material and sample questions published specifically for this purpose.

## Graduate Program Prerequisites

All MBA and Master of Accounting students are required to complete prerequisite courses in subjects necessary for success in graduate coursework prior to beginning a graduate business program. The required prerequisites are three semester units of basic Macroeconomics, three units of basic Microeconomics, three units of Probability and Statistics, and three units of College level Finite Math/Calculus. Three semester units of Managerial Economics may be taken in lieu of the six units of basic economics. Prerequisite courses may be taken at either the undergraduate or graduate level.

## MBA Program Requirements

### Curriculum

The MBA curriculum has a global orientation and is designed around an intensive phase of foundation courses and an advanced phase of integrated management studies. It offers a carefully designed combination of rigorous classroom work, intensive case-based discussions, and off-campus experiences. Full-time students progress through the program as part of a cohort.

### Internship Program

All students are required to participate in an internship during the MBA program.

### Applied Research/Consulting Projects

All students participate in field projects throughout their MBA courses. Students who desire additional field experience may apply for additional internships or consulting projects.

### International Experience

Because international competency is an essential element of success in today's global economy, all Eberhardt School of Business MBA students participate in an international business experience through the Global Business Competition course (BUSI 268). This course requires overseas travel of approximately two-weeks. has been conducted locations such as China, Turkey, Panama, Costa Rica, Chile, Finland, Hong Kong, Korea, Singapore, France, Spain, Taiwan, England and Ireland. Students are responsible for all travel costs including airfare, lodging, ground transportation, meals, and other program costs.

### Eberhardt School of Business Faculty

Lewis R. Gale, Dean and Professor of Business, 2010, BA, California State University, Fresno. 1989; M.S., Arizona State University, 1994. Ph.D., Arizona State University, 1994.

Cynthia Eakin, Associate Dean for Graduate Programs, 1996, BS, Florida State University, 1986; MA, 1988; PhD, 1993.

Ray Sylvester, Associate Dean, Professor, 1972, BA, Gettysburg College, 1962; MBA, University of Michigan, 1963; PhD, 1972.

Thomas E. Brierton, Associate Professor, 1989, BBA, University of Wisconsin, 1978; JD, Northern Illinois University, College of Law, 1983.

Michael L. Canniff, Lecturer, 2003, BA, University of Minnesota, 1985; MS, Syracuse University, 1990.

Joel Herche, Associate Professor, 1994, BA, Central Washington University, 1979; MBA, Golden Gate University, 1986; PhD, University of Oregon, 1989.

Peter E. Hilsenrath, Professor, 2009, BA, University of California, Santa Cruz, 1978; PhD, University of Texas, Austin.

Ronald Hoverstad, Associate Professor, 1990, BA, Augsburg College, 1974; MBA, St. Cloud State University, 1981; PhD, University of Minnesota, 1986.

Hsinchih Huang, Associate Professor, 1998, BS, National Chiao-Tung University (Taiwan), 1986; MBA, Rochester Institute of Technology, 1990; PhD, University of North Texas, 1996.

Sacha M. Joseph, Assistant Professor, 2006, BA, University of the West Indies (Jamaica), 1998; MS, Florida State University, 2004; PhD, Florida State University, 2006.

John R. Knight, Professor, 1995, BA, Tulane University, 1969; MBA, Louisiana State University, 1978; PhD, 1990.

Unro Lee, Professor, 1990, BA, University of Southern California, 1977; MA, Indiana University, 1981; PhD, Purdue University, 1986.

Jeffrey A. Miles, Professor, 1996, BA, Ohio State University, 1984; M.P.S., Cornell University, 1986; MLHR, Ohio State University, 1992; PhD, 1993.

Stefanie E. Naumann, Assistant Professor, 1999, BS, Tulane University, 1993; PhD, Louisiana State, 1998.

Gerald V. Post, Professor, 1999, BA, University of Wisconsin-Eau Claire, 1978; PhD, Iowa State University, 1983.

Williar T. Price, Professor, 1980, BS, University of California, Berkeley, 1961; M.P.W.A., University of Pittsburgh, 1969; PhD, 1973.

Chris Sablynski, Associate Professor, 2009, BS, University of Florida, 1986; MS, San Francisco State University, 1996; PhD, University of Washington, 2002.

Dara M. Szyliowicz, Assistant Professor, 2006, BA, Columbia University, 1988; MA, University of California, Berkeley, 1990; PhD, University of Illinois, 1998.

Eric W. Typpo, Associate Professor, 1998, BS, University of Missouri, 1986; MA, 1990; PhD, Florida State University, 1994.

Richard J. Vargo, Professor, 1981, BS, Marietta College, 1963; MBA, Ohio University, 1965; PhD, University of Washington, 1969.

R. Daniel Wadhvani, Assistant Professor, 2006, BA, Yale University, 1991; PhD, University of Pennsylvania, 2003.

Suzanne B. Walchli, Assistant Professor, 2000, BA, Duke University, 1975; MBA, Wharton Graduate Division, University of Pennsylvania, 1978; PhD, Northwestern University, 1996.

Cynthia K. Wagner Weick, Professor, 1990, BS, Ohio State University, 1979; MS, 1980; PhD, University of Pennsylvania, 1986.

Stephen W. Wheeler, Professor, 1994, BA, California State University, Sacramento, 1976; MS, 1982; PhD, Arizona State University, 1988.

PengCheng Zhu, Assistant Professor of Finance, 2009, BBA, Shanghai Institute of Foreign Trade, 2002; MBA, Carleton University, 2004; PhD, Carleton University, 2009.

## Master of Business Administration - Full Time Program

Students must complete a minimum of 54 units with a Pacific cumulative grade point average of 3.0 to earn the master of business administration degree.

### I. Course Requirements

#### First Fall Semester

|          |                             |    |
|----------|-----------------------------|----|
| BUSI 211 | Applied Business Principles | 17 |
|----------|-----------------------------|----|

#### Spring Semester

|          |                               |   |
|----------|-------------------------------|---|
| BUSI 220 | Corporate Finance             | 3 |
| BUSI 265 | Global Marketing Strategy     | 3 |
| BUSI 274 | Managing Quality/Productivity | 3 |
| BUSI 276 | Entrepreneurial Management    | 3 |

|                            |  |   |
|----------------------------|--|---|
| Plus One Elective Course * |  | 3 |
|----------------------------|--|---|

#### First Summer Session

|          |                             |   |
|----------|-----------------------------|---|
| BUSI 268 | Global Business Competition | 3 |
|----------|-----------------------------|---|

#### Second Fall Semester

|          |  |   |
|----------|--|---|
| BUSI 213 | Ethics and Corporate Social Responsibility | 3 |
| BUSI 214 | Negotiation                                | 2 |
| BUSI 279 | Leadership                                 | 2 |
| BUSI 281 | Strategic Management                       | 3 |

|                               |  |   |
|-------------------------------|--|---|
| Plus Three Elective Courses * |  | 9 |
|-------------------------------|--|---|

|             |  |    |
|-------------|--|----|
| Total Hours |  | 54 |
|-------------|--|----|

#### Electives

The 16-month MBA includes electives in Finance, Marketing, Entrepreneurship, Sport Management, and Healthcare Management.

#### Finance Electives

|          |                              |   |
|----------|------------------------------|---|
| BUSI 221 | Entrepreneurial Finance      | 3 |
| BUSI 222 | Student Investment Fund      | 3 |
| BUSI 223 | Investment Management        | 3 |
| BUSI 226 | Financial Statement Analysis | 3 |
| BUSI 263 | International Finance        | 3 |

#### Marketing Electives

|          |                       |   |
|----------|-----------------------|---|
| BUSI 241 | Marketing Research    | 3 |
| BUSI 246 | Marketing of Services | 3 |
| BUSI 247 | Consumer Behavior     | 3 |
| BUSI 293 | Special Topics        | 4 |

#### Entrepreneurship Electives

|          |                           |   |
|----------|---------------------------|---|
| BUSI 221 | Entrepreneurial Finance   | 3 |
| BUSI 272 | Entrepreneurship          | 3 |
| BUSI 275 | Technology and Innovation | 3 |
| BUSI 293 | Special Topics            | 4 |

#### Healthcare Management Electives

|          |                                  |   |
|----------|----------------------------------|---|
| BUSI 250 | Health Finance: Health Insurance | 3 |
| BUSI 251 | International Healthcare Systems | 3 |
| BUSI 252 | Healthcare Law                   | 3 |
| BUSI 254 | Health Economics                 | 4 |
| BUSI 293 | Special Topics                   | 4 |

#### Sport Management Electives

|           |  |   |
|-----------|--|---|
| HESP 265  | Advanced Sports Law                      | 4 |
| HESP 269  | Advanced Management of Sport Enterprises | 4 |
| HESP 274  | Advanced Sport Marketing and Promotions  | 4 |
| HESP 275  | Advanced Sport Management                | 4 |
| HESP 287A | Advanced Internship: Sport Management    | 4 |

## Master of Business Administration - Part Time Program

Students must complete a minimum of 54 units with a Pacific cumulative grade point average of 3.0 to earn the master of business administration degree.

### I. Course Requirements

#### First Fall Semester

|          |                                     |   |
|----------|-------------------------------------|---|
| BUSI 201 | Financial and Managerial Accounting | 3 |
| BUSI 205 | Fundamentals of Finance             | 3 |

#### First Spring Semester

|          |                                |   |
|----------|--------------------------------|---|
| BUSI 200 | Management Information Systems | 2 |
| BUSI 206 | Data and Decisions             | 2 |
| BUSI 209 | Organizational Behavior        | 2 |

#### First Summer Session

|          |                      |   |
|----------|----------------------|---|
| BUSI 207 | Marketing Management | 2 |
| BUSI 208 | Managerial Economics | 2 |

#### Second Fall Semester

|              |             |   |
|--------------|-------------|---|
| BUSI 214     | Negotiation | 2 |
| BUSI 279     | Leadership  | 2 |
| MBA Elective |             | 3 |

#### Second Spring Semester

|          |                           |   |
|----------|---------------------------|---|
| BUSI 220 | Corporate Finance         | 3 |
| BUSI 265 | Global Marketing Strategy | 3 |

#### Second Summer Session

|              |  |   |
|--------------|--|---|
| MBA Elective |  | 3 |
|--------------|--|---|

#### Third Fall Semester

|              |  |   |
|--------------|--|---|
| BUSI 213     | Ethics and Corporate Social Responsibility | 3 |
| MBA Elective |  | 3 |

#### Third Spring Semester

|          |                               |   |
|----------|-------------------------------|---|
| BUSI 274 | Managing Quality/Productivity | 3 |
| BUSI 276 | Entrepreneurial Management    | 3 |

#### Third Summer Session

|          |                             |   |
|----------|-----------------------------|---|
| BUSI 268 | Global Business Competition | 3 |
|----------|-----------------------------|---|

#### Fourth Fall Semester

|              |                                |   |
|--------------|--------------------------------|---|
| BUSI 212     | MBA Career Development Seminar | 1 |
| BUSI 281     | Strategic Management           | 3 |
| MBA Elective |                                | 3 |

|             |  |    |
|-------------|--|----|
| Total Hours |  | 54 |
|-------------|--|----|

#### Electives

The part time MBA includes electives in Finance, Marketing, Entrepreneurship, Sport Management, and Healthcare Management.

#### Finance Electives

|          |                              |   |
|----------|------------------------------|---|
| BUSI 221 | Entrepreneurial Finance      | 3 |
| BUSI 222 | Student Investment Fund      | 3 |
| BUSI 223 | Investment Management        | 3 |
| BUSI 226 | Financial Statement Analysis | 3 |
| BUSI 263 | International Finance        | 3 |

#### Marketing Electives

|          |                       |   |
|----------|-----------------------|---|
| BUSI 241 | Marketing Research    | 3 |
| BUSI 246 | Marketing of Services | 3 |
| BUSI 247 | Consumer Behavior     | 3 |
| BUSI 293 | Special Topics        | 4 |

#### Entrepreneurship Electives

|          |                         |   |
|----------|-------------------------|---|
| BUSI 221 | Entrepreneurial Finance | 3 |
| BUSI 272 | Entrepreneurship        | 3 |

|  |  |   |
|--|--|---|
| BUSI 275                               | Technology and Innovation                | 3 |
| BUSI 293                               | Special Topics                           | 4 |
| <b>Healthcare Management Electives</b> |  |   |
| BUSI 250                               | Health Finance: Health Insurance         | 3 |
| BUSI 251                               | International Healthcare Systems         | 3 |
| BUSI 252                               | Healthcare Law                           | 3 |
| BUSI 254                               | Health Economics                         | 4 |
| BUSI 293                               | Special Topics                           | 4 |
| <b>Sport Management Electives</b>      |  |   |
| HESP 265                               | Advanced Sports Law                      | 4 |
| HESP 269                               | Advanced Management of Sport Enterprises | 4 |
| HESP 274                               | Advanced Sport Marketing and Promotions  | 4 |
| HESP 275                               | Advanced Sport Management                | 4 |
| HESP 287A                              | Advanced Internship: Sport Management    | 4 |

## Bachelor of Science in Accounting/Master of Accounting Dual Degree Program Requirements

Students must complete a minimum of 150 units with a Pacific cumulative and school/program grade point average of 2.0 in order to earn the bachelor of science in accounting degree. Students must earn a grade point average of 3.0 in all graduate courses to earn the master of accounting degree.

### Admission to the Dual Degree Program

Current Pacific students, or admitted transfer students who have completed the Junior Core with a 3.0 overall GPA and a 3.0 Accounting GPA are eligible to begin the dual degree program. Students receiving a C- or below in any of the Junior Core courses do not qualify for admission into the dual degree program. The Junior Core consists of:

|           |   |   |
|-----------|---|---|
| ECON 053  | Introductory Microeconomics                     | 4 |
| ECON 055  | Introductory Macroeconomics: Theory and Policy  | 4 |
| MATH 037  | Introduction to Statistics and Probability      | 4 |
| MATH 045  | Introduction to Finite Mathematics and Calculus | 4 |
| BUSI 023  | Business Communications                         | 4 |
| BUSI 031  | Principles of Financial Accounting              | 4 |
| BUSI 033  | Principles of Managerial Accounting             | 4 |
| BUSI 100  | Management Information Systems                  | 4 |
| BUSI 105  | Financial Management                            | 4 |
| BUSI 113A | Intermediate Accounting I                       | 4 |
| BUSI 113B | Intermediate Accounting II                      | 4 |

Students should apply for admission into the dual degree program at the beginning of the spring semester of their junior year.

### I. General Education Requirements (for students starting as Freshmen):

|          |                                   |   |
|----------|-----------------------------------|---|
| PACS 001 | What is a Good Society            | 4 |
| PACS 002 | Topical Seminar on a Good Society | 4 |
| PACS 003 | What is an Ethical Life?          | 3 |

**Note: 1)** Pacific Seminars cannot be taken for Pass/No Credit.  
**2)** Transfer students with 28 or more transfer units complete 2 additional General Education elective courses from IC and IIIC.

One course from each subdivision below:

#### Social and Behavioral Sciences

- IA. Individual and Interpersonal Behavior (ECON 053)
- IB. U.S. Studies (ECON 055)
- IC. Global Studies (Transfers only)

#### Arts and Humanities

- IIA. Language and Literature (ENGL 025 or COMM 027)
- IIB. Worldviews and Ethics
- IIC. Visual and Performing Arts

#### Natural Sciences and Mathematics

- IIIA. Natural Sciences
- IIIB. Mathematics and Formal Logic (MATH 045 or MATH 051)
- IIIC. Science, Technology and Society (Transfers only) or a second IIIA Natural Sciences course (Transfers only)

**Note: 1)** No more than 2 courses from a single discipline may be applied to meet the requirements of the general education program

### II. Diversity Requirement

Students must complete one diversity course (3-4 units)

**Note: 1)** Transfer students with 28 units or more transfer units prior to fall 2011 are encouraged but not required to complete a designated course prior to graduation. **2)** Courses may be used also to meet general education and/or major/minor requirements.

### III. Fundamental Skills

Students must demonstrate competence in:

Reading

Writing

Quantitative analysis

### IV. Pre-professional Skills Requirements

|          |  |   |
|----------|--|---|
| COMP 025 | Computers and Information Processing       | 4 |
| BUSI 023 | Business Communications                    | 4 |
| MATH 037 | Introduction to Statistics and Probability | 4 |

### V. Core Requirements

|          |   |   |
|----------|---|---|
| BUSI 010 | Dean's Seminar                                | 1 |
| BUSI 031 | Principles of Financial Accounting            | 4 |
| BUSI 033 | Principles of Managerial Accounting           | 4 |
| BUSI 053 | The Legal and Ethical Environment of Business | 4 |
| BUSI 100 | Management Information Systems                | 4 |
| BUSI 105 | Financial Management                          | 4 |
| BUSI 107 | Marketing Management                          | 4 |
| BUSI 109 | Management and Organizational Behavior        | 4 |
| BUSI 110 | Career and Development Seminar                | 1 |

**Note: 1)** BUSI 274 below is substituted for BUSI 104. **2)** BUSI 281 below is substituted for BUSI 181.

### VI. Accounting Requirements

|  |                                 |       |
|--|---------------------------------|-------|
| BUSI 111   | Accounting Information Systems  | 4     |
| BUSI 112   | Computer Skills for Accountants | 1     |
| BUSI 113A  | Intermediate Accounting I       | 4     |
| BUSI 113B  | Intermediate Accounting II      | 4     |
| BUSI 115   | Tax Accounting                  | 4     |
| BUSI 117   | Cost Accounting                 | 4     |
| BUSI 119   | Auditing                        | 4     |
| BUSI 157   | Commercial Law                  | 4     |
| Electives - May be undergraduate and/or graduate courses |                                 | 10-17 |

### VII. Master of Accounting Requirements

|          |  |   |
|----------|--|---|
| BUSI 213 | Ethics and Corporate Social Responsibility | 3 |
| BUSI 214 | Negotiation                                | 2 |
| BUSI 215 | Taxation of Business Entities              | 3 |

|          |  |   |
|----------|--|---|
| BUSI 216 | Professional Accounting Research             | 2 |
| BUSI 217 | Ethics for Professional Accountants          | 3 |
| BUSI 218 | Advanced Financial Accounting Graduate Level | 3 |
| BUSI 219 | Graduate Auditing Seminar                    | 3 |
| BUSI 226 | Financial Statement Analysis                 | 3 |
| BUSI 274 | Managing Quality/Productivity                | 3 |
| BUSI 279 | Leadership                                   | 2 |
| BUSI 281 | Strategic Management                         | 3 |

## Master of Accounting

Students must complete a minimum of 30 units with a cumulative grade point average of 3.0 in order to earn the Master of Accounting degree.

### I. Course Requirements

|          |  |   |
|----------|--|---|
| BUSI 213 | Ethics and Corporate Social Responsibility   | 3 |
| BUSI 214 | Negotiation                                  | 2 |
| BUSI 215 | Taxation of Business Entities                | 3 |
| BUSI 216 | Professional Accounting Research             | 2 |
| BUSI 217 | Ethics for Professional Accountants          | 3 |
| BUSI 218 | Advanced Financial Accounting Graduate Level | 3 |
| BUSI 219 | Graduate Auditing Seminar                    | 3 |
| BUSI 226 | Financial Statement Analysis                 | 3 |
| BUSI 274 | Managing Quality/Productivity                | 3 |
| BUSI 279 | Leadership                                   | 2 |
| BUSI 281 | Strategic Management                         | 3 |

## Doctor of Pharmacy/Master of Business Administration Joint Degree

*PharmD/MBA:* This joint-degree program allows students interested in management positions in the pharmaceutical, biotechnology, and healthcare industries to develop the needed expertise. Both degrees can be completed in four years, regardless of academic background. Students interested in this program must apply and be accepted by both the MBA and Doctor of Pharmacy programs separately. Please see MBA application for special instructions.

The Eberhardt School of Business PharmD/MBA is modeled after the 16-month MBA. Students spend one year as a member of a full-time MBA cohort before beginning their pharmacy studies. Students then return to the Eberhardt School of Business MBA program in the fall of their third year for a two-unit capstone MBA course.

Students must complete a minimum of 51 units with a cumulative grade point average of 3.0 in order to earn the PharmD/MBA degrees.

### First Year Fall Semester

|          |                             |    |
|----------|-----------------------------|----|
| BUSI 255 | Applied Business Principles | 14 |
| BUSI 254 | Health Economics            | 4  |

### First Year Spring Semester

|               |                                  |   |
|---------------|----------------------------------|---|
| BUSI 250      | Health Finance: Health Insurance | 3 |
| BUSI 276      | Entrepreneurial Management       | 3 |
| BUSI 265      | Global Marketing Strategy        | 3 |
| BUSI 274      | Managing Quality/Productivity    | 3 |
| MBA Electives |                                  | 6 |

### First Year Summer Session

|          |                             |   |
|----------|-----------------------------|---|
| BUSI 268 | Global Business Competition | 3 |
|----------|-----------------------------|---|

### Second Year Fall, Winter, and Spring

|                       |  |   |
|-----------------------|--|---|
| Pharmacy Curriculum * |  | 1 |
|-----------------------|--|---|

### Third Year Fall Semester

|                     |                         |   |
|---------------------|-------------------------|---|
| BUSI 280            | Strategy Implementation | 2 |
| Pharmacy Curriculum |                         |   |

### Third Year Winter and Spring Semester

|                       |   |
|-----------------------|---|
| Pharmacy Curriculum * | 2 |
|-----------------------|---|

### Fourth Year Fall, Winter and Spring Semester

|                       |    |
|-----------------------|----|
| Pharmacy Curriculum * | 6  |
| Total Hours           | 50 |

\* Nine units of MBA credit is awarded for the following pharmacy (PHRM) courses:

- PHRM 111 Pharmacy Practice and Professionalism
- PHRM 152 Pharmacy Law and Ethics
- PHRM 161 Pharmacy Management
- PHRM 173 Hospital Pharmacy APPE
- PHRM 174 Community Pharmacy APPE

## Juris Doctorate/Master of Business Administration Joint Degree

*Joint-degree JD/MBA Program:* The joint-degree JD/MBA Program allows students to complete their three-year law degree at Pacific's McGeorge School of Law and the 16-month Eberhardt 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-degree JD/MBA Program must apply and be accepted by both the MBA Program and the Law Program separately.

Contact the MBA Program Office for a sample Plan of Study.

## Master of Business Administration Peace Corps International Program

*Peace Corps Masters International MBA Program:* Masters Internationalist students complete a portion of their studies on campus prior to entering the Peace Corps. Students then leave for a Peace Corps assignment that includes language, technical and cross-cultural training. After completing a Peace Corps assignment, students return to campus for a semester to complete their degree. All returned Peace Corps volunteers receive a stipend from the Peace Corps for their volunteer service. Students interested in the Masters International Program must apply and be accepted by both the MBA Program and the Peace Corps separately.

Contact the MBA Program Office for a sample plan of study.

### Business Administration Courses

#### **BUSI 100. Management Information Systems. 4 Units.**

This course is an introduction to the concepts and skills needed to utilize information systems resources. The course focuses on the role of information systems in management function with an emphasis on end-user computing, that includes the role of users in information system planning and design. Topics include information systems technology, applications and development. Students gain experience with spreadsheet, data base and network applications. Prerequisite: COMP 025 or COMP 051.

#### **BUSI 104. Operations Management. 4 Units.**

Students analyze the production and operations systems in the organization and application of quantitative methods in solution of production and operations problems. A major emphasis is on managerial and economic implications. Prerequisites: BUSI 031, BUSI 033, ECON 053, ECON 055, MATH 037, MATH 045 and an acceptable computer course. Junior standing.

#### **BUSI 105. Financial Management. 4 Units.**

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 031, ECON 053, ECON 055, MATH 037, MATH 045. Junior standing.



**BUSI 107. Marketing Management. 4 Units.**

BUSI 107 is an introduction to the institutions, techniques, policies and procedures utilized in the planning and performance of the activities which direct the flow of goods and services from producers to consumers. An emphasis is placed on the managerial process of decision-making in the setting of marketing strategy. Prerequisite: ECON 053. Sophomore standing.

**BUSI 109. Management and Organizational Behavior. 4 Units.**

BUSI 109 applies the concepts of organizational behavior and structure theories to the managerial processes, and emphasizes how organizational efficiency and effectiveness are developed. Junior standing.

**BUSI 110. Career and Development Seminar. 1 Unit.**

This course is designed to enable business students to clearly define their career objectives and available opportunities. Through the course business students understand the connection between internships and full-time careers, are trained in the methods of conducting a successful job search and prepare for on-going career development. Topics include career assessment, resumes and related correspondence, interviewing, career planning, and job search resources. The course also discusses opportunities available in graduate studies. Junior standing.

**BUSI 111. Accounting Information Systems. 4 Units.**

The course emphasizes the use of accounting software and the interaction of accountants with information systems. It also covers assessment of internal and computer controls in order to identify key risks within accounting cycles, and it reviews the latest computer architectures used in ERP. Prerequisites: BUSI 033 and BUSI 100. Junior standing.

**BUSI 112. Computer Skills for Accountants. 1 Unit.**

This course is a hands-on laboratory course that continues the study of spreadsheet applications and other accounting software programs, with an emphasis on projects especially important to accountants. This course emphasizes the more advanced accounting situations that spreadsheet applications and other programs make easier. Prerequisites: COMP 025, BUSI 031, BUSI 033, BUSI 100 with a "C" or better. Co-requisite: BUSI 111.

**BUSI 113A. Intermediate Accounting I. 4 Units.**

Students study the 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. Prerequisite: BUSI 031 with a "C" or better. Junior standing.

**BUSI 113B. Intermediate Accounting II. 4 Units.**

Students continue to study generally accepted accounting principles. Topics include owners' equity, dilutive securities, pensions, leases, income taxes, statement of cash flows and inflation accounting. Prerequisite: BUSI 113A with a "C" or better. Junior standing.

**BUSI 113C. Advanced Accounting. 4 Units.**

Students study advanced accounting theory and practice that includes accounting for inter-corporate investments, partnerships, foreign currency transactions, government and nonprofit organizations and current topics. Prerequisite: BUSI 113B with a "C" or better. Junior standing.

**BUSI 115. Tax Accounting. 4 Units.**

Students study federal tax laws and doctrines that significantly affect businesses, property transactions, and individuals. Tax planning techniques and tax research skills are emphasized. Prerequisites: BUSI 031 and BUSI 033 both with a "C" or better. Junior standing.

**BUSI 117. Cost Accounting. 4 Units.**

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 031 and BUSI 033 both with a "C" or better; MATH 037. Junior standing.

**BUSI 119. Auditing. 4 Units.**

This capstone course in accounting studies 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. Prerequisite: BUSI 113A with a "C" or better. Junior standing.

**BUSI 121. Financial Markets. 4 Units.**

Students examine 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. Prerequisite: BUSI 105 with a "C" or better. Junior standing.

**BUSI 122. Student Investment Fund (SIF). 4 Units.**

Operated entirely by students, this course allows students to gain hands-on, real world experience in managing an investment fund with substantial market value. Students perform sector analyses as well as financial analyses of a wide array of securities. As a group they determine the fund's sector allocation and stock/bond/cash allocation. SIF, while maintaining a well-diversified profile, strives to outperform the market (S&P 500). Prerequisites: BUSI 105 with a "C" or better and permission of instructor. Junior standing. May be taken twice for credit.

**BUSI 123. Investment Analysis. 4 Units.**

Students examine the nature of securities markets and the characteristics of various types of securities for institutional and personal investment. Sources of investment information, security valuation and investment planning are introduced. Prerequisite: BUSI 105 with a "C" or better. Junior standing.

**BUSI 124. Entrepreneurial Finance. 4 Units.**

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. Prerequisite: BUSI 105 with a "C" or better. Junior standing.

**BUSI 125. Intermediate Financial Management. 4 Units.**

This is 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. Prerequisite: BUSI 105 with a "C" or better. Junior standing.

**BUSI 126. Topics in Finance. 4 Units.**

This course is an in-depth examination of special topics of current interest in the field of finance. Students and faculty together explore empirical and theoretical issues in such areas of finance as investment analysis, financial management, financial markets and other related areas. Prerequisites: BUSI 105 with a "C" or better and BUSI 121. Junior standing.

**BUSI 127. Legal Aspects of Real Estate. 4 Units.**

Students study the legal aspects that concern real estate and real estate transactions. Topics include deeds, listing agreements, title insurance, real estate contracts, closing, property taxation, land use regulations and landlord-tenant relationships. Prerequisite: BUSI 053. Junior standing.

**BUSI 134. Conflict Management. 4 Units.**

Conflict is inevitable in organizational, inter-organizational 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, and particularly emphasizes negotiation. Prerequisite: BUSI 109 with a "C" or better. Junior standing.

**BUSI 136. Business Programming. 4 Units.**

This course introduces students to programming logic and design. Visual Basic is used to emphasize the development of business applications. Students also study Windows design elements, forms, and events. Junior standing.

**BUSI 137. Database Management Systems. 4 Units.**

Students learn to develop database management systems to design and build business applications. The course teaches database design (normalization), queries (SQL), development of business applications that use forms and reports, and an introduction to database administration. Prerequisite: BUSI 100 with a "C" or better. Junior standing.

**BUSI 138. Networking and Telecommunications Management. 4 Units.**

Students examine design, implementation, and management of local area networks. Studies include design issues in wide area networks and telecommunications with emphasis on Internet connectivity in addition to network server setup and administration that includes Web site administration. Prerequisite: BUSI 100 with a "C" or better. Junior standing.

**BUSI 139. Electronic Commerce Project. 4 Units.**

Students design and build applications for electronic commerce. Students use databases and programming to build interactive Web sites. Prerequisite: BUSI 100 with a "C" or better. Junior standing.

**BUSI 140. Business Systems Analysis. 4 Units.**

Students study systems development life cycle, methods and tools for systems analysis and design, human factors, user interface, and systems integration issues. Prerequisite: BUSI 136. Junior standing.

**BUSI 141. Marketing Research. 4 Units.**

Students study the concepts and techniques useful in the solution of marketing problems and in the identification of marketing opportunities. This course emphasizes the design of information acquisition and the evaluation and interpretation of research findings. Prerequisites: BUSI 107 with a "C" or better and MATH 037. Junior standing.

**BUSI 143. Product Innovation. 4 Units.**

Maintaining competitiveness in the contemporary marketplace requires that companies focus increasingly on the management of product and service innovation. This course addresses 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 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 and BUSI 141 with a "C" or better. Junior standing.

**BUSI 147. Consumer Behavior. 4 Units.**

Students study the bases for consumer behavior, which include relevant information from social psychology, sociology, and cultural anthropology. Topics include the application of analysis of consumers' behavior and attitudes to marketing management decisions. Management decision areas that are discussed include advertising, product development, marketing research and pricing. Prerequisite: BUSI 107 with a "C" or better. Junior standing.

**BUSI 148. Promotions Management. 4 Units.**

Students study the theory and practices used in the promotions component of the marketing mix. Students are exposed to a number of techniques employed by marketing departments, advertising firms and public relations professionals to advertise and promote products and services. Prerequisite: BUSI 107 with a "C" or better. Junior standing.

**BUSI 149. Strategic Marketing. 4 Units.**

Students are introduced to the strategic marketing process, that includes the analysis of marketing situations, identification of problems, determination of solutions, implementation of corrective action, and planning strategy. Prerequisites: BUSI 105 and BUSI 141 both with a "C" or better. Junior standing.

**BUSI 153. Entertainment Law. 4 Units.**

Students study all aspects of the legal relationships and rights problems in films, television, music and records. This course is also offered as MMTG 153. Prerequisite: BUSI 053 with a "C" or better. Junior standing.

**BUSI 157. Commercial Law. 4 Units.**

Students study the basic principles of commercial and trade law and business organizations that include agency partnerships and corporations. The course covers contracts and the Uniform Commercial Code, real and personal property, securities regulation, secured transactions, bankruptcy, professional liability and negotiable instruments. Prerequisite: BUSI 053 with a "C" or better. Junior standing.

**BUSI 159. Employment Law. 4 Units.**

This course examines major labor-management relations legislation and its interpretation and treatment by administrative agencies and the courts. Primary emphasis is on the National Labor Relations Act as amended, but attention is also given to law concerning public sector labor relations, employment discrimination and other related law. Prerequisite: BUSI 053 with a "C" or better. Junior standing.

**BUSI 163. International Financial Management. 4 Units.**

This course is an analysis of management problems that arise in an international financial environment. Specific consideration is given to financial risk (s), management and international financial markets. Prerequisite: BUSI 105 with a "C" or better. Junior standing.

**BUSI 165. International Marketing. 4 Units.**

Students examine the environment for marketing across borders. The course covers marketing practice, policies and strategies in the multinational setting. Students complete a global screening of countries and draw up a marketing plan and strategy for a given product. Prerequisite: BUSI 107 with a "C" or better. Junior standing.

**BUSI 169. International Management. 4 Units.**

Develops cross-cultural awareness through understanding of social, political, economical, and historical influences on managerial practice. Methods include lectures, readings, videos, role-plays, and reports (written and oral). Prerequisite: BUSI 109 with a "C" or better. Junior standing.

**BUSI 170. Human Resources Management. 4 Units.**

This course introduces the P/HR management area with its core of activities that 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. Prerequisite, may be taken concurrently: BUSI 109 with a "C" or better. Junior standing.

**BUSI 172. Entrepreneurship. 4 Units.**

This course covers the new 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 include the traditional small business or a high growth venture, or the formation of a new business entity or a new venture within an existing organization. Prerequisites: BUSI 031, BUSI 033, BUSI 107 all with a "C" or better. Junior standing.

**BUSI 174. Work Group Dynamics. 4 Units.**

The purpose of the course is to provide students with an understanding of group dynamics that enable them to develop skills to participate in and lead groups in the workplace. Because the focus is on groups, the course takes a "learning by doing" approach and involves numerous group activities designed to reinforce the material. Prerequisite: BUSI 109 with a "C" or better. Junior standing.

**BUSI 175. Leadership and Change. 4 Units.**

Students examine the processes of deliberate organizational change as adaptations to both internal and external developments. The course covers criteria for effective change programs, strategic variables that affect change (e.g., power, communication, conflict), and technologies that produce change (e.g., consulting, training, research). Prerequisite: BUSI 109 with a "C" or better. Junior standing.

**BUSI 176. Managing Small Businesses. 4 Units.**

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 include 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 that involves the applications of the concepts in a specific firm are required. Prerequisites: BUSI 031 and BUSI 109 both with a "C" or better. Junior standing.

**BUSI 177. International Trade Law. 4 Units.**

International Trade Law provides students with the opportunity to study legal aspects associated with international trade agreements. The primary emphasis of the course is on the global trading system as represented by the General Agreement on Tariffs and Trade and the World Trade Organization and regional trading systems such as the European Union and the North American Free Trade Agreement. The course also examines agreements ancillary to these trading regimes as well as relevant national laws. 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 that may assist in resolving these problems. Prerequisite: BUSI 053 with a "C" or better. Junior standing.

**BUSI 178. International Commercial Law. 4 Units.**

International Commercial Law provides students with the opportunity to study the law that governs international contracts. The course examines ethical considerations in international contracting, commercial dispute resolutions, and import and export transactions. Several different types of contracts are examined including those that relate to the sale of goods, services, transportation, insurance and intellectual property rights. The emphasis of the course is on the recognition of legal problems and the discovery and application of appropriate principles of international and domestic law that may assist in resolving these problems. Prerequisite: BUSI 053 with a "C" or better. Junior standing.

**BUSI 181. Strategic Management and Policy. 4 Units.**

This course is 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 that formulates and implements objectives, policies and programs through which a company gains sustainable competencies and competitive advantage in the marketplace. Students participate in computer simulations, case analysis, and experimental exercises in order to develop skills in executive teamwork, to solve strategic problems and to present and defend recommendations. Prerequisites: BUSI 031, BUSI 033, BUSI 053, BUSI 100, BUSI 104, BUSI 105, BUSI 107, BUSI 109.

**BUSI 183. Administrative Internship. 1-8 Units.**

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 at least 40 hours per earned credit hour. In addition, the supervising instructor assigns academic work to complement the hands-on portion of the internship. Interested students contact the ESB Career Services Office or the office of the Associate Dean located in Weber Hall.

**BUSI 186. Firm, Markets, and Environment: Theory and Application. 3 Units.**

This course provides 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 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: ECON 053, ECON 055, and permission of the MBA Program Director. Senior standing.

**BUSI 188. Data and Decisions. 3 Units.**

This course introduces the fundamental concepts and techniques that analyze risk and formulate sound decisions in uncertain environments. The course examines statistical methods which interpret and analyze data that include sampling concepts, regression analysis, and hypothesis testing. Applications include investor management, portfolio analysis, quality control and inventory management, portfolio analysis, quality control and inventory management. This course emphasizes analytical techniques that are broadly applicable to business problems. Prerequisites: MATH 037, MATH 045 and permission of the MBA Program Director. Senior standing.

**BUSI 191. Independent Study. 1-4 Units.**

This course is primarily for advanced majors in business administration. An independent study proposal is submitted to and is approved by the student's faculty adviser, the instructor and the ESB Academic Standards Committee. Independent study is self-directed study by the student.

**BUSI 200. Management Information Systems. 2 Units.**

This course is an introduction to the concepts and skills needed to utilize information system resources in business management. The course examines tools for handling common business tasks at the personal, team, and enterprise levels. Business cases emphasize the management roles in evaluating information technology. Prerequisite: Admission to the MBA program.

**BUSI 201. Financial and Managerial Accounting. 3 Units.**

This is an intensive and managerially oriented course that focuses on the most salient aspects of financial and managerial accounting. The course includes modules on analysis and decision making using financial reports, cost identification and management, and identification and analysis of financial and managerial accounting issues. Prerequisite: Admission to the MBA program.

**BUSI 205. Fundamentals of Finance. 3 Units.**

The purpose of this course is to acquaint students with the basic concepts and analytical techniques applicable to identifying and solving financial management problems. The topics covered include financial markets and institutions, valuation of assets and associated problems in the valuation of the firm, the relationships between risk and return, capital budgeting and capital structure. Prerequisite: Admission to the MBA program.

**BUSI 206. Data and Decisions. 2 Units.**

This course reviews basic business statistics in a business context. It also introduces advanced techniques for quantitative business analysis. Students learn about methods for collecting and analyzing data to address business problems using commonly available computer software. In addition, students learn about reading and interpreting statistical reports from a decision makers' perspective. Prerequisite: Admission to the MBA program.

**BUSI 207. Marketing Management. 2 Units.**

This course is designed to explore the managerial aspects of the marketing function. Quantitative and qualitative analysis of the company, its customers and its competition, commonly used in solving marketing problems, are emphasized. The course is organized around the key marketing decision variables – target market selection, product, pricing and distribution and promotion as well as the various marketing processes of strategy formulation, organization and implementation. Prerequisite: Admission to the MBA program.

**BUSI 208. Managerial Economics. 2 Units.**

This course is designed to provide graduate business students with a rigorous exposure to selected theory from intermediate microeconomics, game theory and statistics, which can be applied to make sound managerial decisions in today's global business environment. It is assumed that students have an existing background in micro- and macroeconomics, differential calculus and statistics. Topics covered in this course include (but are not limited to): demand theory, production and cost theory, estimation of production and cost functions, theory of markets (perfect competition, monopoly, oligopoly, and monopolistic competition), and decision making under risk and uncertainty. Although these topics are presented in a quantitative manner, real-world application is stressed throughout the course. Prerequisite: Admission to the MBA program.

**BUSI 209. Organizational Behavior. 2 Units.**

This course is designed to provide students with (1) a broad understanding of the factors that influence human behavior in organizations and (2) a set of tools managers can use to direct employee behavior. The course's emphasis is on how to apply knowledge of organizational behavior to current problems in the workplace. Prerequisite: Admission to the MBA program.

**BUSI 210. Business and Public Policy. 3 Units.**

This course is about the public policy process and the role business plays in it. It examines national, regional and international policy issues of relevance to business and the larger society. It also involves an examination of the ethical dimensions of business decision-making. Prerequisite: Completion of Phase I of MBA Program or the permission of instructor and the MBA Director.

**BUSI 211. Applied Business Principles. 17 Units.**

This course is an applied and intensive overview of business administration and is completed in one semester. Topics include six academic modules covering information systems, data analysis and decision making, accounting, finance, marketing, and organizational behavior. The course is team taught by numerous faculty in the Eberhardt School of Business, each with their own area of specialization. This course may be waived upon completion with a "B" average or better in all of the following courses: BUSI 200, BUSI 201, BUSI 205, BUSI 206, BUSI 207, BUSI 208, and BUSI 209. Prerequisite: Admission to the MBA program.

**BUSI 212. MBA Career Development Seminar. 1 Unit.**

This course is designed to enable business students to clearly define their career objectives and available opportunities as it relates to the Pacific MBA. Through the course, MBA students are trained in the tactics and methods to conduct a successful job search and to prepare for multiple career transitions over the course of their entire business career. Prerequisite: Acceptance into the MBA Program.

**BUSI 213. Ethics and Corporate Social Responsibility. 3 Units.**

The purpose of this course is to analyze ethical dilemmas faced by individuals in the context of business decision making and identify the foundations upon which resolution might be possible, to contrast your own value system with those of others, and to understand the value systems behind your opinions, decisions, and actions. A second purpose is to improve students' abilities as managers to anticipate, analyze, respond to, and manage issues of social responsibility and ethics that are faced in careers. Students have an opportunity to consider challenges that arise across different business functions in both domestic and global markets. Sample topics may include compliance with a variety of laws, fair and unfair competition, responsibility to customers, shareholders, employees and the environment, insider trading, product safety and more. Prerequisite: BUSI 211 or 255 with a "B" or better, or admission to the MAcc or BSBA program. Graduate students from other non-business programs may enroll with permission of the Associate Dean in the Eberhardt School of Business.

**BUSI 214. Negotiation. 2 Units.**

The purpose of this course is to understand the theory and processes of negotiation as it is practiced in a variety of settings. This course is designed to be relevant to the broad spectrum of negotiations problems that are faced by managers and individuals. Thus, the content is relevant to students interested in marketing, entrepreneurship, consulting relationships, international management or mergers and acquisitions. In addition, the course emphasizes negotiations that occur in the daily life of the manager. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 215. Taxation of Business Entities. 3 Units.**

This course examines federal income tax provisions for business entities and their owners, and includes topics on the formation, operation, and distributions from corporations, S-corporations, and partnerships. Prerequisites: BUSI 115 or equivalent and admission to the MAcc or BSMA.

**BUSI 216. Professional Accounting Research. 2 Units.**

This course has two objectives: The first objective is to develop critical thinking skills, and therefore problem solving and decision making skills, within the context of professional accounting. This objective is achieved through research and analysis of complex accounting situations and cases. The second objective is to enhance students' technical communication skills; skills that are necessary to achieve and maintain successful careers in the accounting profession. The two objectives are integrated throughout the course. Prerequisites: BUSI 113A, BUSI 113B, and BUSI 115 or equivalent courses and acceptance into the MAcc or the BSMA.

**BUSI 217. Ethics for Professional Accountants. 3 Units.**

Ethical reasoning, integrity, objectivity, independence, and core values are applied to professional issues in accounting via lectures, case analysis, and independent research. Prerequisites: BUSI 119 and PHIL 027, or equivalent courses and admission into the MAcc program or BSMA program.

**BUSI 218. Advanced Financial Accounting Graduate Level. 3 Units.**

This course provides a thorough study of accounting for business combinations and preparation of consolidated financial statements for a parent corporation and one or more subsidiaries. We also examine several other accounting topics including: state and local governments, colleges and universities, health care organizations, partnerships, segment reporting, foreign currency transactions, and the movement towards harmonization of accounting standards worldwide. Prerequisites: BUSI 113B or equivalent and admission to the MAcc or the BSBA.

**BUSI 219. Graduate Auditing Seminar. 3 Units.**

This course presents advanced problems in the application of auditing standards; internal control evaluations; applications of statistics; audits of EDP systems; and auditor's ethical, legal, and reporting obligations. This class includes the following topics: the history of auditing leading to SOX, accounting ethics, fraud, internal auditing and risk management, sampling and IT auditing. These topics represent the most critical elements for understanding the current state of auditing. Prerequisites: BUSI 119 or equivalent and admission to the MAcc or BSMA.

**BUSI 220. Corporate Finance. 3 Units.**

This advanced course in financial management introduces a set of analytical tools needed to make sound corporate decisions in such areas as capital budgeting, capital structure and dividend policy. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 221. Entrepreneurial Finance. 3 Units.**

Students analyze in-depth the financial issues that face a business start-up. Specific attention is paid to the acquisition of financing for new ventures and the financial management of new and growing businesses. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 222. Student Investment Fund. 3 Units.**

Student Investment Fund (SIF) is operated entirely by students, and it allows them to gain hands-on, real world experience in managing an investment fund with substantial market value. Students perform sector analyses as well as financial analyses of a wide array of securities, and as a group have to determine the fund's sector allocation and stock/bond/cash allocation. SIF, while maintaining a well-diversified portfolio, strives to outperform the market (S&P 500). Prerequisite: BUSI 211 or BUSI 255 with a "B" or better and permission of instructor.

**BUSI 223. Investment Management. 3 Units.**

This course teaches students a set of analytical tools necessary to evaluate the profitability of a vast array of financial assets such as stocks, bonds, options and financial futures. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 225. Investments/Portfolio Analysis. 3 Units.****BUSI 226. Financial Statement Analysis. 3 Units.**

This course familiarizes students with the types of financial statements and analysis processes used by bankers and analysts. This course also provides students with a basic understanding of the many issues bankers and analysts face in understanding a company through its financial statements. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better or permission of Associate Dean.

**BUSI 230. Enterprise Systems Analysis. 3 Units.**

An Enterprise Resource Planning (ERP) system is a tool that integrates data across a business organization. This class uses a sample system to examine the features, capabilities, and business advantages of ERP systems. The class investigates the roles of the individual modules and the importance of the integration. It also discusses the strategic implications of vendor and customer interactions through ERP systems. Various issues of implementation and customization are covered. By its nature, the study for ERP systems ties together knowledge from a variety of business disciplines. Prerequisite: BUSI 211 with a "B" or better.

**BUSI 231. Database Management. 3 Units.**

Students learn to design and develop large-scale business applications that use database management systems. The course emphasizes teamwork, team management, and joint application development tools. It uses large-scale commercial database tools such as Oracle and SQL Server. Prerequisite: BUSI 200 with a "C" or better or BUSI 211 with a "B" or better.

**BUSI 236. Business Programming. 3 Units.**

This business course introduces students to program logic and design. Visual Basic is used in the development of various business applications in the context of Windows design elements, forms, and events. Prerequisite: BUSI 200 with a "C" or better or BUSI 211 with a "B" or better.

**BUSI 238. Computer Networking and Telecommunications Management. 3 Units.**

Students study modern networks and telecommunications systems, that include wireless and mobile applications, and Web-based systems. The course develops the skills to manage business telecommunication and network infrastructures. It equips managers with the foundations of the technical, economic, and political structure of modern communication systems. The course emphasizes design and management of large-scale enterprise networks. Prerequisite: BUSI 200 with a "C" or better or BUSI 211 with a "B" or better or equivalent.

**BUSI 239. MIS Project. 3 Units.**

Students define and create a MIS e-business application, that uses a DBMS and the Internet. Projects are team-oriented and encompass MIS concepts from database, usability, and the Internet. Students use project management and workgroup software to set schedules and maintain communication. Discussions emphasize the challenges and potential solutions for dealing with large-scale projects. Prerequisites: BUSI 211 with a "B" or better and 231 with a "C" or better. Prerequisite, may be taken concurrently: BUSI 230 with a "C" or better or permission of instructor and MBA director.

**BUSI 241. Marketing Research. 3 Units.**

Students study 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. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 245. Customer Relationship Management. 3 Units.**

This course explores the process of understanding, creating and delivering value to targeted business markets and individual customers. It relies upon assessment of value in the marketplace, and it provides a means of gaining an equitable return on value delivered and enhancing a supplier firm's present and future profitability. It also provides students with the knowledge and skills necessary to perform consumer analyses that can be used to understand markets and to develop effective marketing strategies. Prerequisite: BUSI 211 with a "B" or better.

**BUSI 246. Marketing of Services. 3 Units.**

This class explores the theory and strategies that drive service consumption. Students are exposed to the unique characteristics of marketing services that include the importance of the physical environment to service encounter success, the creation of customer satisfaction, the delivery of service quality and value, and the development of strategies to overcome service failure. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 247. Consumer Behavior. 3 Units.**

This interdisciplinary course discusses the customer as the focus of the marketing system. Knowledge about the customer behavior, obtained through the application of a series of analytic frameworks and tools, is presented as the basis for marketing decisions at both the strategic and tactical levels. Central focus of the course is the analysis of customer decision-making processes and an understanding of the customer activity cycle or consumption chain. Methods to build customer satisfaction and loyalty through relationship marketing are stressed. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 249. Strategic Marketing. 3 Units.**

This course develops students' decision-making skills in the complex and fast changing international marketplace. The course provides an integrated analysis of the marketing functions of a firm, viewed primarily from the upper level of management. Emphasis is placed on formulation of goals and objectives and selection of strategies under conditions of uncertainty as they relate to the pricing, distribution and promotion of new and existing products, to achieve corporate objectives in today's global environment. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 250. Health Finance: Health Insurance. 3 Units.**

Students examine the theory and practice of health insurance in the United States. Students who complete this course understand the history and institutional framework of health insurance, understand how health insurance operates, and are able to assess the efficiency and equity of healthcare finance. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 251. International Healthcare Systems. 3 Units.**

This course is an international overview of healthcare finance and delivery that familiarizes students with healthcare finance and delivery around the world. Students develop critical analytical skills to enable them to compare and contrast health systems, identify relative strengths and weaknesses, and assess the possibilities for structural reform of the U.S. healthcare system. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 252. Healthcare Law. 3 Units.**

Students analyze and learn the application of statutes, regulations, case law and policies that affect the health care system in the U.S. Upon completion of this course students understand the roles of the legal, legislative and administrative systems in health care, are able to discuss critically important legal, ethical and policy issues in health care, and are able to recognize situations that may occur in health systems management that require consultation with legal counsel. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 254. Health Economics. 4 Units.**

This course applies the tools of microeconomics to the study of health care. It provides an analysis of how decisions are made by health care providers, consumers, and third parties responsible for payment (e.g. health insurers). The course is built around the individual's demand for health care and the supply of services by doctors and hospitals. Topics covered include health insurance, managed care and industry competitions, the pharmaceutical industry, the role of the government as a provider of care, long-term care, international health comparisons, and cost-benefit analysis/cost-effectiveness analysis. Prerequisite: BUSI 211 with a "B" or better or concurrent with BUSI 255.

**BUSI 255. Applied Business Principles. 14 Units.**

This course is an applied and intensive overview of business administration and is completed in one semester. Topics include six academic modules covering information systems, data analysis and decision making, accounting, finance, marketing, and organizational behavior. The course is team taught by numerous faculty in the Eberhardt School of Business, each with their own area of specialization. This course may be waived upon completion with a "B" average or better in all of the following courses: BUSI 200, BUSI 201, BUSI 205, BUSI 206, BUSI 207, and BUSI 209. Prerequisite: Admission to the MBA program.

**BUSI 263. International Finance. 3 Units.**

This course provides students with a conceptual framework for analyzing key financial decisions faced by multinational corporations. The major focus of this class is on spot exchange markets, forward exchange markets, the balance of payments, exchange rate determinations, hedging strategies, financing alternatives, transfers of international payments, and international bonds and equities investment and diversification. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 265. Global Marketing Strategy. 3 Units.**

This course develops students' decision-making skills in the complex and fast changing international marketplace. Emphasis is placed on the frameworks and techniques used to decide which countries offer potential markets for products, how and to what degree the components of the marketing mix must be customized to an international market, and which strategies are best suited to entering a country. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 267. International Business Law. 3 Units.**

Students are introduced to the legal environment of international business. The course provides students with the opportunity to study international sales and commercial transactions. Additionally, students have the opportunity to become familiar with international and domestic laws that directly affect global trade. Finally, students have the opportunity to become familiar with laws and events that indirectly affect international trade such as environmental standards, privatization and intellectual property protection. The emphasis of the course is on the recognition of legal problems and the discovery and application of appropriate principles of international and domestic laws that may assist to resolve these problems. Prerequisite: BUSI 211 with a "B" or better.

**BUSI 268. Global Business Competition. 3 Units.**

Today, all levels of business operations are becoming global. Business people must consider additional parameters when they enter the global sphere. The rules of the game such as laws, customs, theories, and business practices may be different. This course works on business problems and strategies within the global environment in which U.S. businesses compete. The key objective of this course is to analyze the operation of global firms, to analyze various types of entry strategies into foreign countries, impacts on host and home countries, and the powerful flexibility of global systems. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better or permission of instructor and the MBA Director.

**BUSI 269. Comparative Management. 3 Units.****BUSI 270. Human Resource Management. 3 Units.**

This course explores research, theory, and practical applications to administrative problems in human resource management. The course provides students with an understanding and appreciation of: strategic HRM, HRM law, job analysis and design, employee recruitment, selection and placement, training and development, performance evaluation, compensation and benefits, labor relations and collective bargaining, safety and health, international HRM, HRM computer simulation, HR information/management systems and other HRM technological innovations.

**BUSI 272. Entrepreneurship. 3 Units.**

This course provides an experiential introduction to the creation of a new business enterprise. Building upon mentor experiences, internship and work experiences and the use of selected guest speakers, the course focuses on writing a business plan that could be presented to a venture capitalist (or other source) for funding. Topics include the traits of successful entrepreneurs, generating business opportunities, screening family businesses, management/marketing/financial skills needed, "intrapreneurship," etc. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 274. Managing Quality/Productivity. 3 Units.**

The purpose of this course is to recognize the essence of an organization as its operations, or as its production and service delivery. Topics include the life cycle of operations and supply chain strategies for goods and services, the integration of and information flows between business functions, and the challenges of the globalization of operations and supply chain choices. Students apply analytical methods to develop, deliver, and improve production systems in a "real world" field experience. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 275. Technology and Innovation. 3 Units.**

The process of taking science and technology to the marketplace has taken on strategic importance to company leadership in many industries. This course provides students with concepts, frameworks and tools for managing technology and innovation. How can companies identify the major developments in science and technology that affect them directly and indirectly? What avenues are available to maintain technological leadership, and how can they be integrated into a company's overall objectives? What global strategies are available to develop technology and take it to the marketplace? Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 276. Entrepreneurial Management. 3 Units.**

This course is designed to integrate the functional knowledge students have acquired in their first semester as an MBA student and to teach them how to apply it within innovative and entrepreneurial business settings that call upon managers to make decisions and plans under conditions of uncertainty. The focus on the entrepreneur and entrepreneurial management reflects two considerations. The first is the growing recognition of the critical importance of entrepreneurial activities in capitalist economies. The second is that it introduces students to a set of opportunities that most of them encounter in their careers. New companies as well as innovative businesses at larger firms often look for businesspeople with the perspective and skills needed to thrive in innovative business environments and the aim is to help prepare students for such opportunities. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better. Graduate students from other programs may enroll with permission of the Associate Dean in the Eberhardt School.

**BUSI 277. Small Business Consulting. 3 Units.**

This course provides students with a structured opportunity to apply knowledge gained from the classroom to a small business environment. Students work in teams to address operational problems and identify methods of capitalizing on growth opportunities in actual companies.

**BUSI 278. International Entrepreneurship. 3 Units.**

This course provides the entrepreneur with a broad view of the factors underlying cross-national and cross-cultural business success. The emphasis is on concepts, techniques and factual knowledge useful for a career in international and global business management and entrepreneurship. This course draws on the experiences of small as well as large entrepreneurial firms, in both the manufacturing and service sectors from all over the world in new firm creation and/or adaptation in difference countries and the global economy. Prerequisite: BUSI 211 or permission of instructor and Associate Dean for Graduate Studies.

**BUSI 279. Leadership. 2 Units.**

This course utilizes the research and practice of recent years that concerns situational leadership and transformational leadership. The class emphasis will be experiential. Emphasis is placed on the consensus building, values alignment and vision building. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 280. Strategy Implementation. 2 Units.**

This course addresses the managerial challenge of strategy implementation by examining the organizational elements that must be drawn into line to support a strategy, and by examining the immense difficulties inherent in changing an organization. The aim of the course is to provide participants with a conceptual and practical understanding of the strategic and organizational challenges of multinational corporate management. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 281. Strategic Management. 3 Units.**

The vast majority of newly formulated business strategies fail in their implementation. In some cases they end up as faint, half-hearted replicas of the original plans. In other cases they simply never materialize at all. This course uses the case method in a multinational corporate setting to address the managerial challenge of strategy implementation by examining the organizational elements that must be drawn into line to support a strategy, and by examining the immense difficulties involved in changing an organization. Prerequisite: BUSI 211 or BUSI 255 with a "B" or better.

**BUSI 282. Entrepreneurial Rapid Growth. 3 Units.**

**BUSI 283. Administrative Internship. 1-3 Units.**

**BUSI 291. Graduate Independent Study. 1-4 Units.**

**BUSI 291K. Independent Study. 1-4 Units.**

**BUSI 291L. Independent Study. 1-4 Units.**

**BUSI 291M. Independent Study. 1-4 Units.**

**BUSI 291N. Independent Study. 1-4 Units.**

**BUSI 293. Special Topics. 4 Units.**

# Gladys L. Benerd School of Education

Lynn G. Beck, Dean

## Programs Offered

### Master of Education (MEd)

- in Curriculum and Instruction and a Single, Multiple and/or Educational Specialist (mild/moderate) or (moderate/severe) Level I/Preliminary Credential

### Master of Arts (MA)

- in Curriculum and Instruction
- in Curriculum and Instruction and a Single Subject Credential
- in Educational Administration and a Preliminary Administrative Services Credential
- in Educational Administration with a concentration in Student Affairs
- in Educational Psychology
- in Special Education and an Educational Specialist (mild/moderate) or (moderate/severe) Level I/II Credential

### Educational Specialist (EdS)

- in School Psychology and a Pupil Personnel Services Credential in School Psychology

### Doctor of Education (EdD)

- in Curriculum and Instruction
- in Educational Administration with a concentration in K-12 Administration/Leadership
- in Educational Administration with a concentration in Higher Education Administration

### Doctor of Philosophy (PhD)

- in Educational Psychology with a specialization in School Psychology with a Pupil Personnel Services Credential in School Psychology

## Credentials Offered

### Preliminary Multiple Subject Credential

### Preliminary Single Subject Credential in the following areas:

- Art, Biology, Chemistry, English, Geosciences, Social Sciences, Mathematics, Physical Education, Physics, Sciences, Spanish, and Music.
- Educational Specialist (mild/moderate) – Level I/Preliminary and Level II/Clear
- Educational Specialist (moderate/severe) – Level I/Preliminary and Level II/Clear
- Preliminary Administrative Services Credential
- Professional Clear Administrative Services Credential
- Personnel Services Credential in School Psychology
- Speech-Language Pathology Services Credential

(For more information contact Speech Language Pathology Department)

## Mission

The Benerd School of Education embraces a mission to prepare thoughtful, reflective, caring, and collaborative educational professionals for service to diverse populations. Further, the Benerd 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.

## Admissions Requirements

### General Admissions Requirements

1. A cumulative GPA of 3.0 or better for the last 60 units of college or post-baccalaureate work.
2. An appropriate degree from an accredited university (Bachelor's for admission to master's programs; masters for admission to doctoral programs).
3. A completed application portfolio to the Graduate School, an essay following departmental guidelines; official transcripts from all college-level coursework including official verification of the awarding of degrees; and three letters of recommendation attesting to the candidate's ability to undertake doctoral studies.
4. Some programs may require the Graduate Records Examination (GRE). Please see specific programs for information.
5. Doctoral programs require an admissions interview. Please see specific programs for information.
6. Review by the appropriate department.
7. Evidence of qualities and character in keeping with the philosophy and standards of this University and the School of Education.

## Basic Education Policies

### Master of Education Degree

The Gladys L. Benerd School of Education offers a master's degree that is designed for high potential graduate students who desire to become candidates for an initial teaching credential. This degree is the Master of Education degree (MEd). This degree prepares teachers to deal with instructional theory and applied research, and to develop competence beyond the skills of the usual beginning teacher. For specific information about MEd program requirements, please refer to the Curriculum and Instruction program information.

### Requirements for the Master of Arts Degree

Graduate students who wish to secure a Master of Arts degree with a major in the School of Education must meet the requirements specified for all Master of Arts degrees. Students should consult with the assigned departmental advisor within the first semester of enrollment to develop a plan of study. The Gladys L. Benerd School of Education has four programs that lead to a master's degree, of which plans A, B and C require a core of common courses in the major. The core courses include:

|          |                                  |   |
|----------|----------------------------------|---|
| EDUC 204 | Pluralism in American Education  | 3 |
| EDUC 209 | Curriculum Theory                | 3 |
| EPSY 201 | Techniques of Research           | 3 |
| EPSY 220 | Nature and Condition of Learning | 3 |

### Program with Thesis (Plan A)

The requirements of the thesis plan are as follows:

1. Thirty units of graduate work, with 16 units in courses numbered 201 or above.
2. Required core courses common to all master's degree programs in education.
3. A minimum of 16 units in education, including a thesis of 4 units.
4. Such additional courses as may be required for the adequate development of the thesis problem.
5. With the approval of the Dean or appropriate departmental chair, the candidate may choose coursework in not more than two other departments outside the School of Education.



- An acceptable thesis must be submitted within the deadlines as stated in the Graduate School calendar.
- Successfully pass a final oral examination.

### Program with Seminars (Plan B)

The requirements of the seminar plan are as follows:

- Completion of 32 units of graduate work, with 18 units in courses numbered 201 or above.
- Required core courses common to all master's degree programs in education.
- Completion of a minimum of 18 units in the School of Education.
- Completion of a minor of 6 or more units selected from a discipline department other than education.
- Specializing in an area of interest: (at least 10-12 units as approved by advisor), such as curriculum and instruction, special education, bilingual/cross-cultural education, English as a second language, educational and counseling psychology or foundations.
- A seminar and/or research paper in the field of specialization.
- Successfully pass a final examination.

### Program with Projects (Plan C)

The program under Plan C is designed for the Master of Arts degree and concurrently to meet certain state certification and licensing requirements and/or to prepare candidates for careers in specific professions (e.g. Student Affairs).

#### General Requirements

- A minimum of 32 units of graduate work, with 18 units in courses numbered 200 or above.
- Required courses common to all master's degree programs in the School of Education.
- Completion of the specific program requirements as described in departmental/program information.

### Master of Arts Degree: Special Program (Plan D)

Although most candidates utilize Plans A, B or C, a special program can be designed for well-qualified students who have professional or personal needs for specialized study. Such special programs provide opportunity for course offerings in the School of Education to be linked with those of other schools and departments. Requirements for special programs, in addition to departmental approval, include the following:

- A content major of at least 21 units. This represents the student's primary area of interest and need for professional development. Courses may be chosen within a given department but are likely to include relevant courses from several departments.
- Research and evaluation methodology and/or theoretical constructs of at least 6 units. The student is expected to develop relevant competencies in one or more of the following: research methods, critical analysis, inquiry techniques or theory.
- Field experience and/or research of not less than 4 nor more than 6 units. Depending on the specific area of study, this may include supervised field experience, practicum, action research or thesis. The purpose is to synthesize the total program by demonstrating competencies in the field or through some research project.
- A minimum of 32 units of graduate coursework with 16 units at the 200 level or above.
- A minimum of 18 units in Education.
- Completion of the specific program requirements as described in departmental/program information.

With the framework described above, this program operates on a highly individualized basis. A student is assigned a primary advisor in the School of Education who is responsible for working out a program. Students and their advisors submit a rationale and description of their program for

the departmental file. For an interdisciplinary program, the student also receives appropriate advising from a department outside the School of Education.

## Doctor of Education Degree Basic Policies

The EdD degree is designed to ensure that each graduate possesses a deep understanding of foundational issues; key theories related to the student's academic focus; historic and emerging research related to student's academic focus; critical issues of research, policy, and practice; moral dimensions of research, policy, and practice; leadership challenges and opportunities; and methods and limitations of research. The degree is also designed to ensure that the candidate can identify key issues and problems and engage in focused and systematic research into problems and related questions. Further, the degree is designed to ensure that graduates possess leadership competencies including verbal and written communication skills; professional maturity; personal discipline; and social and emotional intelligence competencies.

### Requirements for the Doctor of Education Degree

Graduate students who to secure a Doctor of Education (EdD) degree with a major in the School of Education must meet the requirements specified for all Doctor of Education degrees. Students should consult with the assigned departmental advisor within the first semester of enrollment to develop a plan of study. The Gladys L. Benerd School of Education has two departments that offer EdD degree: the Department of Curriculum and Instruction and the Department of Educational Administration and Leadership. Students who seek EdD degrees through both departments take the following core courses:

|          |                     |   |
|----------|---------------------|---|
| EDUC 352 | Applied Inquiry I   | 3 |
| EDUC 354 | Applied Inquiry II  | 6 |
| EDUC 356 | Applied Inquiry III | 3 |
| EDUC 358 | Applied Inquiry IV  | 3 |

Candidates who seek EdD degrees must also complete a doctoral dissertation and register for a minimum of 2 and a maximum of 7 units of EDUC 399. Students may register for EDUC 399.

### Program Stages

The successful completion of Applied Inquiry I qualifies each student for full admission to the doctoral program;

The successful completion of Applied Inquiry III with the production of a quality problem statement and literature review coupled with an interview with faculty advances the student to Doctoral Candidacy.

### Dissertation

An acceptable dissertation must be based on an original investigation. It must present either a contribution to knowledge and/or understanding, or an application of existing knowledge to the candidate's special field of study. The dissertation must be submitted by the appropriate deadlines as stated in the current Graduate Academic Calendar. As noted above, students admitted to the EdD program in the Benerd School of Education require a minimum of 2 units and maximum of 7 units of Dissertation is to be completed after the dissertation proposal is completed.

### Period of Candidacy

The maximum time allowed for completion of an EdD program is governed by the following: All requirements for the Doctor of Education degree must be completed within nine years after the first day of the semester of enrollment in EdD coursework at Pacific as a provisionally admitted doctoral student. Failure to complete within nine years requires the student to register for five additional units of EDUC 399 Dissertation. Students who do not meet these deadlines are dropped from the doctoral program.

### Final Oral Examination

A final oral examination usually of two hours, conducted by the candidate's dissertation committee, is held in accordance to the deadline

established by the Graduate School. This oral exam concerns itself with the candidate's dissertation and implications thereof. Supplemental information is available in School of Education department offices.

## Semester Hour Requirements

A minimum of 55 doctoral units is required for the EdD degree. Some (usually no more than 6) post master degree units may be approved by petition for transfer from another university count toward the 55 doctoral units.

Credit value of the dissertation: Not less than 2 nor more than 7 units.

## Grade Point Average Requirements

Grade point average of at least 3.0 in all work taken while in graduate studies is required. Preferably this should be 3.5.

## Minimum Residence

The period of residence work represents an opportunity to secure additional competency in the area of specialization as well as the development of an acceptable dissertation. Residency requirement can be met by taking 18 units of coursework within 12 calendar months.

## Courses Outside the Field of Education

Related graduate courses outside the field of education may count towards the EdD upon prior approval of the advisor and the Dean of the School of Education.

## Requirements for the Doctor of Philosophy Degree

The Doctor of Philosophy degree in Educational Psychology with a specialization in School Psychology prepares professionals for systems interventions as school psychologists, and provides advanced training in applied development with diverse populations and consultation methods. For specific information about the PhD program in Educational Psychology with a specialization in School Psychology, please refer to Educational and School Psychology program information.

## Gladys L. Benerd School of Education Faculty

Lynn G. Beck, Dean and Professor of Education, 2005, BA, Belhaven College, 1974; MA, University of Mississippi, 1976; PhD, Vanderbilt University, 1991.

Tenisha Tevis, Director of the Educational Resource Center, Assistant Professor, 2009, BA, California State University, Sacramento, 1997; MA, 2002; PhD, The Pennsylvania State University, 2007.

Harriett Arnold, Associate Professor, 1994, BA, San Francisco State College, 1968; MA, San Jose State University, 1974; EdD, University of San Francisco, 1984.

Ruth V. Brittin, Professor of Music Education, 1998, PhD, Florida State University, 1989.

Kellie Cain, Co-Coordinator of Teacher Credential Program, Assistant Professor, 2002, BA, University of California, Davis, 1987; MA, University of the Pacific, 1999; EdD, 2005.

Marilyn E. Draheim, Associate Professor, 1986, BA, Luther College, 1972; MA, University of Iowa, 1974; EdS, 1974; PhD, University of California, Berkeley, 1986.

Michael Elium, Associate Professor of Education, 2004, BA, Appalachian State University, 1975; MA, 1975; EdD, University of Alabama, Tuscaloosa, 1983.

Scott Evans, Instructor, Educational Resource Center, 1990, BA, California State University, Sonoma, 1976; MA, University of California, Davis, 1980.

Rachelle Hackett, Associate Professor, 1994, BA, California State University, Fresno, 1982; MS, Stanford University, 1986; PhD, 1994.

Ronald Hallett, Assistant Professor, 2009, BA, University of Nebraska, Lincoln, 1999; MA, The George Washington University, 2003; PhD, University of Southern California, 2009.

Mary Little, Instructor, 2009, BA, California State University, Stanislaus, 1986; MA, 1988.

Justin Low, Assistant Professor, 2010, BA, Brigham Young University, Provo, UT, 2003; MA, The University of Texas at Austin, 2008; PhD, 2010.

Delores E. McNair, Assistant Professor, 2006, BA, Holy Names College, 1979; MPA, University of Southern California, 1988; EdD, Oregon State University, 2002.

Elaine Mo, Assistant Professor, 2011, BA, University of California, Los Angeles, 1994; EdM, Harvard Graduate School of Education, 2003; EdD, 2010.

Thomas G. Nelson, Associate Professor, 1995, BA, California State University, Northridge, 1975; MA, California State University, Sacramento, 1988; PhD, University of Arizona, 1993.

Robert Oprandy, Professor, 2002, BA Rutgers University, 1969; MA, 1977; MEd 1979; EdD, Teachers College, Columbia University 1988.

Andrew Pitcher, Instructor, Educational Resource Center, 2003, BS University of the Pacific, 2000; MA, University of California, Davis, 2002.

Gregory R. Potter, Co-Coordinator of Teacher Credential Program, Assistant Professor, 2002, BA, University of California, Davis, 1992; MS, 1996; PhD, 2000.

Joanna Royce-Davis, Associate Professor, 2008, BS, Indiana University, 1990; MA San Jose State University, 1994; PhD, Syracuse University, 2001.

Amy N. Scott, Assistant Professor, 2007, BA, University of California, Berkeley, CA, 2000; MA, Arizona State University, Tempe, AZ, 2002; PhD, 2006.

Antonio Serna, Assistant Professor, 2006, BA, California State University, Fresno, 1974; MA, Stanford University, 1978; EdD, University of the Pacific, 1990.

Linda Skrla, Professor, 2012, BBA, Sam Houston State University, Huntsville, 1979; MEd, 1991; PhD, The University of Texas at Austin, 1997.

Heidi J. Stevenson, Associate Professor of Education, 2004, BA, University of California, Davis, 1995; MA, Chapman University, 2001; Ed.D., University of California, Santa Barbara, 2004.

Teresa Vail, Assistant Professor, 2013, BA, California State University at Sacramento, 1994; M.S., University of the Pacific, 2007; Ed.D., 2011.

Linda Webster, Associate Professor, 1996, BA, California State University, Fresno, 1981; MA, University of California, Berkeley, 1984; PhD, 1988.

### Education Courses

#### **EDUC 100. Introduction to Language. 4 Units.**

This course is an introduction to the central role of language in cultures and societies. Emphasis is on social and regional language variation, language and prejudice, gender and social class differences in conversation styles, the history and evolution of languages, and societal attitudes toward language and socio-political-economic influences on language use. Students gain more precision in their academic language development as they explore English grammatical structures and develop an appreciation of the work sociolinguists do through conversational analysis. As part of the University of the Pacific's general education program (1-A), this is a library intensive course. This means that students do library research, using online and other sources to meet some of the course requirements.

**EDUC 129. Seminar: Cultural Basis of Conflict in Education. 3 Units.** Analysis of cultural diversity in American classrooms. Not open to doctoral students.

**EDUC 130. Technology Enhanced Learning Environments. 2 Units.**

This course focuses 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, which includes evidence that they have met the state's technology standards. Upon graduation, the portfolios are archived in the BSE, and candidates can create a DVD of their entire portfolio or of parts they wish to use. This course is a prerequisite to Admission to Teacher Education.

**EDUC 131. First and Second Language Acquisition/Linguistic Foundations. 4 Units.**

This course is an introduction to first and second language development, using a compare and contrast framework. It covers theoretical perspectives in first and second language acquisition and explores the relationship between theories and practice in language learning and teaching. This course addresses pedagogical implications of various theories of second language acquisition and discusses socio-cultural factors that influence second language learning. In addition, there is particular attention given to language structure (phonology, morphology, semantics, and syntax) as it relates to the language development of native speakers of English as well as English language learners. This course includes a fieldwork component for which students work with young elementary students off campus once a week during the semester. Prerequisite: EDUC 100.

**EDUC 140. Transformational Teaching and Learning. 4 Units.**

This is an introductory course that explores the complex relationships within and among local, state, and national levels of public instruction. 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 also includes an introduction to "reflective practice"; an overview of stages in human development; prominent learning and motivation theories; the characteristics of learners with exceptional needs; and individual differences among learners, which include English language learners. This course is taken by students interested in Multiple Subject, Single Subject and/or Educational Specialist credentials. It is a prerequisite to Admission to Teacher Education, but it is open to all students at the University. Fieldwork requires fingerprint review and clearance at local districts and TB clearance. There are fees for these services.

**EDUC 141. Transformational Teaching and Learning Practicum. 2 Units.**

This supervised practicum is taken concurrently with EDUC 140: Transformational Teaching and Learning. Students examine the community, school, and classroom contexts and how they influence the teaching and learning process. Translation of current learning theories into practice are analyzed and applied. Students interact with K – 12 students and teachers in public school settings.

**EDUC 142. Visual Arts in Education. 3 Units.**

This course assists students in developing an understanding of the visual arts and how they interface with children's development through age 18. The course acquaints students with Visual Arts curriculum in the K-12 classroom. A philosophical emphasis is placed upon the interface of visual arts with children's development. The course explores such concepts and processes as aesthetic perception, creative expression, visual arts heritage and aesthetic valuing, and media and materials, suitable for children through age 18. Prerequisite: Sophomore standing.

**EDUC 150. Teaching and Assessment. 4 Units.**

This course supports reflective teaching and learner-centered principles and practices in the K-12 schools. The course focuses on state-adopted curriculum standards and frameworks in seven content fields, particularly on the content area of History/Social Science; approaches to classroom management; selection of curriculum materials at the state level; and evaluation. Topics include implementing appropriate teaching strategies for meeting the needs of students with special needs and culturally diverse learners; and using developmentally appropriate diagnostic, formative, and summative assessments to plan instruction. Technology is used to enhance curriculum design and student interaction with content knowledge. This course is taken concurrently with EDUC 153, Teaching STEM, for Multiple Subject candidates. EDUC 150 is taken by Education Specialist candidates. (EDUC 153 is not taken by Special Education candidates, unless they are planning to earn a Multiple Subject Credential.) Prerequisite: EDUC 140. Fingerprint and TB test clearance is required.

**EDUC 151. Teaching Science (Multiple Subject). 2 Units.**

Students study 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, which include mainstreamed and culturally, linguistically, economically, and ethnically diverse learners. The course also examines the principles and practices that evaluate students' learning. Ten hours of fieldwork is required. This course is taken prior to directed teaching. Prerequisites: admission to Teacher Education as well as fingerprint and TB test clearance.

**EDUC 152. Teaching Mathematics (Multiple Subject). 2 Units.**

Students study 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. The course also covers instructional planning and diverse and appropriate teaching strategies for meeting the needs of diverse learners which include mainstreamed and culturally, linguistically, economically, and ethnically diverse learners. The principles and practices that evaluate students' learning are also addressed. Ten hours of fieldwork is required. Prerequisite: admission to Teacher Education.

**EDUC 153. Teaching Science, Technology, Engineering, and Mathematics. 4 Units.**

Methods and curriculum presented for teaching science, technology, engineering and mathematics in self-contained classrooms. Topics include state-adopted content standards and curriculum framework; essential mathematics, technology, engineering, 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 diverse learners; needs of diverse learners, including mainstreamed and culturally diverse learners; principles and practices of evaluation of students' learning. Fieldwork is required. Prerequisite: EDUC 140.

**EDUC 155. Teaching in the Content Areas I. 3 Units.**

This is the first of a three-part course for Single Subject credential candidates to develop professional, reflective practices and abilities for teaching in single subject classrooms, especially in secondary schools. Candidates learn and apply current learning theories to planning, instruction, and assessment, focusing on the general knowledge, skills, and dispositions associated with managing contemporary, culturally diverse secondary classroom environments. Candidates begin to learn 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 are emphasized for fostering effective teaching and learning.

**EDUC 156. Content and Disciplinary Literacy Development in Secondary Schools. 3 Units.**

This course provides an introduction to research-based content literacy instruction. The course focuses on preparing candidates to teach content-based reading and writing skills to a full range of students which includes struggling readers, students with special needs, and English Learners. A variety of content-based literacy strategies (reading, writing, listening, and speaking) is presented to facilitate learning in the content areas. The course meets credential requirements. Prerequisites: EDUC 140, admission to Credential Candidacy, Instructor/Curriculum and Instruction department permission, fingerprint and TB test clearance.

**EDUC 157. TESOL Theory and Practice. 4 Units.**

This course provides a link between theory and practice in the teaching of ESL. Aspects of language learning is discussed, and concomitant instruction and curriculum is analyzed while developing a working model for the development of curriculum that is appropriate for the teaching situation.

**EDUC 160. Productive Learning Environments for Diverse Classrooms. 2 Units.**

Core course concepts and activities include using culturally responsive techniques that contribute to productive learning environments and equitable student outcomes. Preservice teachers in this course survey current discipline and management models and practice research-based strategies designed to promote positive classroom behavior. Establishing and maintaining relationships with families, students, and colleagues are explored as well as practices that contribute to teacher well-being and self-care. Senior standing or permission of instructor.

**EDUC 161. Literacy Development (Multiple Subject). 4 Units.**

This course introduces methods and curriculum for teaching reading and language arts with integration of humanities and social science for students from kindergarten to eighth grade classrooms. The course focuses on theory-based effective instruction of reading, writing, listening and speaking across the curriculum. Students learn to analyze and evaluate effective literacy skills and strategies in teaching reading, writing, listening and speaking to K-8 students, and to apply and practice these skills and strategies in various instructional settings in various content areas. Emphasis is placed on the integration of reading and language arts throughout the curriculum. Twenty-four hours of fieldwork is required. This course is taken prior to Directed Teaching (Professional Practice). Prerequisite: admission to Teacher Education program with fingerprint and TB test clearance.

**EDUC 162. Literacy Assessment (Multiple Subject). 2 Units.**

This course investigates the uses of ongoing instructional diagnostic strategies in reading and language arts that guide teaching and assessment. Topics include early intervention techniques appropriate for a classroom setting and guided practice of these techniques. Fieldwork is required and shared with EDUC 161. This course is taken prior to Directed Teaching and may be taken with EDUC 161 concurrently. Prerequisite: admission to Teacher Education with fingerprint and TB test clearance.

**EDUC 163. Teaching English Learners. 4 Units.**

This course is designed to equip mainstream classroom teachers with the theory, principles, knowledge, and skills to effectively understand and teach English Language Learners at a variety of levels of English proficiency in K-8 classrooms. Teachers will develop appropriate strategies and approaches for developing language proficiency and link their practice to both the California English Language Development Standards and the new Common Core State Standards. Students observe and implement these strategies during their field experiences in order to see, practice, and reflect on effective ways to meet the needs of English learners. Objectives include appropriate assessment, planning, and implementation of sheltered content instruction. Fieldwork hours (160 series fieldwork) specific to this class are required. A grade of C or higher is required for passing this course. Prerequisites: EDUC 100, 140, and 150, or instructor/C & I department permission; minimum GPA of 2.5; Fingerprint and TB test clearance.

**EDUC 164. Introduction to Bilingual Education. 4 Units.**

This course provides an overview of bilingual education and is designed to meet the needs of both undergraduate and graduate students who are interested in understanding the role of bilingual, bicultural education in schools. Students explore the related implications of second language acquisition research, sociopolitical theory, and historical as well as contemporary experiences in the contexts of program design, instructional practice, and school/community relations toward a conceptualization of bilingual education as a source of pedagogical enrichment strategies for all learners in all settings. Prerequisites: EDUC 100 and EDUC 131.

**EDUC 165. Teaching in the Content Areas II. 2 Units.**

This is the second of a multi-course series for Single Subject credential candidates to develop professional, reflective practices and abilities for teaching in single subject classrooms, especially in secondary schools. The emphasis in this course is on content-specific practices. Candidates join their respective professional organizations and participate in those organizations' professional development experiences. In addition to whole class meetings, candidates meet in content-specific seminars with practitioners in their content areas on a regular basis.

**EDUC 167. Adolescent Development. 3 Units.**

This course is designed for secondary preservice teachers to consider the principles of adolescent development in context. Biological, cognitive, psychological, social, and moral development are examined to determine how these developmental pathways affect student achievement, motivation, and well being. The influence of family, peers, school, and the broader community on development are explored as well. Implications of current understandings of adolescent development on teaching, learning, and assessment are emphasized. In addition to class meetings, students participate in a practicum in order to apply learning in school settings.

**EDUC 168. Microcomputers in Education. 3 Units.**

This course introduces the student to the major concepts and applications related to the use of microcomputers in education. Students learn basic operations, terminology and capabilities of microcomputers within an educational context. Key issues related to the use of instructional technology are discussed. Application and evaluation of software for classroom instruction and management is investigated.

**EDUC 169. Microcomputers and Curriculum Design. 3 Units.**

Issues related to the educational application of instructional technology and its impact on education is investigated. Students do in-depth analyses of software applications and their validity in relation to learning models and the current curriculum. Students evaluate how new technologies may effect change in curriculum. Various projects that relate to evaluation of software, teaching strategies and research in new technologies are required. Prerequisite: EDUC 168 or permission of instructor.

**EDUC 170. Professional Practice. 2-10 Units.**

Professional practice is a full-day of Student Teaching in public schools. Candidates for a Single Subject and Multiple Subject Preliminary teaching credential are placed in local public schools for intensive application of their knowledge, skills, and dispositions for professional practice in California schools. Student Teaching is full-day teaching for a semester, and undergraduates are approved for Student Teaching. Prerequisites: EDUC 130, EDUC 140, EDUC 141, EDUC 150, EDUC 151, EDUC 152, EDUC 161, EDUC 162, EDUC 163, EDUC172 (concurrently); SPED 125X (concurrently) with grades of "C" or higher; a minimum GPA of 2.5.; admission to Teacher Education/Credential Candidacy; a passing score on the CBEST with subject matter completed (CSET examination or approved subject matter/waiver program) and approved; approval of a Certificate of Clearance with TB test clearance and program assessments completed prior to Directed Teaching; Directed Teaching approval process must be completed with clearance by the Director of Field Experiences; The United States Constitution requirement must be completed to apply for a teaching credential. No other coursework is permitted other than SPED 125X and weekend and vacation workshops. A candidate must petition for permission to take an additional course in advance with the Curriculum and Instruction Department's Director of Field Experiences.

**EDUC 171. Professional Practice Music. 2-10 Units.**

This course is a full-day of Student Teaching in public schools. Candidates for a Single Subject Music Preliminary teaching credential are placed in local public schools for intensive application of their 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 are EDUC 130, EDUC 140, EDUC 141, EDUC 150, EDUC 151, EDUC 152, EDUC 161, EDUC 162, EDUC 163, EDUC 171 (concurrently); SPED 125X (concurrently) with grades of "C" or higher; a minimum GPA of 2.5; admission to Teacher Education/Credential Candidacy; a passing score on the CBEST with subject matter completed (CSET examination or approved subject matter/waiver program) and approved; approval of a Certificate of Clearance with TB test clearance program assessments completed prior to Directed Teaching; completed Directed Teaching approval process with clearance by the Director of Field Experiences; The United States Constitution requirement must be completed to apply for a teaching credential. No other coursework is permitted other than EDUC 172 and SPED 125X and weekend and vacation workshops. A candidate must petition for permission to take an additional course in advance with the Curriculum and Instruction Department's Director of Field Experiences.

**EDUC 172. Professional Practice Seminar. 2-10 Units.**

Students reflect upon and integrate 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. This course may be taken concurrently with EDUC 170/EDUC 270.

**EDUC 175. Teaching in the Content Areas III. 2 Units.**

This course is the culminating part of a three-part course for Single Subject credential candidates that develops professional, reflective practices and abilities for teaching in single subject classrooms schools. It is taken concurrently with the professional practice practicum (student teaching). Emphasis in the first two parts of the course is placed on acquiring and practicing general and content-specific knowledge, skills, and ethical values associated with managing contemporary, culturally diverse secondary classroom environments. The course is co-taught by University faculty and K-12 Content Area Specialists. In the third and final portion of the course, candidates integrate and synthesize prior learning and independently teach grades 7 – 12 students in their professional practice placements. University and Grades 7 – 12 Content Area Specialists supervise and support candidates and continue to lead seminar sessions. The capstone assessment that leads to the Level I teaching credential, the Performance Assessment for California Teachers (PACT) Teaching Event (TE) is completed as part of this course.

**EDUC 180. Workshop Learning: Issues Group Leadership. 1 Unit.**

This course is designed to support the learning and leadership model, Peer-Led Team Learning (PLTL). The course topics include practical information (understanding motivation, managing time, dealing with dominating students, learning styles, group dynamics, study skills, helping students improve critical thinking, develop logical reasoning, and prepare for tests), a foundation in learning theory, and guidance about the specific components of the workshop lessons.

**EDUC 181. ECE: Social Justice/Diversity. 3 Units.**

This course is conducted as an undergraduate level seminar that is designed to examine key normative issues in the area of social justice, diversity and multiculturalism with an emphasis in early childhood education. The relation of social diversity (race, ethnicity, gender, language, societal attitudes and class) to equality in education and education reform movements is viewed from multiple contexts. Topics explored are diversity, sociopolitical aspects of history and the impact on education, and specifically, early childhood education and multiculturalism. A practicum is required in this course.

**EDUC 182. ECE: Curriculum and Inquiry. 3 Units.**

This course is an upper division course that examines the theoretical understandings of curriculum and inquiry in the early childhood development classroom. Students refine their knowledge, skills, and dispositions related to early childhood methodology and application to young children in diverse populations.

**EDUC 183. ECE: Social Contexts/Cognitive Development. 3 Units.**

This course is conducted as an undergraduate level seminar that is designed to clarify the cognitive, philosophical, historical, psychological, cultural, social and ethical foundations of early childhood education. The nature of theory and practice are important to teachers of young children and this course provides a broad synthesis of knowledge of child development principles to better understand how children think, act, and how to be effective with them in the classroom.

**EDUC 189. Practicum. 2-4 Units.****EDUC 191. Independent Study. 1-4 Units.****EDUC 192. Preliminary Fieldwork. 1-3 Units.**

Consent of department chair.

**EDUC 192A. Elementary Education Fieldwork. 1-3 Units.**

Consent of department chair.

**EDUC 192B. Secondary Education Fieldwork. 1-3 Units.**

Consent of department chair.

**EDUC 192D. Early Childhood Education Fieldwork. 1-3 Units.**

Permission of department chair.

**EDUC 192E. Reading Fieldwork. 1-3 Units.**

Permission of department chair.

**EDUC 192F. Bilingual Education Fieldwork. 1-3 Units.**

Permission of department chair.

**EDUC 192G. Cross-cultural Education Fieldwork. 1-3 Units.**

Permission of department chair.

**EDUC 195A. Pedagogical Seminar. 3 Units.**

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 8 units in a concentration for the diversified major or multiple subjects waiver program. Senior status or second semester junior status required. Permission of department chair.

**EDUC 197. Research in Education. 1-4 Units.****EDUC 197D. Research in Education. 1-4 Units.****EDUC 204. Pluralism in American Education. 3 Units.**

This course is 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.

**EDUC 206. Comparative Education. 3 Units.**

Educational principles, practices and organizational structure and school administration in the United States and other societies are examined.

**EDUC 207. Sociology of Education. 3 Units.**

Students study the sociology of education and the classroom.

**EDUC 209. Curriculum Theory. 3 Units.**

Students examine curriculum from various philosophical and learning theory points of view. Models and rationales of curriculum are explored. Historical perspectives and specialized areas of the curriculum are examined in terms of present and future societal needs, and methods of curriculum dissemination are delineated.

**EDUC 210. Seminar in American Educational Thought. 3 Units.**

This seminar examines a philosophical treatment of American education.

**EDUC 212. Instructional Strategies and Classroom Process. 3 Units.**  
Students learn a variety of instructional strategies to achieve course objectives. Course content includes a review of research on effective teaching skills related to motivation, expectations, modeling, questioning, grouping, direct instruction, cooperative learning and classroom management. Students examine contemporary lines of inquiry with regard to classroom processes.

**EDUC 214. Supervision of Instruction. 3 Units.**  
This course offers a 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. A practicum component is included.

**EDUC 220. Seminar: Social Class Effects in Education. 3 Units.**  
This seminar explores the nature of social class and its effects on learning in the classroom.

**EDUC 221. Research in Second Language Acquisition. 3 Units.**  
This course focuses on the linguistic, psychological, social and cultural processes in learning and teaching a second language. It is designed to examine the major theoretical perspectives and research studies in second language acquisition. It involves critical analysis and critique of important literature and research studies in second language acquisition. It covers techniques for conducting classroom-based research in second language learning and teaching. Students in this course learn to develop a research proposal to investigate an area of interest in the field of second language acquisition.

**EDUC 225. Psychology of Reading. 3 Units.**  
Students explore current theory and research findings related to the psychological processes involved in literacy acquisition and development. Emphasis is placed upon a cognitive and psycholinguistic approach to understanding the processes of reading and the implications for instruction.

**EDUC 229. Seminar: Cultural Basis Conflicts in Education. 3 Units.**  
This seminar analyzes cultural diversity in American classrooms. It is not open to doctoral students.

**EDUC 231. Seminar: Educational Anthropology. 3 Units.**  
This seminar analyzes culture, language and values in education.

**EDUC 232. Gender Issues: Cross-cultural Perspectives. 3 Units.**  
Students examine social, economic and political forces which foster and perpetuate gender stratification and related issues. Trends/movements that regard gender roles/status are investigated from the perspective of economic and political systems in the context of Eastern and Western societies.

**EDUC 233. Seminar: Multicultural Education. 3 Units.**  
This seminar analyzes the theoretical and philosophical foundations of cultural pluralism. It helps students acquire an understanding of strategies for implementation of cross-cultural education, and develop units of instruction for use in cross-cultural education.

**EDUC 234. Seminar: Asian Cultures. 3 Units.**  
This course provides knowledge of East and Southeast Asian value systems. Students study Eastern philosophies and Eastern ways and life to gain a deeper understanding of cross-culturalism and its implications for American education and society.

**EDUC 240. Introduction to Student Affairs. 3 Units.**  
This course is a comprehensive introduction and overview of student affairs and functions within institutions of higher education. Emphasis is on studying 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.

**EDUC 241. Student Development Theory. 3 Units.**  
This course is 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.

**EDUC 242. College Student Environment. 3 Units.**  
Students examine the characteristics and attitudes of traditional and non-traditional American college students and the effect of the college environment on students. Students 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.

**EDUC 243. Legal Issues in Higher Education Student Affairs. 3 Units.**  
This course 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 are reviewed and discussed.

**EDUC 244. Assessment in Student Affairs. 3 Units.**  
Study of the elements of program assessment with an emphasis on models for practice in co-curricular programs. Emphasis is on practical and collaborative applications in university settings as well as analysis and critical reflection on assessment trends and movements.

**EDUC 245. Counseling Theories in College Student Affairs. 3 Units.**  
This course offers a critical and comprehensive study of current counseling theories and their application for student affairs practitioners.

**EDUC 246. Teaching as Reflective Inquire I. 2 Units.**  
Teaching as Reflective Inquiry I is the first of a three-part course in which preservice teachers are introduced to the concept of teacher research. First, participants critically analyze readings and teacher-inquiry products of experienced teacher researchers. They then conduct a mini-inquiry into their own practices that emerge as a result of their participation in the summer experience. These activities set the stage for more advanced consideration and application of teacher inquiry methods in parts II and III of the course, that lead to a culminating project during the professional practice practicum.

**EDUC 248. Counseling Special Populations. 3 Units.**  
The course focuses on the study of counseling processes and techniques with student client populations that are ethnically and racially diverse. Students build on the skills that students learned in the basic counseling theories course taught in prior semesters. Students explore theory and research beyond the contention that students of color may have different needs and experiences in counseling situations. Students also look at personal ethnic identity and how it affects the assumptions brought to counseling and they learn what it means to be "culturally competent" in regard to counseling skills.

**EDUC 252. Teaching the Creative, Talented and Gifted Child. 3 Units.**  
Students review the major writings and research that deal with the creative learner and his classroom needs. The course presents 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 to reach his or her full potential.

**EDUC 255. Teaching in the Content Areas I. 3 Units.**

This is the first of a multi-course series for Single Subject credential candidates to develop professional, reflective practices and abilities for teaching in single subject classrooms, especially in secondary schools. Candidates learn and apply current learning theories to planning, instruction, and assessment, focusing on the general knowledge, skills, and dispositions associated with managing contemporary, culturally diverse secondary classroom environments. Candidates will begin to learn 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.

**EDUC 256. Content and Disciplinary Literacy Development in Secondary Schools. 3 Units.**

This course provides an introduction to research-based content literacy instruction. The course focuses on preparing candidates to teach content-based reading and writing skills to a full range of students which includes struggling readers, students with special needs, and English Learners. A variety of content-based literacy strategies (reading, writing, listening, and speaking) is presented to facilitate learning in the content areas. The course meets credential requirements. Prerequisites: EDUC 140, admission to Credential Candidacy, Instructor/Curriculum and Instruction department permission, fingerprint and TB test clearance.

**EDUC 257. TESOL Theories and Practices. 4 Units.**

This course is designed to provide a link between theory and practice in the teaching of ESL. Aspects of language learning are discussed, and concomitant instruction and curriculum is analyzed while developing a working model for the development of curriculum which is appropriate for the teaching situation.

**EDUC 260. Productive Learning Environments for Diverse Classrooms. 3 Units.**

Core course concepts and activities taught include using culturally responsive techniques that contribute to productive learning environments and equitable student outcomes. K-12 preservice teachers in this course survey current discipline and management models and practice research-based strategies designed to promote positive classroom behavior. Establishing and maintaining relationships with families, students, and colleagues are explored as well as practices that contribute to teacher wellbeing and self-care. Senior standing or permission of instructor.

**EDUC 262. Advanced Methods in Bilingual Education. 3 Units.**

This course provides a critical interpretation of current practice in bilingual education, based on theory and research.

**EDUC 264. Introduction to Bilingual Education. 4 Units.**

This course provides an overview of bilingual education and is designed to meet the needs of both undergraduate and graduate students who are interested in understanding the role of bilingual, bicultural education in schools. Students explore the related implications of second language acquisition research, sociopolitical theory, and historical as well as contemporary experiences in the contexts of program design, instructional practice, and school/community relations toward a conceptualization of bilingual education as a source of pedagogical enrichment strategies for all learners in all settings.

**EDUC 265. Teaching in the Content Areas II. 2 Units.**

This is the second of a multi-course series for Single Subject credential candidates to develop professional, reflective practices and abilities for teaching in single subject classrooms, especially in secondary schools. The emphasis in this course is on content-specific practices. Candidates join their respective professional organizations and participate in those organizations' professional development experiences. In addition to whole class meetings, candidates meet in content-specific seminars with practitioners in their content areas on a regular basis.

**EDUC 266. Teaching as Reflective Inquiry II. 2 Units.**

Teaching as Reflective Inquiry II is the second of a three-part course in which preservice teachers continue to learn and apply the principles of teacher research. Participants examine their teaching practices and generate inquiry questions that examine their impact on student achievement in their year-long professional practice placements (student teaching). This semester's emphases include the development of research questions, research methods, design and data collection that lead to a year-long study.

**EDUC 267. Understanding Adolescents in School Contexts. 3 Units.**

This course is designed for secondary preservice teachers to consider the principles of adolescent development in context. Biological, cognitive, psychological, social, and moral development are examined to determine how these developmental pathways affect student achievement, motivation, and well being. The influence of family, peers, school, and the broader community on development are explored as well. Implications of current understandings of adolescent development on teaching, learning, and assessment is emphasized. In addition to class meetings, students participate in a practicum in order to apply learning in school settings.

**EDUC 268. Microcomputers in Education. 3 Units.**

This course introduces the student to the major concepts and applications related to the use of microcomputers in education. Students learn basic operations, terminology and capabilities of microcomputers within an educational context. Key issues related to the use of instructional technology are discussed. Application and evaluation of software for classroom instruction and management is investigated.

**EDUC 269. Microcomputers and Curriculum Design. 3 Units.**

Issues related to the educational application of instructional technology and its impact on education are investigated. Students do in-depth analyses of software applications and their validity in relation to learning models and current curriculum. Students work with multi-media software and develop media projects. Various projects related to evaluation and use of software, teaching strategies and research in new technologies are required. Prerequisites: EDUC 261 or EDUC 130.

**EDUC 270. Professional Practice. 2-10 Units.**

EDUC 270 offers student teaching for the SB 2042 Multiple Subject credential in public schools, for full-day placement. The placement requires additional assignments and action research for the MEd Degree. Prerequisites are completion of prerequisite coursework with grade "C" or higher, minimum GPA of 3.0, admission to Teacher Education/Credential Candidacy, CBEST passed, subject matter completed and approved, approval of a Certificate of Clearance, TB test clearance, program assessments completed, completion of Directed Teaching approval process and clearance by the Director of Field Experiences. The United States Constitution requirement must be completed to apply for a teaching credential. No other coursework permitted other than EDUC 172 and SPED 125X and weekend and vacation workshops, except that a candidate must petition in advance to the Curriculum and Instruction Department's Director of Field Experiences for enrollment in an additional concurrent course. The course is open only to MEd Degree candidates. Corequisites are EDUC 172 and SPED 125X.

**EDUC 271. Professional Practice Music. 2-10 Units.**

EDUC 271 offers Student Teaching or Internship for the Music Single Subject credential. The Music Education Department Chair approves one or more semesters of Directed Teaching and assigns number of units for each semester. The total over one or more semesters must be ten (10) units. This course is open to Master of Education candidates. Prerequisites: 1) Student Teaching; 2) Internship 1) Completion of all prerequisite coursework with grade of "C" or higher; minimum GPA of 2.5; Admission to Teacher Education/Credential Candidacy; CBEST passed; subject matter completed and approved; approval of a Certificate of Clearance; TB test clearance; program assessments completed; completion of Directed Teaching approval process and clearance by the Director of Field Experiences and Music Education Department Chair. The United States Constitution requirement must be completed to apply for a teaching credential. 2) Completion of all prerequisite coursework from 1) with grade of "C" or higher; minimum GPA of 3.0 in Teacher Education courses is required, and the United States Constitution requirement must be completed prior to enrolling in an internship. A contract from the district and a Memorandum of Understanding between the district and the University of the Pacific are required. Corequisites: CURR 195x and SPED 125X. These corequisites must be taken once, if Directed Teaching is split over two or more semesters.

**EDUC 275. Teaching in Content Areas III. 3 Units.**

This is the culminating part of a multi-course series for Single Subject credential candidates following full-time professional practice (student teaching). The goal of this course is to enhance and extend the general and content-specific knowledge, skills, and dispositions acquired in the previous courses in this series and during professional practice. The use of general and content-specific educational technology is emphasized, allowing candidates to explore a variety of ways to integrate technology into instruction. During the course, candidates examine the National Educational Technology Standards (NETS). Further, issues shaping today's technology uses in education are surveyed and discussed.

**EDUC 276. Teaching as Reflective Inquiry III. 3 Units.**

Teaching as Reflective Inquiry III is the culminating section of a three-part course in which preservice teachers continue to apply principles of teacher research. This is also the capstone course for the M.Ed. Participants continue to conduct action research, initiated in the prior semester, on their impact on student achievement. At the semester's conclusion, participants submit research reports and make presentations of their findings to panels made up of University and K-12 faculty.

**EDUC 277. Diversity and Constituency in Educational Administration. 3 Units.**

Students explore the values and concerns of the many diverse communities that constitute a school community and they learn effective ways to involve various communities in the participation of school life are presented.

**EDUC 278. Educational Organization and Diverse Constituencies. 3 Units.**

Organizational patterns and issues that are related to the administration of educational organizations are presented. Particular emphasis is placed on effectively involving diverse stakeholders into the organizational culture of educational institutions.

**EDUC 280. Education Law and Legal Processes. 3 Units.**

Students examine laws, legal principles, interpretations and practices governing federal, state, county and local school organization and administrations. Course content includes laws relating to youth, contracts, liability and tort, effect of federal and state laws on education.

**EDUC 281. Modern Trends in Early Childhood Education. 3 Units.**

Students learn current trends in the education of children from birth through third grade.

**EDUC 282. Advanced Curriculum and Theory in Early Childhood Education. 3 Units.**

Involvement with curriculum design, analysis and evaluation.

**EDUC 283. School Finance and Business Administration. 3 Units.**

Public schools as economic institutions and the roles of the federal, state and local governmental agencies related to school finance are addresses. Students examine public school revenues and expenditures, budget development and administration, and the operational finance of funds and services.

**EDUC 284. Directed Teaching Special Assignment. 2-10 Units.**

All day Student Teaching in subject-matter classroom(s) and action research, usually in a secondary school. Open only to Master of Education candidates. Prerequisites: completion of all prerequisite coursework with grade "C" or higher; minimum GPA of 3.0; Admission to Teacher Education/Credential Candidacy; CBEST passed; subject matter completed and approved; approval of a Certificate of Clearance; TB test clearance; program assessments completed; completion of Directed Teaching approval process and clearance by the Director of Field Experiences. The United States Constitution requirement must be completed to apply for a teaching credential. No other coursework permitted other than CURR 195X and SPED 125X and weekend and vacation workshops, except that a candidate must petition in advance to the Curriculum and Instruction Department's Director of Field Experiences for an additional concurrent course. Corequisite: CURR 195X, SPED 125X.

**EDUC 285. Educational Leadership. 3 Units.**

Students examine functions, responsibilities and relationships of the school principal. Emphasis is on 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.

**EDUC 286. Administration of Human Resources. 3 Units.**

This course addresses skills and techniques of employee selection, orientation, administration, supervision and evaluation. Topics include staff development activities, determining personnel need, and employee organizations.

**EDUC 289. Practicum. 2-4 Units.**

Graduate students may enroll in library research with consent of the department chair.

**EDUC 290. Seminar: Computers in Educational Administration. 3 Units.**

This seminar focuses on techniques of computer utilization as a management tool in school site and central office administration.

**EDUC 291. Graduate Independent Study. 1-4 Units.**

Graduate students may enroll in library research with consent of the department chair.

**EDUC 292. Advanced Fieldwork. 1-6 Units.**

Prerequisite: Consent of the department chair.

**EDUC 292A. Elementary Education Fieldwork. 1-6 Units.****EDUC 292B. Secondary Education Fieldwork. 1-6 Units.****EDUC 292C. Student Affairs Field Experience. 1-3 Units.**

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.

**EDUC 292D. Early Childhood Education Fieldwork. 1-6 Units.****EDUC 292E. Field Experience in Administration and Supervision. 1-4 Units.**

This course offers experience in practical on-the-job administrative and supervisory functions at a school site. One unit over each of three semesters is required. This field experience is open only to administrative credential candidates at the University. Permission of department.

**EDUC 292F. Reading Fieldwork. 1-6 Units.****EDUC 292H. Special Projects Fieldwork. 1-6 Units.**



**EDUC 292L. Advanced Fieldwork in Bilingual Education. 1-6 Units.**

**EDUC 295A. Seminar: Middle School Curriculum. 3 Units.**

Students review curricular issues in middle schools in the United States, that include 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.

**EDUC 295B. Seminar: Secondary Curriculum. 3 Units.**

Students review the curriculum issues in middle and secondary schools in the United States, that include 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.

**EDUC 295C. Seminar: Educational Planning, Delivery, Assessment. 3 Units.**

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.

**EDUC 295E. Seminar: Teaching Reading and Writing. 3 Units.**

Students examine current theory, research, trends, and issues in the teaching of reading and writing. Students translate theory and research in practice through observation of and participation with children in reading and writing activities. Prerequisites: previous coursework in reading, writing, or language development. Graduate standing.

**EDUC 295G. Seminar: Elementary Curriculum. 3 Units.**

Students review curricular issues in elementary schools in the United States, that include 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.

**EDUC 295H. Seminar in Language Teaching. 3 Units.**

This course is a seminar in ESL methods, materials, theories and current research. Prerequisite: EDUC 127 or 227 (may be taken concurrently).

**EDUC 297. Graduate Research in Education. 1-3 Units.**

**EDUC 299. Master's Thesis. 1-4 Units.**

**EDUC 302. Issues in Teacher Education. 3 Units.**

Students review and analyze current curricular topics related to pre-service and in-service teacher preparation.

**EDUC 304. Program Evaluation. 3 Units.**

Students examine selection design and the 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.

**EDUC 306. Curriculum Materials Development. 3 Units.**

Students design and develop appropriate curriculum materials for to achieve program and course objectives.

**EDUC 308. Issues in Curriculum and Instruction. 3 Units.**

Students explore crucial issues and trends in curriculum and instruction, their historical origins, current manifestations and implications for teaching and learning in effective schools.

**EDUC 314. Contemporary Issues in Schooling and Education. 3 Units.**

The intent of this course is to further inquiry into the ways in which school policies and practices have historically been initiated and implemented. In addition attention is paid to the role teachers and students play in the operationalizing of policies and research-based practices. Attention to review of pertinent readings is also emphasized.

**EDUC 316. Interdisciplinary Curriculum Inquiry. 3 Units.**

This course is designed to engage doctoral students in understanding the interrelationships between content areas and how teaching and learning are manifested through the use of interdisciplinary curricular strategies.

**EDUC 318. Research in Classroom Context. 3 Units.**

This course focuses on how to develop skills and knowledge related to conducting research in culturally and ethnically diverse classroom settings. Emphasis is placed on the collection and analysis of data, primarily through observations, interviews and curriculum documents. Students design and implement a study in a classroom context and present their work both in oral and written form.

**EDUC 319. Curriculum Analysis. 3 Units.**

Development of specific skills necessary for in-depth, formal analysis of any given Curriculum, focusing on origins, theoretical perspectives, implementation, enactment, and evaluation.

**EDUC 320. Advanced Curriculum Studies. 3 Units.**

This course is intended to be a capstone research course in curriculum studies. Emphasis is placed on critical analysis of curriculum issues and subsequent research-based and theoretical perspectives relative to areas of doctoral scholarship.

**EDUC 321. Writing for Publication. 3 Units.**

Focus on the relationship between formal inquiry and the development of research-based scholarship. Emphasis on manuscript development for the purpose of submitting to an academic journal for publication consideration.

**EDUC 351. Seminar: Social Scientific Thinking. 3 Units.**

This doctoral core course provides a meaningful theoretical context within which various methodologies and research designs may be better understood.

**EDUC 352. Applied Inquiry I. 3 Units.**

In this course students work collaboratively in learning communities to identify and explore general and specific educational/social/political issues that affect learners/learning outcomes for key educational constituencies. Each student identifies a preliminary issue/problem/concern for his/her dissertation project and engages in early exploration of foundational issues, key theories, and seminal emerging research on these topics.

**EDUC 354. Applied Inquiry II. 6 Units.**

This course provides doctoral students with an overview of assumptions/limitations/strengths and claims of educational research. Further, it provides them with an overview of quantitative and qualitative methodologies (data collection and analysis strategies) and of the relevance of these for specific problems and questions. Prerequisite: EDUC 352.

**EDUC 356. Applied Inquiry III. 3 Units.**

This course places doctoral students into professional learning communities with colleagues and a faculty leader. In these communities, students work collaboratively and independently to ensure that each student develops a refined problem statement and draft literature review. Prerequisites: EDUC 354.

**EDUC 358. Applied Inquiry IV. 3 Units.**

This course places doctoral students into professional learning communities with colleagues and a faculty leader. In these communities, students work collaboratively and independently to ensure that each student develops a defense ready dissertation proposal. Prerequisite: EDUC 356.

**EDUC 360. Seminar: Trends, Issues and Dynamics of Change. 3 Units.**

Students examine current issues and the impact of change in administration of educational programs.

**EDUC 361. Seminar: Ethics, Law and Finance. 3 Units.**

Students examine the relationships between ethics, law, and finance and how they impact decision-making in educational institutions.

**EDUC 362. Seminar: Administration of Instructional Programs. 3 Units.**

The seminar course covers instructional leadership, staff development, educational program planning/evaluation, curriculum designs and instructional delivery strategies, monitoring and evaluating student progress, and the use of instructional time and resources.

**EDUC 363. Seminar: Personnel Issues. 3 Units.**

This seminar course explores personnel management, resource allocations, employee evaluation, collective bargaining, staffing, staff development, and conflict mediation.

**EDUC 364. Seminar: Educational Policy Making and Politics. 3 Units.**

Students examine issues and techniques relative to policy formulation and implementation. The political, social and economic forces that impact policy decisions are emphasized.

**EDUC 365. Seminar: Administration of Higher Education. 3 Units.**

Students study administrative, educational and personnel problems and issues in community colleges and four-year institutions.

**EDUC 366. Seminar: Communication and Public Relations in Education. 3 Units.**

Techniques of effective communications in educational organizations are presented. Developing and maintaining positive public relations and public support for educational problems are emphasized.

**EDUC 367. Seminar: Cultural Diversity and Educational Administration. 3 Units.**

Students explore techniques for working with culturally diverse student, community and faculty populations.

**EDUC 368. Seminar: Administering Complex Educational Organizations. 3 Units.**

This seminar provides an in-depth examination of the theories, issues, trends, and challenges of administering complex educational organizations.

**EDUC 369. Seminar: District Office Administration. 3 Units.**

This seminar provides an in-depth examination of the structure, functions, politics, and purpose of school district administration.

**EDUC 370. Prof. Induction Planning. 2 Units.**

Students learn how to develop a collaborative professional induction plan to meet the requirements for the Professional Administrative Services Credential.

**EDUC 371. Professional Assessment. 2 Units.**

This course provides a formal assessment of candidates for the Professional Administrative Services Credential.

**EDUC 372. Program Evaluation and Grant Writing. 3 Units.**

This course prepares doctoral students with the attitudes, ethics and skills to evaluate a variety of public and private programs, and to develop requests for funding to meet grant specifications.

**EDUC 373. Economics of Education. 3 Units.**

This course prepares students to analyze alternative methods of assessing the contributions of education to economic growth, education and inequality, education production functions, cost analysis and planning, and economic aspects of innovation.

**EDUC 381. Law in Higher Education. 3 Units.**

This course prepares students to examine the legal dimensions of the collegiate-level decision process. Administrative arrangements, policy issues and case law are analyzed.

**EDUC 382. Leadership in Higher Education. 3 Units.**

This course prepares doctoral students with the attitudes and skills to analyze leadership theories, challenges and strategies in higher education.

**EDUC 383. Administering Curriculum, Pedagogy and Assessment in Higher Education. 3 Units.**

Students examine the application of principles and promising practices for teaching and learning in higher education. This course also examines curriculum design, pedagogy and assessment in post secondary programs of study.

**EDUC 389. Curriculum Practicum. 2-4 Units.**

**EDUC 390. Qualitative Research Design and Methods. 3 Units.**

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. Prerequisite: EPSY 201 with a "B" or better or equivalent and EPSY 214.

**EDUC 391. Graduate Independent Study. 1-4 Units.**

**EDUC 391D. Graduate Independent Study. 1-4 Units.**

**EDUC 391E. Graduate Independent Study. 1-4 Units.**

**EDUC 391F. Graduate Independent Study. 1-4 Units.**

**EDUC 392. Internship and Advanced Field Experience in Administration. 1-4 Units.**

Permission of department chair.

**EDUC 393C. Special Topics. 1-3 Units.**

**EDUC 393D. Special Topics. 1-4 Units.**

**EDUC 393E. Special Topics. 1-4 Units.**

**EDUC 393F. Special Topics. 1-4 Units.**

**EDUC 393G. Special Topics. 1-4 Units.**

**EDUC 393H. Special Topics. 1-4 Units.**

**EDUC 393I. Special Topics. 1-4 Units.**

**EDUC 394. Seminar: Doctoral Research in Educational Administration. 3 Units.**

The goal of this semester is to have doctoral students develop an acceptable dissertation proposal. Faculty members lead discussions, provide individual assistance, and collaborate on individual student progress with the aim to assist the student in the proposal development process. The seminar is divided into group sessions and individual meetings with student selected dissertation advisors. Prerequisite: Permission of department chair.

**EDUC 397. Graduate Research in Education. 1-3 Units.**

**EDUC 398A. QSA Proposal Development. 1 Unit.**

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.

**EDUC 398B. QSA Projects. 1 Unit.**

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.

**EDUC 398C. Dissertation Proposal Development. 1 Unit.**

This course is 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.

**EDUC 398D. Qualifying Scholarly Activities. 1 Unit.**

EDUC 398 provides doctoral candidacy qualifying requirement to demonstrate competence in research and subject matter. Students (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.

**EDUC 399. Doctoral Dissertation. 1-15 Units.**

Educational Psychology Courses

**EPSY 121X. Learner-Centered Concerns. 3 Units.**

This course is a general overview of stages in human development from birth to young adulthood. Topics include 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. Students who are interested in Multiple Subject, Single Subject and/or Educational Specialist credentials take this course. Twenty hours of fieldwork in K-12 public schools is required. Open to all students. Prerequisite: admission to Teacher Education; fingerprint review and clearance at local districts; TB test clearance (there is a fee for these services).

**EPSY 191. Independent Study. 1-3 Units.**

Permission of department chair is required.

**EPSY 201. Techniques of Research. 3 Units.**

Students study the various research methodologies that include qualitative, descriptive, causal-comparative, survey, correlational and experimental. Emphasis is on learning to read and comprehend research published in professional journals. The content includes understanding how basic descriptive and inferential statistics are applied to address quantitative research questions.

**EPSY 214. Intermediate Statistics. 3 Units.**

This course is not intended to be a first course in statistics. It reviews descriptive statistics that includes correlation and probability. Also included is an introduction to applied inferential statistics, t-test for means, tests for proportions, tests for correlations and ANOVA that utilize statistical computing software. Emphasis is placed on conceptual understanding to ensure students recognize the power as well as the limitations of statistical techniques.

**EPSY 220. Nature and Condition of Learning. 3 Units.**

Students study 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 121X or equivalent or consent of the instructor.

**EPSY 285. Alcohol and Drug Dependency Counseling. 1 Unit.**

This 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, how to work with families, relapse prevention and adjunctive resources.

**EPSY 286. Child Abuse Counseling Issues. 1 Unit.**

this course 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 Unit.**

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 is required.

**EPSY 291. Independent Graduate Study. 1-4 Units.**

Prerequisite: Consent of the department chair.

**EPSY 294B. School Psychology Fieldwork. 1-4 Units.**

EPSY 294B offers advanced supervised field placement in preschool and/or K-12 setting(s). Permission of instructor for selection field site/supervisor.

**EPSY 297. Graduate Research. 1-3 Units.**

Permission of department chair.

**EPSY 299. Master's Thesis. 4 Units.****EPSY 300. Seminar: Introduction to School Psychology. 1 Unit.**

This course serves as an introduction to the specialization of school psychology. It is intended to give the student an overview of the field of school psychology that focuses on the role and function of the school psychologist in the public schools and other settings. Topics include the history of school psychology, Pupil personnel services in schools, service delivery models, school psychology, organizations, research traditions in school psychology, international school psychology, ethical and legal issues, publications and resources in school psychology. Prerequisites: Admission to school psychology program.

**EPSY 301. Data-Based Decision Making I. 2 Units.**

This course introduces the graduate student to the systematic processes used by school psychologists to collect and analyze data. This course is accompanied by one unit of EPSY 294B School Psychology Field Work. Students learn various methods of data collection, that include interviews, systematic observations, and review of records. Prerequisites: Admission to school psychology program.

**EPSY 302. Data-Based Decision Making II. 2 Units.**

This course is a continuation of EPSY 301 Data-Based Decision Making I. This course is accompanied by one unit of EPSY 294B School Psychology Field Work. Students learn various methods of data collection, that include interviews, systematic observations, and review of records. Students are also introduced to the response-to-intervention model, and some of the basic curriculum-based assessment techniques. Prerequisites: admission to school psychology program and EPSY 301.

**EPSY 306. Psychotherapeutic Interventions in School. 3 Units.**

This course prepares school psychologists to design, implement, and evaluate wellness, prevention, intervention, and other mental health programs at the individual, group, and program level to school-aged children. Prerequisites: Admission to school psychology program.

**EPSY 307. Group Counseling. 3 Units.**

This course prepares school psychologists to use direct methods and techniques of group counseling for school-aged children. Prerequisites: Admission to school psychology program.

**EPSY 308. History and Systems of Psychology. 3 Units.**

This course explores major developments and ideas in the history of psychology as an academic discipline. Although our focus is on psychology this course also introduces students to the history and foundations of the profession of school psychology, including education, special education, health care, and related fields. This course will examine the historical progression of ideas central to psychology, the philosophical and empirical roots of those ideas, and the confluence of those ideas into the various systems we have today. This survey course includes such topics as the history of psychology from the early Greek philosophers, through the beginnings of modern science and philosophy, through the early approaches to psychology, to psychology in its most contemporary form.

**EPSY 309. Consultation Methods. 3 Units.**

This course prepares school psychologists to provide mental health consultation to school personnel and parents. Various consultation methodologies are studied with applications particularly appropriate to children in the public school system.

**EPSY 310. Crisis Intervention. 3 Units.**

This course helps prepare school psychologists to be able to work with school personnel, pupils, parents, and the general community in the aftermath of personal, school, and community crises.

**EPSY 311. Law and Professional Ethics. 1 Unit.**

This course provides students with the opportunities and experiences to display an understanding of current legal mandates, as well as an awareness of the range of legal issues, such as statutory, regulatory, and case law affecting the delivery of pupil services. Students acquire the ability to access information about legal and ethical matters.

**EPSY 312. Child Psychology/Wellness Promotion. 3 Units.**

This course examines various programmatic approaches to the primary and secondary prevention of emotional disturbance and educational failure and the promotion of health and mental health in public schools.

**EPSY 315. Individual Assessment. 3 Units.**

This course prepares school psychologists to use assessment information in a problem-solving process, and to use data-based decision making to improve outcomes for instruction, development of cognitive and academic skills, and the development of life competencies. Students are also exposed to process and procedures identified in federal and state laws related to special education services.

**EPSY 316. Behavior/Personality Assessment in School. 3 Units.**

This course is designed to prepare school psychologists to gain proficiency in the administration, scoring, and interpretation of several instruments commonly used in behavioral and personality assessment in the schools. The writing of professional reports, theoretical aspects and measurement of behavior and personality, and legal and ethical issues are addressed.

**EPSY 317. Neuropsychology in the Schools. 3 Units.**

This course provides a general overview of brain-based behavior, neuroanatomy and physiology, conceptualizing psychoeducational assessment data from a neuropsychological perspective, the effects and uses of psychotropic agents, and information on neuropathology as it pertains to learner-centered problems.

**EPSY 318. Program Evaluation for School Psychologists. 3 Units.**

This course prepares advanced degree students with the attitudes, ethics and develop skills that will allow them to evaluate a variety of educational programs in different types of settings, as well as develop requests for funding to meet grant specifications. This course is specifically designed for the unique responsibilities of professionals in school psychology.

**EPSY 324. Seminar: Advanced Consultation and Supervision. 3 Units.**

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.

**EPSY 325. Social Psychology in the Schools. 3 Units.**

This course is designed to introduce students to current social psychology theory, concepts, and research. A broad range of theoretical topics will be covered, including research methodology, the self, attributions and social perception, social cognition, attitudes, social influence, attraction and interpersonal relationships, prosocial behavior, and aggression. Additionally, issues of diversity, such as prejudice, stereotypes, and group dynamics/relations, will be addressed. The relevance of these social psychology concepts as foundational for the practice of professional psychology will be highlighted.

**EPSY 330. Seminar: Advanced Human Development I. 3 Units.**

This course, the first in a three-course sequence, focuses on the early childhood development. 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 early development.

**EPSY 331. Seminar: Advanced Human Development II. 3 Units.**

This course, the second in a three-course sequence, focuses on the developmental period of 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.

**EPSY 332. Seminar: Advanced Human Development III. 3 Units.**

This course, the last in a three-course sequence, focuses on the developmental period of adolescence. 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 adolescent development. Prerequisite: EPSY 331.

**EPSY 391. Graduate Independent Study. 1-3 Units.**

Permission of department chair.

**EPSY 394. Applied Multiple Regression. 3 Units.**

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; and b) logistic regression analyses involving categorical dependent variables. Prerequisite: EPSY 214 or equivalent course.

**EPSY 395. Quantitative Research Design and Method. 3 Units.**

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. Students learn both to critically examine published research as well as to design methods for studies proposed to validly address research questions dealing with (a) significance of group differences; (b) degree of relationship among variables; (c) prediction of group membership; and/or (d) structure. Prerequisite: EPSY 214.

**EPSY 395J. Seminar: Promoting Cultural Competence Across Systems. 3 Units.**

This course is designed to provide the doctoral student with advanced training in and exposure to effective models to promote cultural competence in public schools, with an emphasis on systems-level change with diverse populations.

**EPSY 395M. Measurement Theory and Practice. 3 Units.**

This course is designed to solidify students' understanding of classical test theory to and introduce them to modern test theory, that includes Item Response Theory. Prerequisites: EPSY 204 and EPSY 215 or equivalent.

**EPSY 396. Structural Equation Modeling. 3 Units.**

This course is designed to build upon knowledge and skills in multivariate statistical analysis and introduce students to structural equation modeling. Students will develop conceptual as well as practical understandings of structural equation modeling (SEM), and will learn basic SEM techniques to analyze data. Students will also develop skills in writing results from an SEM analysis. Prerequisite: EPSY 394, EPSY 395.

**EPSY 397. Graduate Research. 1-4 Units.**

Permission of department chair.

**EPSY 397D. Graduate Research. 1-4 Units.**

**EPSY 397E. Graduate Research. 1-4 Units.**

**EPSY 397F. Graduate Research. 1-4 Units.**

**EPSY 398. School Psychology Internship. 1-4 Units.**

Student 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: Students must have an intern credential and permission of the instructor before beginning an internship.

**EPSY 399. Doctoral Dissertation. 1-10 Units.**

Special Education Courses

**SPED 123. The Exceptional Child. 3 Units.**

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 Units.**

The role of assessment in teaching students with disabilities will be explored. In addition, teacher made test, 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 Education Specialist: Mild/Moderate/Severe Disabilities. Prerequisites: SPED 123 and SPED 166. Admission to Teacher Education/Credential Candidacy or permission of Special Education Coordinator or Department Chair of Curriculum and Instruction.

**SPED 125X. Teaching Exceptional Learners. 2 Units.**

This method-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.

**SPED 128M. Advanced Programming for Students with Mild/Moderate Disabilities. 3 Units.**

Theoretical and applied information that pertains to the characteristics and educational needs of students with mild to moderate disabilities is presented. The course complies with the California Commission on Teacher Credentialing (CCTC) requirements for the Preliminary Level One Credential for Educational Specialist: Mild/Moderate Disabilities. Prerequisites: SPED 123 and SPED 166 with admission to Teacher Education/Credential Candidacy or permission of Special Education Coordinator or Department Chair of Curriculum and Instruction.

**SPED 128S. Advanced Programming for Students with Moderate/Severe Disabilities. 3 Units.**

This course presents theoretical and applied information that pertains to specialized health care and sensory needs as well as educational characteristics for students with moderate/severe disabilities. This course complies with the California Commission on Teacher Credentialing (CCTC) requirements for the Preliminary Level One Credential for Educational specialist: Moderate/Severe Disabilities. Prerequisites: SPED 123 and SPED 166 with admission to Teacher Education/Credential Candidacy or permission of Special Education Coordinator or Department Chair of Curriculum and Instruction.

**SPED 142M. Curriculum and Instruction for Students with Mild/Moderate Disabilities. 3 Units.**

This course presents theoretical and applied information that pertains to methods of curriculum and instruction for students with mild to moderate disabilities. This course complies with the California Commission on Teacher Credentialing (CCTC) requirements for The Preliminary Level One Credential for Educational Specialist: Mild/Moderate Disabilities. Prerequisites: SPED 123 and SPED 166 with admission to Teacher Education/Credential Candidacy or permission of Special Education Coordinator or Department Chair of Curriculum and Instruction.

**SPED 142S. Curriculum and Instruction for Students with Moderate/Severe Disabilities. 3 Units.**

This course presents theoretical and applied information that pertains to methods of curriculum and instruction for students with moderate to severe disabilities. This course complies with the California Commission on Teacher Credentialing (CCTC) requirements for the Preliminary Level One Credential for Educational Specialist: Moderate/Severe Disabilities. Prerequisites: SPED 123 and SPED 166 with admission to Teacher Education/Credential Candidacy or permission of Special Education Coordinator or Department Chair of Curriculum and Instruction.

**SPED 166. Building Family-Professional Partnerships. 3 Units.**

This course provides 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 are also be examined. Ten hours of field experience is required as part of the course content.

**SPED 191. Independent Study. 1-4 Units.**

Permission of department chair is required.

**SPED 195E. Positive Behavioral Support in the Classroom. 3 Units.**

Theoretical and applied information that pertains to methods of providing positive behavioral support to students with and without disabilities in educational settings are examined. This course complies 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 and SPED 166 with admission to Teacher Education/Credential Candidacy or permission of Special Education Coordinator or Department Chair of Curriculum and Instruction.

**SPED 198M. Directed Teaching: Mild/Moderate. 1-10 Units.**

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: the completion of all prerequisite and required courses needed to enroll in Directed Teaching and permission of the Director of Special Education or designate.

**SPED 198S. Directed Teaching: Moderate/Severe. 1-10 Units.**

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 are the completion of all prerequisite and required courses needed to enroll in Directed Teaching and permission of the Director of Special Education or designate.

**SPED 224. Assessment of Special Education Students. 3 Units.**

The role of assessment in teaching students with disabilities is explored. In addition, teacher made tests, curriculum based assessment, portfolio assessment and commonly used standardized tests are examined. This course complies with the California Commission on Teacher Credentialing (CCTC) requirements for the Preliminary Level One Credential for Educational Specialist: Mild/Moderate or Moderate/Severe Disabilities. Prerequisites: SPED 123, SPED 166 and admission to Teacher Education/Credential Candidacy or permission of Special Education Coordinator or Department Chair of Curriculum and Instruction.

**SPED 228M. Advanced Programming for Students with Mild/Moderate Disabilities. 3 Units.**

Theoretical and applied information that pertain to the characteristics and educational needs of students with mild to moderate disabilities are presented. The course complies 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 admission to Teacher Education/Credential Candidacy or permission of Special Education Coordinator or Department Chair of Curriculum and Instruction.

**SPED 228S. Advanced Programming for Students with Moderate/Severe Disabilities. 3 Units.**

Theoretical and applied information that pertain to specialized health care and sensory needs as well as educational characteristics for students with moderate/severe disabilities are presented. This course complies 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 admission to Teacher Education/Credential Candidacy or permission of Special Education Coordinator or Department Chair of Curriculum and Instruction.

**SPED 242M. Curriculum and Instruction for Students with Mild/Moderate Disabilities. 3 Units.**

Theoretical and applied information that pertain to methods of curriculum and instruction for students with mild to moderate disabilities are presented. This course complies with the California Commission on Teacher Credentialing (CCTC) requirements for the Preliminary Level One Credential for Educational Specialist: Mild/Moderate or Moderate/Severe Disabilities. Prerequisites: SPED 123, SPED 166 and admission to Teacher Education/Credential Candidacy or permission of Special Education coordinator or department Chair.

**SPED 242S. Curriculum and Instruction for Students with Mild/Moderate Disabilities. 3 Units.**

This course presents theoretical and applied information that pertain to methods of curriculum and instruction for students with moderate to severe disabilities. This course complies with the California Commission on Teacher Credentialing (CCTC) requirements for the Preliminary Level One Credential for Educational Specialist: Mild/Moderate or Moderate/Severe Disabilities. Prerequisites: SPED 123, SPED 166 and admission to Teacher Education/Credidacy or permission of Special Education.

**SPED 250. Introduction to Induction Plan. 2 Units.**

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 as well as to set goals and objectives for their continued teacher development and to apply theoretical understandings to the classroom. The course complies 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 Units.**

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. Students must have two years of teaching experience as an Educational Specialist. This course complies with the California Commission on Teacher Credentialing (CCTC) requirements for the Level II Professional Development Educational Specialist Mild/Moderate or Moderate/Severe Disabilities Clear Credential. The Special Education coordinator or department chair must be consulted prior to enrollment to update progress on the Professional Induction Plan. Prerequisites: SPED 250; SPED 295A or SPED 385a; and completion of electives in the Professional Development Plan.

**SPED 291. Independent Graduate Study. 1-3 Units.**

**SPED 293. Special Project. 1-3 Units.**

Prerequisite: Consent of the department chair.

**SPED 295A. Seminar: Crucial Issues in Special Education. 3 Units.**

This course provides a methodology and format for advanced special education students and other related disciplines to explore crucial issues and trends and their historical origin. Course content includes attention to research and the development of positions on trends, issues and current law.

**SPED 295E. Positive Behavioral Support in the Classroom. 3 Units.**

Theoretical and applied information that pertain to methods of providing positive behavioral support to students with and without disabilities in educational settings is examined. This course complies with the California Commission on Teacher Credentialing (CCTC) requirements for the Preliminary Level One Credential for Educational Specialist: Mild/Moderate or Moderate/Severe Disabilities. Prerequisites: SPED 123, SPED 166 and admission to Teacher Education/Credential Candidacy or permission of Special Education coordinator or department chair.

**SPED 297. Graduate Research. 1-3 Units.**

**SPED 298M. Directed Teaching: Special Education (Mild/Moderate). 1-10 Units.**

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. All prerequisite and required courses must be completed to enroll in Directed Teaching. Permission of Director of Special Education.

**SPED 298S. Directed Teaching: Special Education (Moderate/Severe). 1-10 Units.**

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. All prerequisite and required courses must be completed to enroll in Directed Teaching. Permission of Director of Special Education.

**SPED 299. Master's Thesis. 4 Units.**

**SPED 391. Independent Graduate Study- Special Education. 1-3 Units.**

**SPED 391D. Indep. Grad. Study/Spec. Educ.. 1-4 Units.**

**SPED 395A. Seminar: Crucial Issues in Special Education. 3 Units.**

This semester 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 is included.

**SPED 397. Graduate Research. 1-3 Units.**

# School of Engineering and Computer Science

Ravi Jain, Dean

## Programs Offered

**Master of Science in Engineering Science**

## Concentrations

**Civil Engineering (Environmental, Structural)  
Computer Engineering / Electrical Engineering / Computer Science  
Mechanical Engineering**

The Master of Science in Engineering Science (MSES) is designed to strengthen students' technical, analytical, and professional breadth and depth. Students are introduced to techniques and best practices of professional research and learn the foundations for assessing the merits of published technical findings.

The goal of the graduate program in the School of Engineering and Computer Science is threefold:

1. to advance student professional standing;
2. to extend the curiosity, intellectual capacities, and knowledge of its students;
3. and to stimulate and support the products of intellectual inquiry.

Students interested in eventually pursuing a PhD often build upon this training by engaging in research and completing a thesis. Other students interested in applied technology may prefer to enhance their studies with a graduate-level practicum experience in industry, or by taking additional coursework.

## Mission

The mission of the School of Engineering and Computer Science is to provide a superior, student-centered learning environment that 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.

## Accelerated Five Year Blended Program

The accelerated five year Blended Program provides an excellent opportunity for students to begin their graduate work while they complete their undergraduate degree requirements. Students can pursue the accelerated Blended Program that allows them to complete their bachelors and masters degree in as little as five years. This five year period includes some summer sessions that depend upon if advanced placement units were earned prior to starting at Pacific.

Students would begin by enrolling in an undergraduate program in the Pacific SOECS. Following acceptance into the Blended Program, students may begin taking graduate level courses at any time after they reach senior status that allows the bachelors and masters degrees to blend together. The two degrees are awarded on the same date.

## Thesis and Non-thesis Options

The MSES program has two degree options: thesis and non-thesis plans, each requiring a minimum number of 30 units. The thesis plan requires students to perform independent research and culminates in the completion of a thesis based on the findings of the research. The thesis plan is intended for students who plan to pursue a career in research or plan to pursue a PhD. The non-thesis option allows students to complete a project, engage in directed experiential learning, or complete all their units through coursework.

## Blended Program Admission Criteria

School of Engineering and Computer Science undergraduates who maintain a minimum institutional GPA of 3.0 and a major GPA of 3.0 upon reaching senior status are given priority consideration for admission to the Blended Program and if admitted may begin taking graduate level courses at that time that allows the BS and MS degrees to blend together. Students who choose to withdraw from the program prior to completing all the requirements may be awarded the Bachelor of Science degree alone, contingent upon having completed all of the respective program requirements, which includes the co-op experience.

## Graduate Program Admission Criteria

Prospective students with earned bachelor's degrees must submit the following materials to the Research and Graduate Studies Office at the University of the Pacific. A completed application includes:

1. The Graduate School application form
2. Three letters of references
3. Transcripts from the institution where the BS in engineering or computer science (or relevant degree) was granted
4. A personal statement on professional goals and objectives
5. Official scores on the GRE General Examination.
6. A 3.0/4.0 GPA on the last 60 units of undergraduate study
7. For students whose first language is not English, Test of English as a Foreign Language (TOEFL) is required. The minimum score for admission is 550 (paper) or 213 (computer) and the minimum score for a teaching assistantship award is 575 (paper) or 231 (computer)

## General Academic Policies

### Engineering and Computer Science Prerequisite Requirement

All MS in Engineering Science course prerequisites must be passed with a C or higher grade.

### Courses Taken Pass/No Credit

All courses that count toward the MS in Engineering Science must be taken for a letter grade.

### Graduate 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 a graduate independent study. The qualified student should initiate discussions with his/her advisor and with a professor who is knowledgeable in the subject. If both parties are in agreement, the student must complete the Individualized Study Form and submit it to the instructor and Office of the Registrar prior to the last day to add (see University Academic Calendar). 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 advisor 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. Each course may be taken for one (1), two (2), three (3), or four (4) units. The unit value for the course is established between the student and the professor responsible for the course. The student's advisor should be informed of this decision.

## Course Substitutions

The substitution of course(s) from the printed degree program is discouraged. When extenuating circumstances warrant consideration, the student should meet with his/her advisor, 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.

## School of Engineering and Computer Science Faculty

Ravi K. Jain, Dean and Professor, 2000, BS, California State University, Sacramento, 1961; MS, 1968; PhD, Texas Tech University, 1971; MPA, Management and Public Policy, Harvard University, 1980.

Gary R. Martin, Assistant Dean of Administration and Professor of Cooperative Education, 1983, BA, University of California, Davis, 1981; MS, California State University, Hayward, 1982; EdD, University of the Pacific, 1987. Educational counseling and psychology, Pupil Personnel Services Credential.

Louise Stark, Associate Dean and Professor of Computer Engineering, 1992, BSCpE, University of South Florida, 1986; MSCpE, 1987; PhD, Computer Science and Engineering, 1990. Computer vision, artificial intelligence, digital design, computer graphics, virtual reality.

William H. Ford, Professor and Chair of Computer Science, 1974, BS, Massachusetts Institute of Technology, 1967; PhD, University of Illinois, 1972. Numerical methods, discrete mathematics, computing theory.

Gary M. Litton, Professor and Chair of Civil Engineering, 1993, BS, University of California, Irvine, 1980; MS, 1990; PhD, 1993. Registered Professional Engineer; Environmental engineering, water quality, and modeling.

Jennifer Ross, Associate Professor and Chair of Electrical and Computer Engineering, 1993, BS in Electrical Engineering, University of Illinois, 1988; MS in Electrical Engineering, University of California Berkeley, 1990, PhD in Electrical Engineering, University of California Berkeley, 1993; Solid state, short wavelength lasers, analog circuits and devices.

Brian L. Weick, Chair and Professor of Mechanical Engineering, 1995, BSME, Union College, 1986; MSME, Virginia Polytechnic Institute and State University, 1990; PhD, Materials Engineering Science, 1993. Manufacturing processes, materials science, design, tribology and viscoelasticity.

Jeffrey S. Burmeister, Program Director and Associate Professor of Bioengineering, 2002, BS, Mechanical Engineering, University of Delaware, 1988; PhD, Biomedical Engineering, Duke University, 1995, Biomaterials, cell adhesion.

Zendgi Cui, Assistant and Assistant Director, Pacific Resources Research Center, 2008, BS in Hydrogeology & Engineering Geology, Geology at China University of Mining & Technology, 1990; BS in Computer Science, University of Windsor, 2000; MBA, Shandong University of Science & Technology, 1995; MS in Computer Science, Wayne State University, 2002; PhD in Circulation Economy & Sustainable Development at Shandong University of Science & Technology, 2010; Project-based software engineering, database management systems, cyclic economy and sustainable development, technology transfer and marketing strategy.

Abel A. Fernandez, Professor of Civil Engineering and Director of Engineering Management, 2000, BS, Electric Power Engineering, Rensselaer Polytechnic Institute, 1974; ME, Electric Power Engineering, 1976; MBA, 1976; PhD, Industrial Engineering, University of Central Florida, 1995. Registered Professional Engineer. Project Management, systems engineering, resource management, risk analysis and management, modeling and simulation, optimization.

Maria Garcia-Sheets, Director of MESA (Mathematics, Engineering and Science Achievement) Schools Program and the MESA Engineering Program, 1995, BA, University of California, Davis, 1991; MA,

Communication, University of the Pacific, 1999, Director of Education, Educational Administration and Leadership, 2008.

William Stringfellow, Professor and Director of the Ecological Engineering Research Program, 2009, BS Environmental Health, University of Georgia, 1980; MS Microbiology, Virginia Polytechnic Institute, 1984, PhD Environmental Sciences and Engineering, University of North Carolina, 1994.

Dr. Henghu (Henry) Sun, Professor and Director, Pacific Resources Research Center, School of Engineering and Computer Science, 2008, 2008 Professor, PCSP Program, TJL Pharmacy School, University of the Pacific; 2002-2008, Professor, Tsinghua University; 1988, PhD China University of Mining and Technology.

Elizabeth Basha, Assistant Professor of Electrical and Computer Engineering, 2010, BS in Computer Engineering, University of the Pacific, 2003; SM in Electrical Engineering and Computer Science, Massachusetts Institute of Technology, 2005; PhD in Electrical Engineering and Computer Science, Massachusetts Institute of Technology, 2010. Sensor networks, autonomous robotics, international development.

Emma Bowring, Assistant Professor of Computer Science, 2007, BS, University of Southern California, 2003; PhD, University of Southern California, 2007. Artificial Intelligence, multi-agent systems, computer science education.

Ashland O. Brown, Professor of Mechanical Engineering, 1991, BSME, Purdue University, 1966; MSME, University of Connecticut, 1968; PhD, 1974. Licensed Professional Engineer. Fluid mechanics, thermal sciences and finite element analysis.

Mary Kay Camarillo, Assistant Professor of Civil Engineering, 2009, BS, University of Washington, 1996; MS, University of California, Davis, 2004; PhD, 2009; Registered Professional Engineer. Environmental engineering, physical and chemical treatment of water and wastewater.

Cathy Carlson, Visiting Assistant Professor of Computer Science, 2008, BS, University of the Pacific, 2004; MBA, University of the Pacific, 2005. Business application training and implementation; lead tracking, generation and analytic software; website design.

Calvin P. Chen, Assistant Professor and Coordinator of Cooperative Education, 2006, BSCE, Rice University, 2000; MBA, Rice University, 2005.

Daniel Cliburn, Associate Professor of Computer Science, 2006, BS, Illinois College, 1997; MS, University of Kansas, 1999; PhD, University of Kansas, 2001. Computer graphics, visualization, virtual reality, computer science education.

Michael Doherty, Associate Professor of Computer Science, 1998, BS, University of Florida, 1983; MS, University of Rhode Island, 1992; PhD University of Colorado at Boulder, 1998. Simulation, video game technology, database applications, computer graphics.

Hector Estrada, Professor of Civil Engineering, 2006, BS, University of Illinois, 1993; MS, 1994; PhD, 1997. Registered Professional Engineer. Structural engineering and engineering mechanics.

Jinzhao Gao, Associate Professor of Computer Science, 2008, BS Computer Science and Engineering, Huazhong University of Science and Technology, 1995; MS Mechanical Engineering, Huazhong University of Science and Technology, 1998; PhD Computer and Information Science, Ohio State University, 2004. Scientific visualization, computer graphics, large scale data management, data analysis and visualization, data-intensive computing, remote visualization, web-based applications.

Shelly Gulati, Assistant Professor of Bioengineering, 2010, BS, Chemical Engineering, Johns Hopkins University, 2000; PhD, Bioengineering, University of California, Berkeley and San Francisco, 2006. Microfluidics, biological fluid flow.

Kenneth F. Hughes, Associate Professor of Computer Engineering, 1993, BS, Information and Computer Science, Georgia Institute of Technology, 1985; MS, Computer Science, University of South Florida, 1989;



PhD, 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.

Rahim Khoie, Professor of Electrical and Computer Engineering, 2002, BSEE, 1977, Abadan Institute of Technology, Abadan, Iran; MS, 1980, University of Pittsburgh; PhD, 1986, University of Pittsburgh. High speed electron devices, Quantum effect devices, Solid state physics, Renewable energy, Analog and digital electronics, and Embedded Systems.

Scott Larwood, Assistant Professor of Mechanical Engineering, 2009, BS, Aeronautical Engineering, California Polytechnic State University, San Luis Obispo, 1988; MS, Aeronautics and Astronautics, Stanford University, 1993; PhD, Mechanical and Aeronautical Engineering, University of California at Davis, 2009. Licensed Professional Engineer. Wind energy, fluid mechanics, vibrations, dynamics.

Chi-Wook Lee, Associate Professor of Mechanical Engineering, 1998, BSME, Hanyang University (Korea), 1981; MSME, University of Wisconsin-Madison, 1984; PhD, Mechanical Engineering, University of Florida, 1991. Mechatronics, systems dynamics, and bio-mechanics.

Luke Lee, Assistant Professor of Civil Engineering, 2008, BS, University of California, Los Angeles, 1997; MS, University of California, Berkley, 1998, PhD University of California, San Diego, 2005. Registered Professional Engineer. Structural engineering and rehabilitation and monitoring of infrastructure systems.

Jiancheng Liu, Associate Professor of Mechanical Engineering, 2006, BS, Taiyuan University of Technology (China), 1984; MS, 1987; PhD, Himeji Institute of Technology, now named University of Hyogo (Japan), 1996. Manufacturing, machine design.

Cherian Mathews, Professor of Electrical and Computer, 2005, B.E. in Electrical Engineering, Anna University, Chennai, India, 1987; MS in Electrical Engineering, Purdue University, 1989; PhD in Electrical Engineering, Purdue University, 1993; Statistical signal processing, Array signal processing, Real-time digital signal processing using DSP processors, Power Systems.

Scott M. Merry, Associate Professor of Civil Engineering, 2010, BS, University of Arizona, 1991; MS, Purdue University, 1993; PhD University of CA, Berkeley, 1995; Registered Professional Civil and Geotechnical Engineer; Geotechnical engineering, levees and slope stability; engineering management.

Camilla M. Saviz, Associate Professor of Civil Engineering, 1999, BSME, Clarkson University, 1987; MSME, 1989; MBA, New York Institute of Technology, 1991; PhD, Civil and Environmental Engineering, University of California, Davis, 2003. Registered Professional Engineer. Environmental Engineering, water resources, hydrodynamic and water quality modeling, fluid mechanics.

Cathi Schuler-Sawyer, Assistant Visiting Professor in Computer Science, 1993, BA, University of California, Santa Barbara, 1974; MSW, California State University, Sacramento, 1976. Business software consulting and training, technical writing, Web development.

Jeffrey Shafer, Assistant Professor of Computer Engineering, BS, Computer Engineering, University of Dayton, 2002; MS, Electrical Engineering, University of Dayton, 2004; PhD, Electrical and Computer Engineering, Rice University, 2010; Computer architecture, Network systems architecture, Data-intensive computing, Cloud computing, Virtualization.

Kyle A. Watson, Associate Professor of Mechanical Engineering, 2003, BSME, Villanova University, 1995; MS, North Carolina State University, 1997; PhD, 2002. Thermal sciences, fluid mechanics, combustion.

Cynthia Wagner Weick, Professor, 1990, BS, Crop Physiology, Ohio State University, 1979; MS, Crop Physiology, 1980; PhD, Business Administration, University of Pennsylvania, 1986. International technology and innovation, strategic management in R&D based organizations.

Anahita Zarei, Assistant Professor of Electrical and Computer Engineering, 2007, BS, Electrical Engineering, 2001, University of Washington; MS, Electrical Engineering, 2002, University of Washington; MS, Applied Mathematics, 2007, University of Washington; PhD, Electrical Engineering, 2007, University of Washington. Computational Intelligence, Signal Processing, Probability and Statistics.

## Master of Science in Engineering Science Curriculum

All students who receive an MSES complete a set of core courses that cover the broader subjects of research and analysis. In addition, depending upon the option chosen, six units of thesis, project, directed experiential learning or coursework is required.

Core courses that cover the broader subjects of research and analysis:

| Category/Sub-category  | Unit  |
|--|-------|
| Graduate Seminar   | 2-3   |
| Techniques in Research   | 3     |
| Math or Computational Science Elective                         | 3     |
| Breadth Elective   | 3     |
| Concentration Specified Courses                                | 12-15 |
| Thesis, Project, Directed Experiential Learning, or Coursework | 6     |

Students must first choose whether they plan to complete the "Thesis Option" or the "Non-thesis Option."

### A. Thesis Option

1. Students must complete a minimum of 30 units.
2. All students must perform independent research that must culminate in the completion of a thesis based on the findings of the research. For successful completion of the thesis course, students must submit a research proposal, conduct the research, write the thesis, and successfully complete a final oral defense. Students who choose the Thesis Option may not get credit for directed experiential learning at the graduate level.
3. All students must enroll in the one-unit seminar course, ENGR 295, Graduate Seminar, a minimum of two terms, and a maximum of three.
4. All students complete six units of ENGR 299, Thesis Research.

### B. Non-thesis Option

1. Students must complete a minimum of 30 units.
2. Students who choose the Non-thesis Option may choose to do a project, directed experiential learning, or they may satisfy all the unit requirements through coursework.
  - a. For the *directed experiential learning* option, the SOECS assists students in securing engineering or computer science employment or a paid internship at a graduate engineer level. Students work with the Co-op Director, their faculty advisor, and their worksite supervisor to develop a research/design project along with a list of expected professional and technical learning objectives, with the experience culminating in the preparation of a report which documents the fulfillment of the project and these objectives.
  - b. For the *project* option, students need to be employed in an engineering or computer science capacity. They come up with a special project in conjunction with their worksite supervisor and their faculty advisor. Upon completion of the project, the student submits a comprehensive report that outlines the project and documents its completion. The success of the

project is judged by the faculty advisor, with input from the worksite supervisor.

- c. Students may elect to satisfy the entire degree through courses.

## Master of Science in Engineering Science with a concentration in Civil Engineering

Within the Civil Engineering concentration, students can focus on the areas of environmental, management or structural. Students must complete a minimum of 30 units with a Pacific cumulative grade point average of 3.0 in order to earn the master of science in engineering science degree.

### Core Courses

ENGR 201 Techniques in Research 3

Select one of the following Math or Computational Science Elective: 3

ENGR 219 Numerical Methods for Engineering

ENGR 250 Probability and Statistics for Engineering and Computer Science

Breadth Elective (one from approved list for concentration) 3-4

Select one of the following options: 6-9

#### A) Thesis Option

ENGR 295 Graduate Seminar

ENGR 299 Thesis

#### B) Project Option

ENGR 291 Graduate Independent Study

ENGR 297 Graduate Research

#### C) Directed Experiential Learning Option

ENGR 281 Directed Experiential Learning

#### D) Course Work Option

Courses Approved by Advisor as Coherent Plan

### Concentration Requirements

Four Electives Approved by Advisor as Coherent Plan 12-15

## Master of Science in Engineering Science with a concentration in Computer Engineering/Electrical Engineering/Computer Science

Students must complete a minimum of 30 units with a Pacific cumulative grade point average of 3.0 in order to earn the master of science in engineering science degree.

### Core Courses

ENGR 201 Techniques in Research 3

Select one of the following Math or Computational Science Elective: 3

ENGR 219 Numerical Methods for Engineering

ENGR 250 Probability and Statistics for Engineering and Computer Science

Breadth Elective (one from approved list for concentration) 3-4

Select one of the following options: 6-9

#### A) Thesis Option

ENGR 295 Graduate Seminar

ENGR 299 Thesis

#### B) Project Option

ENGR 291 Graduate Independent Study

ENGR 297 Graduate Research

#### C) Directed Experiential Learning Option

ENGR 281 Directed Experiential Learning

#### D) Course Work Option

Courses approved by advisor as coherent plan

### Concentration Requirements

ENGR 292 Managing Science Technology and Innovation 3

Three electives approved by advisor as coherent plan 9-12

## Master of Science in Engineering Science with a concentration in Mechanical Engineering

Students must complete a minimum of 30 units with a Pacific cumulative grade point average of 3.0 in order to earn the master of science in engineering science degree.

### Core Courses

ENGR 201 Techniques in Research 3

Select one of the following Math or Computational Science Elective: 3

ENGR 219 Numerical Methods for Engineering

ENGR 250 Probability and Statistics for Engineering and Computer Science

Breadth Elective (one from approved list for concentration) 3-4

Select one of the following options: 6-9

#### A) Thesis Option

ENGR 295 Graduate Seminar

ENGR 299 Thesis

#### B) Project Option

ENGR 291 Graduate Independent Study

ENGR 297 Graduate Research

#### C) Directed Experiential Learning Option

ENGR 281 Directed Experiential Learning

#### D) Course Work Option

Courses approved by advisor as coherent plan

### Concentration Requirements

ENGR 292 Managing Science Technology and Innovation 3

Three electives approved by advisor as coherent plan 9-12

### Bioengineering Courses

#### BENG 103. Biomaterials. 4 Units.

This course discusses biomaterials and lays the ground work for topics such as mechanical chemical, and thermal properties of replacement materials and tissues. Implantation of materials in the body are studies studied from the biological point of view. Prerequisites: Completion of all Fundamental Skills; ENGR 045; BIOL 061 or BENG 063 with a "C-" or better.

#### BENG 108. Engineering Physiology. 4 Units.

This course is a lecture and lab-based study of the major organ systems in the human body. Lectures cover basic anatomy, function and regulation of the nervous, endocrine, sensory, muscular, cardiovascular, respiratory, and excretory systems, with the underlying theme of maintaining homeostasis while responding to physiological disturbances. Lectures also compare each system to abiotic models, and utilize basic principles of physics, math, and chemistry. Lab exercises demonstrate basic physiological processes and emphasize techniques of instrument-based data acquisition and data presentation. Students also create virtual instruments (VIs) that use the program LabVIEW and apply the VIs in a final independent lab project. Prerequisites: Completion of all Fundamental Skills; BIOL 051 or BENG 053; BIOL 061 or BENG 063; CHEM 025 all with a "C-" or better or permission of instructor.

**BENG 124. Biomechanics. 4 Units.**

This course focuses on the application of engineering mechanics to anatomical and medical applications with emphasis on tissue mechanics. Examples of engineering concepts used include statics, dynamics, optimization theory, composite beam theory, viscoelasticity, beam-on-elastic-foundation theory, Hertz contact theory, and materials analyses. The course is ideal for those interested in biomechanical engineering, including those wishing to further develop technical skills in mechanical engineering, and those interested in addressing contemporary engineering design and analysis problems of medical relevance. Aspiring students towards the health science professions are strongly encouraged enroll in this course. Prerequisite: Completion of all Fundamental Skills and ENGR 121 with a "C-" or better.

**BENG 171. Bioelectricity. 4 Units.**

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: Completion of all Fundamental Skills; BIOL 061 or BENG 063; ECPE 041/ECPE 041L; MATH 055 all with a "C-" or better or permission of instructor.

**BENG 191. Independent Study. 1-4 Units.**

Special individual projects are undertaken under the direction of one or more faculty members who are knowledgeable in the particular field of study. Permission of department chairperson and faculty members involved.

**BENG 195. Senior Project. 4 Units.**

Students apply basic sciences, mathematics and engineering topics to meet a stated objective. Students also 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. The course includes both written and oral reports and presentations. Permission of instructor.

**BENG 197. Undergraduate Research. 1-4 Units.**

This course is applied or basic research in bioengineering under faculty supervision. Permission of faculty supervisor and department chair. Students must be in good academic standing.

**BENG 202. Biosensor. 3 Units.**

This course provides a comprehensive introduction to the basic features of biosensors. Discussion topics include types of most common biological agents and the ways in which they can be interfaced with a variety of transducers to create a biosensor for biomedical applications. The focus is on optical biosensors and systems (e.g. fluorescence spectroscopy, microscopy). Prerequisites: MS in Engineering Science major and BENG 103 or permission of instructor.

**BENG 205. Advanced Biomaterials. 3 Units.**

Students study the strategies and fundamental bioengineering design criteria behind the development of cell-based tissue substitutes, artificial skin, muscle, tendons, bone, and extracorporeal systems that use either synthetic materials or hybrid (biological-synthetic) systems. Topics include biocompatibility, biological grafts and bioreactors. Prerequisites: MS in Engineering Science major and BENG 103.

**BENG 291. Graduate Independent Study. 1-4 Units.**

Special individual projects are undertaken under the direction of one or more faculty. Prerequisite: MS in Engineering Science major or permission of instructor.

**BENG 293. Special Topics. 1-4 Units.**

Special courses are organized and offered from time to time to meet the needs or interests of a group of students.

**BENG 297. Graduate Research. 1-4 Units.**

Approval by the faculty supervisor and the department chairperson in required. Prerequisites: MS in Engineering Science major or permission of instructor.

**BENG 299. Thesis. 1-6 Units.**

Minimum of six units is required for Thesis Option students. Prerequisites: MS in Engineering Science major and permission of the research advisor.

## Civil Engineering Courses

**CIVL 100. Introduction to Structural Engineering. 4 Units.**

Introduction to the theory and applications of structural analysis and design. Topics include: determination of loads, analysis of beams, trusses and frames, influence line and indeterminate structures. Prerequisites: Completion of all Fundamental Skills, ENGR 019, ENGR 121 with a "C-" or better (Spring).

**CIVL 130. Fluid Mechanics I. 3 Units.**

Students study the physical properties of fluids, statics and dynamics of incompressible fluids that include hydrostatics, conservation of mass, energy and momentum principles, laminar and turbulent flow with emphasis on pipe flow. Prerequisite: Completion of all Fundamental Skills and ENGR 120 with a "C-" or better. Corequisite: CIVL 130L.

**CIVL 130L. Fluid Mechanics I Lab. 1 Unit.**

Experimental analysis of concepts are discussed in CIVL 130. Prerequisite: Completion of all Fundamental Skills and ENGR 120 with a "C-" or better. Corequisite: CIVL 130.

**CIVL 132. Introduction to Environmental Engineering. 4 Units.**

Students are introduced to the physical, chemical, and biological processes associated with water quality in natural environments and engineering systems. Topics include operation and design of water and wastewater treatment facilities as well as the occurrence, behavior and control of indoor and regional air pollution. Laboratory is included. Prerequisites: Completion of all Fundamental Skills, CIVL 015, CIVL 060 with a "C-" or better.

**CIVL 133. Water Resources Engineering. 4 Units.**

Students examine hydraulic analysis and design that include pipe flow and open channel flow. Topics include elements of the hydrological cycle, deterministic and probabilistic analysis of rainfall-runoff data for estimation and design, and the application of computers in hydrologic and hydraulic design. Laboratory is included. Prerequisites: Completion of all Fundamental Skills, CIVL 015, CIVL 130 with a "C-" or better.

**CIVL 134. Groundwater. 4 Units.**

Students study groundwater hydraulics in confined and unconfined aquifers. Topics include the processes controlling that control the transport and fate of minerals and contaminants in subsurface environments, computer simulation of groundwater flow and contaminant movement, and strategies for removing and controlling contaminant plumes in aquifers. Prerequisites: Completion of all Fundamental Skills; CIVL 061, CIVL 130; MATH 057 all with a "C-" or better.

**CIVL 136. Design of Water Quality Control Facilities. 4 Units.**

This advanced course covers the physical, chemical, and biological processes that are involved in the design of water and wastewater treatment plant facilities as well as applicable design standards and regulations. Prerequisites: Completion of all Fundamental Skills, CIVL 130, CIVL 132 with a "C-" or better.

**CIVL 138. Solid Waste Systems Design and Management. 3 Units.**

This is an introductory course to solid waste systems, that analyzes of problems associated with storage, collection, transport, processing, and disposal of solid wastes. Students review of current and expected regulatory requirements and the planning and design of solid waste management components that include systems and processes for solid waste prevention, recycling/composting, incineration, and landfilling. Prerequisite: Completion of all Fundamental Skills and CIVL 132 with a "C-" or better.

**CIVL 140. Introduction to Geotechnical Engineering. 4 Units.**

This introductory course covers the fundamentals of geotechnical engineering, that includes the characterization of soils and their behavior as an engineering material. Topics, include classification of soils, compaction, permeability, and consolidation. Also covered is design applications that include settlement predictions, strength characterization, soil exploration programs, and an overview of shallow and deep foundations. The course includes laboratory work. Prerequisites: Completion of all Fundamental Skills, CIVL 015, ENGR 121 with a "C-" or better.

**CIVL 141. Earth Structure Design. 4 Units.**

Evaluation of drained and undrained field conditions and the relationship between temporary and permanent design conditions over time. In-situ tests, including SPT and CPT. Analysis of lateral stresses in soil masses. Design of slopes, cantilever retaining walls, sheet piles, anchored bulkheads, and mechanically-stabilized earth walls. Design includes analysis of effects of water and seismic conditions, including liquefaction. Prerequisite: CIVL 140.

**CIVL 145. Engineering Geology. 4 Units.**

This introductory course to is the study of geology in which geologic principles, data and techniques are applied to civil engineering problems. Also listed as GEOS 145. Prerequisites: Completion of all Fundamental Skills; GEOS 051 or GEOS 061 or CIVL 140 with a "C-" or better.

**CIVL 150. Transportation Engineering. 4 Units.**

Students study the considerations and procedures in the planning, design, and operation of various transportation systems with primary emphasis on highways. Prerequisites: Completion of all Fundamental Skills. Junior or Senior standing.

**CIVL 151. Heavy Construction Methods. 4 Units.**

An introduction to the areas of construction engineering and construction management. Construction engineering topics include construction processes and construction econometrics. Construction management topics include contracting, estimating, planning, bidding, and scheduling. Prerequisite: Completion of all Fundamental Skills. Junior or Senior standing.

**CIVL 160. Structural Analysis. 3 Units.**

Students analyze the behavior of trusses and framed structures under gravity and lateral loads. Other topics include analysis of shear walls, the use of structural analysis software, and the buckling of frames. Prerequisites: Completion of all Fundamental Skills; CIVL 100 and MATH 057 with a "C-" or better.

**CIVL 161. Matrix Analysis of Engineering Systems. 4 Units.**

Students analyze structures by matrix methods, that include the direct stiffness method for trusses and frames. The course introduces students to the finite element method for plane stress and plane strain. Prerequisites: Completion of all Fundamental Skills and CIVL 160 with a "C-" or better. Recommended: MATH 110.

**CIVL 165. Structural Steel Design. 4 Units.**

Students study the design of steel structural members, specifically tension, compression, flexural, and beam-column elements and connections to satisfy design code requirements. Prerequisite: Completion of all Fundamental Skills. Prerequisite may be taken concurrently: CIVL 100 with a "C-" or better.

**CIVL 166. Reinforced Concrete Design. 4 Units.**

Students study the design and proportioning of structural members, specifically beams, columns, one-way slabs, footings, and walls to satisfy design criteria for reinforced concrete systems. Prerequisite: Completion of all Fundamental Skills. Prerequisite may be taken concurrently: CIVL 100 with a "C-" or better.

**CIVL 167. Earthquake Engineering. 4 Units.**

Students study the determination of loads on structures due to earthquakes. Topics include an overview of seismology, methods of estimating equivalent static lateral forces, response spectrum and time history analysis, and concepts of mass, damping and stiffness for typical structures. Other topics include design for inelastic behavior, numerical solutions, and code requirements. Prerequisites: Completion of all Fundamental Skills and CIVL 100 with a "C-" or better.

**CIVL 171. Water and Environmental Policy. 3 Units.**

This course introduces students to Federal and State of California environmental regulations pertaining to air, water, hazardous wastes, and toxic substances. Topics include an overview of water rights and environmental impact assessment, relevant case studies, and examples of monitoring and enforcement issues. Prerequisite: Completion of all Fundamental Skills. Junior or Senior standing.

**CIVL 173. Sustainable Engineering. 3 Units.**

This interdisciplinary course provides an introduction to principles and practice of sustainable engineering. Topics include the analysis of economic, social, and environmental factors, life cycle assessment, resource use and waste generation in engineering products and processes. The course also examines case studies, readings, and class discussion emphasizes analysis and development of sustainable solutions. Prerequisite: Completion of all Fundamental Skills. Junior or Senior standing.

**CIVL 180. Engineering Synthesis. 4 Units.**

This course is 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. Prerequisites: Completion of all Fundamental Skills; EMGT 170 and 2 of the following: CIVL 100, CIVL 132, CIVL 133, CIVL 140 with a "C-" or better. Senior standing.

**CIVL 191. Independent Study. 1-4 Units.**

Students undertake special individual projects under the direction of one or more faculty members. Permission of department chairperson and faculty member involved.

**CIVL 193. Special Topics. 4 Units.**

Upper division elective subject area based on expertise of faculty members.

**CIVL 197. Undergraduate Research. 1-4 Units.**

This course is applied or basic research in civil engineering under faculty supervision. Permission of faculty supervisor and department chair. Student must be in good academic standing.

**CIVL 231. Surface Water Quality Modeling. 3 Units.**

Application of mass balance principles develop mathematical models that simulate the transport and fate of water quality constituents in rivers, estuaries, and lakes. Numerical methods that solve discrete systems of steady-state and transient equations using Excel and MATLAB are emphasized. Prerequisites: ENGR 019, CIVL 132, MS in Engineering Science major or permission of instructor.

**CIVL 236. Physical and Chemical Treatment Processes. 3 Units.**

Physical and chemical processes found in nature and used in engineered systems to treat water and air. Design of reactors and unit processes incorporate sedimentation, flocculation, precipitation, gas transfer, adsorption, filtration, and disinfection. prerequisites: CIVL 132, MS in Engineering Science major or permission of instructor.

**CIVL 237. Biological Treatment Processes. 3 Units.**

Biological processes occurring naturally and developed in engineered treatment systems. Includes applicable fundamentals of microbiology, microbially-mediated chemical reactions, kinetics, design of suspended growth and fixed-film treatment systems, and nutrient removal. Prerequisites: CIVL 132, MS in Engineering Science major or permission of instructor.

**CIVL 238. Industrial and Hazardous Waste Management. 3 Units.**

Industrial and Hazardous Waste Management and Treatment is an advanced level course on technical aspects concerning the management of chemical and radioactive wastes. The course addresses regulation, management and characterization of industrial wastes, especially hazardous wastes. Emphasis is placed on site characterization, investigation of pathways and transformations, and engineered treatment processes for toxic and reactive industrial materials. Prerequisite: MS in Engineering Science major or permission of instructor.

**CIVL 263. Earthquake Engineering. 3 Units.**

This course is an overview of seismology. Course content includes determination of loads on structures due to earthquakes, methods of estimating equivalent static lateral forces, response spectrum and time history analysis. Other topics include concepts of mass, damping and stiffness for typical structures, design for inelastic behavior. Numerical solutions and code requirements. Prerequisites: MS in Engineering Science major or permission of the faculty member involved.

**CIVL 265. Advanced Structural Engineering. 3 Units.**

Students examine the design of steel structural members that include composite beams, plate girders and connections following the AISC specifications in addition to economy evaluation of building design, and design of frame structures and second order effects. Prerequisites: MS in Engineering Science major and CIVL 165 or permission of instructor.

**CIVL 266. Advanced Reinforced Concrete Design. 3 Units.**

Students study the design and proportioning of structural systems to satisfy design criteria for reinforced concrete and pre-stress design in concrete. Topics include retaining walls, slabs, footing, and other structural members. Prerequisites: CIVL 166 and MS in Engineering Science major or permission of instructor.

**CIVL 267. Design of Timber Structures. 3 Units.**

Students study the design and analysis of timber structures due to gravity, lateral and combined loadings. Both member and connection details are considered. The design procedures, material properties and allowable stress computations are based on UBC, and NDS and other governing standards. Prerequisite: MS in Engineering Science major or permission of the faculty member involved.

**CIVL 275. Microbiology of Engineered Systems. 3 Units.**

An introduction to the concepts of environmental microbiology for upper division undergraduates and graduate students in engineering or environmental sciences who may not possess a strong background in the biological sciences. This course will emphasize the fundamental of microbiology and microbial ecology is described in the context of environmental engineering applications. Concepts relating to energy generation, metabolism and kinetics are emphasized. Prerequisite: MS in Engineering Science major or permission of the instructor.

**CIVL 278. Ecological Engineering. 3 Units.**

This course is a graduate-level introduction to the field of ecological engineering. Topics include the fundamental concepts of ecology and the application of ecological concepts to engineered systems. The course focuses on understanding large-scale biogeochemical cycles, investigating how these cycles have been disrupted in engineering systems, and evaluating tools and alternatives for restoring biogeochemical cycles within engineering systems. The students evaluate and apply the concepts developed in class to the resolution of ecological engineering challenges in example engineered landscapes.

**CIVL 291. Graduate Independent Study. 1-4 Units.**

Special individual projects are undertaken under the direction of one or more faculty. Prerequisite: MS in Engineering Science major or permission of instructor.

**CIVL 293. Special Topics. 1-4 Units.**

Special courses are organized and offered from time to time to meet the needs or interests of a group of students. Prerequisite: MS in Engineering Science major or permission of the instructor.

**CIVL 297. Graduate Research. 1-4 Units.**

Applied or basic research in engineering or computer science under faculty supervision. Approval by the faculty supervisor and the department chairperson is required. Prerequisite: MS in Engineering Science major or permission of instructor.

**CIVL 299. Thesis. 1-6 Units.**

Minimum of six units are required for Thesis Option students. Prerequisites: MS in Engineering Science major and permission of the research advisor.

**Computer Science Courses****COMP 101. Application Development. 4 Units.**

This course develops the skills and techniques required for the creation of contemporary software applications. Contemporary software applications are complex systems that involve the interaction of multiple subsystems that require teams of developers working together for extended periods of time. Topics include teamwork and communication skills, current development methodologies, analysis and design documentation and the use of libraries. This course is intended to prepare students to transition to upper division courses. Prerequisites: Completion of all Fundamental Skills and COMP 053 with a "C-" or better. (Fall, every year).

**COMP 127. Web Applications. 4 Units.**

The World-Wide Web consists of client-server applications operating over the Internet. This course introduces the skills and techniques for designing and developing web applications. Topics include: client-server architectures, web servers and web browsers, server-side programming, client-side programming, form processing, state management and multimedia. Prerequisites: Completion of all Fundamental Skills and COMP 053 with a "C-" or better or permission of instructor. (Fall, even years).

**COMP 129. Software Engineering. 4 Units.**

Students gain practical experience in dealing with medium to large scale software systems. Students learn how current analysis and design methodologies are used to develop the abstractions necessary to understand large systems. Students also learn how such methodologies and abstractions are used to communicate with coworkers and clients about the analysis and design. Because communication is an essential skill in large system development, students are expected to produce documents and presentations of professional quality and depth. Prerequisites: Completion of all Fundamental Skills and COMP 101 with a "C-" or better. (Spring, odd years).

**COMP 135. Human-Computer Interface Design. 3 Units.**

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 to ensure that designs are both useful and useable. Prerequisite: Completion of all Fundamental Skills. Junior standing. (Spring, odd years).

**COMP 137. Parallel Computing. 3 Units.**

Parallel 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 parallel computation. Students are expected to design and implement an original parallel application as a term project. Prerequisite: Completion of all Fundamental Skills and COMP 053 with a "C-" or better. (Spring, even years).

**COMP 141. Programming Languages. 4 Units.**

Topics in 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, compilers architecture, programming paradigms, and comparison of programming languages and environments. Prerequisites: Completion of Fundamental Skills and COMP 053 with a "C-" or better. (Spring, every year).

**COMP 147. Computing Theory. 4 Units.**

Students study automata, formal languages and computability. Topics include finite state automata, regular languages, pushdown automata, context-free languages, Turing machines; decidability, reducibility, and time complexity that includes NP-completeness, intractability. Prerequisites: Completion of all Fundamental Skills; COMP 047 or ECPE 071 with a "C-" or better. (Fall, every year).

**COMP 151. Artificial Intelligence. 3 Units.**

Students study basic Concepts, techniques and tools used in Artificial Intelligence. Topics include knowledge representation, search techniques, and problem solving strategies. Also listed as ECPE 151. Prerequisites: Completion of all Fundamental Skills and COMP 051 with a "C-" or better. (Fall, odd years).

**COMP 153. Computer Graphics. 3 Units.**

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. Also listed as ECPE 153. Prerequisites: Completion of all Fundamental Skills and COMP 053 with a "C-" or better. (Fall, every year).

**COMP 155. Computer Simulation. 4 Units.**

This course explores digital simulation, in which a model of a system is executed on a computer. The course focuses on modeling methodologies, mathematical techniques for implementing models, and statistical techniques for analyzing the results of simulations. Students develop simulations use both simulation development toolkits and general-purpose programming languages. Also listed as EMGT 155. Prerequisites: Completion of all Fundamental Skills; MATH 037 or MATH 039; MATH 045 or MATH 051, COMP 051 or ENGR 019 with a "C-" or better. (Fall, even years).

**COMP 157. Design and Analysis of Algorithms. 4 Units.**

Topics for this course 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: Completion of all Fundamental Skills; COMP 047 or COMP 053; MATH 053 with a "C-" or better or permission of instructor. (Fall, every year).

**COMP 159. Computer Game Technologies. 4 Units.**

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. Prerequisite: Completion of all Fundamental Skills and COMP 101 with a "C-" or better. (Fall, odd years).

**COMP 163. Database Management Systems. 4 Units.**

A database management system (DBMS) is a computer application designed for the efficient and effective storage, access and update of large volumes of data. This course look at such systems from two perspectives. The user-center perspective focuses on how a DBMS is used to build support for a data intensive application. This perspective includes examination of common data models, query languages and design techniques. The system implementation perspective focuses on the policies, algorithms and data structures used to design and implement a DBMS. Prerequisites: Completion of all Fundamental Skills and COMP 101 with a "C-" or better. (Spring, even years).

**COMP 173. Operating Systems. 4 Units.**

Students are introduced 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. Students also study process synchronization that uses primitive and high-level languages, virtual memory management, file systems, system protection, and distributed systems. Prerequisites: Completion of all Fundamental Skills; COMP 053 and ECPE 170 with a "C-" or better or permission of instructor. (Fall, every year).

**COMP 175. System Administration and Security. 3 Units.**

Students are introduced to an operating system from an administrator's standpoint. Topics include installation is considered with the proper allocation of disk resources, maintaining the operating system and various subsystems, security issues that include server hardening, host firewalls and network security issues. Students also study account administration in a networked environment, change management and intrusion detection. Prerequisites: Completion of all fundamental skills and familiarity with console-based operating systems commands. Junior standing. (Fall, every year).

**COMP 177. Computer Networking. 4 Units.**

Topics examined in this course include computer networks and the internet, LAN and WAN architectures, and packet switched networks and routing. Students learn about the 7-layer OSI model and internet protocol stack, socket programming and client/server systems, wireless and security. The course includes a laboratory. Also listed as ECPE 177. Prerequisites: Completion of all Fundamental Skills; COMP 053 and ECPE 170 with a "C-" or better. Junior or Senior standing. (Fall, every year).

**COMP 178. Computer Network Security. 3 Units.**

This course is an examination of the pervasive security threats related to the Internet, data communications and networking. Topics include TCP/IP protocols, authentication, encryption, malware, cybercrime, and social engineering. Emphasis is on computer and network attack methods, their detection, prevention and analysis, and the integration of the tools and techniques employed in this effort. Includes lab. Prerequisites: Completion of all Fundamental Skills and ECPE 170 or COMP 175 with a "C-" or better. (Spring, every year).

**COMP 187. Internship in Computer Science. 1-4 Units.**

This internship course offers cooperative employment in a professional computer science environment. The internship requires satisfactory completion of the work assignment and written reports. Prerequisites: Completion of all Fundamental Skills; COMP 101 and ENGR 025 with a "C-" or better. Grading is Pass/No Credit only.

**COMP 188. Senior Project I. 2 Units.**

Students establish design objectives and criteria, analyze solution alternatives and evaluate design performance for a medium scale software application. Results include analysis and design documents and a presentation of the system design. Prerequisite: Completion of all Fundamental Skills. Senior standing.

**COMP 189. Senior Project II. 2 Units.**

This course is a continuation of Senior Project I. Students implement, test, and evaluate their software application. Results include final design documents, test reports and a presentation and demonstration of the project. Prerequisite: Completion of all Fundamental Skills and COMP 188 with a "C-" or better.

**COMP 191. Independent Study. 1-4 Units.**

Students create student-initiated projects that cover topics not available in regularly scheduled courses. A written proposal that outlines the project and norms for evaluation must be approved by the department chairperson.

**COMP 197. Undergraduate Research. 1-4 Units.**

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. Permission of Undergraduate Research Coordinator.

**COMP 241. Programming Language Semantics. 3 Units.**

This course examines a variety of modern programming languages from a theoretical perspective. The focus is on languages designed to support particular novel or interesting concepts. Formal techniques for the specification of the semantics of languages are used to compare and contrast languages. Prerequisites: COMP 141 and MS in Engineering Science major.

**COMP 251. Multi-Agent Systems. 3 Units.**

An introduction to statistical machine learning that covers practical applications of machine learning as well as theoretical concepts like PAC learning and Occam's Razor. Topics include: decision tree learning, artificial neural networks, Bayesian learning, reinforcement learning, genetic algorithms, Markov decision processes and clustering. Prerequisites: COMP 053, MS in Engineering Science major or instructor approval.

**COMP 253. Virtual Reality. 3 Units.**

This course provides an overview of the field of virtual reality (VR). Topics include stereoscopic display, force feedback and haptic simulation, viewer tracking, virtual worlds, 3D user interface issues, augmented reality, and contemporary applications of VR in simulation, teaching and training. Students gain practical experience designing a virtual world. Prerequisites: COMP/ECPE 153 or MS in Engineering Science major.

**COMP 259. Character Animation. 3 Units.**

Investigation of algorithmic and data-driven techniques for directing the motion of computer generated characters, with a focus on human-like motion. Coursework includes analysis of published research, programming assignments and an original research project/investigation. Prerequisite: MS in Engineering Science major or permission of the instructor.

**COMP 291. Graduate Independent Study. 1-4 Units.**

Special individual projects are undertaken under the direction of one or more faculty. Prerequisite: MS in Engineering Science major or permission of instructor.

**COMP 293. Special Topics. 1-4 Units.**

Special courses are organized and offered from time to time to meet the needs or interests of a group of students. Prerequisite: MS in Engineering Science major or permission of the instructor.

**COMP 297. Graduate Research. 1-4 Units.**

Applied or basic research in engineering or computer science under faculty supervision. Approval by the faculty supervisor and the department chairperson is required. Prerequisite: MS in Engineering Science major or permission of instructor.

**COMP 299. Thesis. 1-6 Units.**

Minimum of six units is required for Thesis Option students. Prerequisites: MS in Engineering Science major and permission of the research advisor.

**Electrical Computer Engr Courses****ECPE 121. Systems Analysis. 4 Units.**

Students analyze the continuous and discrete time systems in the time and frequency domains. Topics include Fourier, Laplace, and z-transforms, convolution, difference equations, Zero-input and zero-state components. Prerequisites: Completion of all Fundamental Skills and ECPE 041 with a "C-" or better. Prerequisite, may be taken concurrently: MATH 057 with a "C-" or better.

**ECPE 126. Digital Signal Processing. 4 Units.**

Analysis of discrete-time signals and systems using z transforms and Fourier transforms. Digital filter design and real-time implementation. Applications to areas such as communications, radar, image processing. Includes laboratory. Prerequisites: ECPE 071, ECPE 071L, ECPE 121 with a "C-" or better.

**ECPE 127. Random Signals. 3 Units.**

This course is an introduction to probability and statistics in engineering applications. Students examine random signals in the time and frequency domains, linear systems with random inputs, and noise sources and modeling of noisy networks. Prerequisite: Completion of all Fundamental Skills. Prerequisite, may be taken concurrently: ECPE 121 with a "C-" or better.

**ECPE 131. Electronics. 3 Units.**

This course introduces students to semiconductor physics. Topics include modeling, analysis, and simulation of analog and digital circuits containing diodes, bipolar junction transistors, and MOSFETs. Other topics include analysis and design of single stage amplifiers, frequency response of amplifiers, gain, bandwidth, DC biasing, and small signal analysis of amplifiers. Prerequisites: Completion of all Fundamental Skills; ECPE 041, ECPE 041L, ECPE 071, ECPE 071L; MATH 055, PHYS 055, completion of CHEM 024 or CHEM 025 or CHEM 027 or BIOL 051 or BIOL 061 or BENG 053 or BENG 063 with a "C-" or better. Corequisite: ECPE 131L.

**ECPE 131L. Electronics Lab. 1 Unit.**

Students examine the use of standard electronic test equipment and simulation tools to analyze, design, and test electronic circuits. Emphasis on analog circuits. Prerequisites: Completion of all Fundamental Skills; ECPE 041 and ECPE 041L; MATH 055, PHYS 055, and the Fundamental Chemistry Skills requirement or completion of CHEM 023 with a "C-" or better. Corequisite: ECPE 131.

**ECPE 132. Advanced Electronics. 4 Units.**

Students study multistage amplifiers. Topics include amplifier design to meet gain and bandwidth specifications, feedback and stability of electronic systems, operational amplifier circuits, active filters, oscillators and wave shaping circuits, analog to digital converters and design uses off-the-shelf IC components. The course includes a laboratory. Prerequisites: Completion of all Fundamental Skills; ECPE 121, ECPE 131, ECPE 131L with a "C-" or better. (Fall).

**ECPE 135. Power Electronics. 4 Units.**

Switch-Mode DC-DC converters, Feedback control of converters, Rectifiers and power factor correction circuits, switch mode DC power supplies, applications to motor control and renewable energy integration to the grid. Includes laboratory. Prerequisites: Completion of all Fundamental Skills; ECPE 131 and ECPE 131L with a "C-" or better. Prerequisite may be taken concurrently: ECPE 121 with a "C-" or better.

**ECPE 136. VLSI Design. 4 Units.**

Students examine issues in VLSI design. Topics include logic families, sizing, timing models, fabrication, layout, high speed and low power design tradeoffs, circuit simulation and device modeling. Prerequisites: Completion of all Fundamental Skills; ECPE 071, ECPE 071L, ECPE 131, ECPE 131L with a "C-" or better. (Spring odd years).

**ECPE 144. Applied Electromagnetics. 4 Units.**

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 are examined. Prerequisites: Completion of all Fundamental Skills; PHYS 055, MATH 057, ECPE 041 with a "C-" or better.

**ECPE 151. Artificial Intelligence. 3 Units.**

Students study basic concepts, techniques and tools used in Artificial Intelligence. Topics include knowledge representation, search techniques, and problem solving strategies. Also listed as COMP 151. Prerequisites: Completion of all Fundamental Skills and COMP 051 with a "C-" or better.

**ECPE 153. Computer Graphics. 3 Units.**

this course introduces students to two and three dimensional computer graphics. Topics include basic representations and mathematical concepts, object modeling, viewing, lighting and shading. Programming that uses OpenGL and other computer graphics applications are examined. Also listed as COMP 153. Prerequisites: Completion of all Fundamental Skills and COMP 053 with a "C-" or better.

**ECPE 155. Autonomous Robotics. 4 Units.**

This course is an overview of the design of autonomous robotics. Students study architectures for robot organization and control, configurations of fixed and mobile robots, sensors and actuators. Students also study the design of algorithms and knowledge representations. Prerequisites: Completion of all Fundamental Skills; COMP 053 and ECPE 172 with a "C-" or better or permission of instructor.

**ECPE 161. Automatic Control Systems. 4 Units.**

Students study component and system transfer functions, open and closed loop response; stability criteria; applications to engineering systems. This course includes a laboratory. Prerequisites: Completion of all Fundamental Skills and ECPE 121 with a "C-" or better.

**ECPE 162. Communication Systems. 4 Units.**

Students examine signal characterization in time and frequency domains. Topics include baseband communication, pulse code modulation, multiplexing, complex envelope representation of bandpass signals. AM, FM, and digital modulations. Students also examine applications to radio, television, telephone, and cellular phone systems. A laboratory is included. Prerequisites: Completion of all Fundamental Skills and ECPE 121 with a "C-" or better. (Spring).

**ECPE 163. Energy Conversion. 4 Units.**

Students study three phase power systems. Topics include magnetic circuits, transformers, rotating machines: DC, induction, and synchronous machines as well as equivalent circuits and characteristic curves of transformers and rotating machines, renewable energy sources and technologies. The course includes a laboratory. Prerequisites: Completion of all Fundamental Skills; ECPE 041 and ECPE 041L; PHYS 055 with a "C-" or better.

**ECPE 165. Power System Analysis. 3 Units.**

Students study electrical power generation and transmission, Three-phase systems, power system component models, per-unit system and single line diagrams, power flow analysis. Prerequisites: Completion of all Fundamental Skills and ECPE 041 with a "C-" or better. Junior standing.

**ECPE 170. Computer Systems and Networks. 4 Units.**

This course is a comprehensive and holistic examination of the modern computing environment. Students gain an understanding of the various hardware and software components that enable computers and networks to process information and execute applications. Students learn to apply this knowledge in the development of efficient and robust software applications. Prerequisites: Completion of all Fundamental Skills; ECPE 071, COMP 053 with a "C-" or better.

**ECPE 172. Microcontrollers. 4 Units.**

Students study the design and implementation of digital monitoring and control systems that use micro-controllers. Topics include hardware and software development, interfacing input and output devices, assembly and C programming as well as representative applications. The course includes a laboratory. Prerequisites: Completion of all Fundamental Skills; ECPE 071 and ECPE 071L with a "C-" or better.

**ECPE 173. Computer Organization and Arch. 3 Units.**

The objective of this course is to give students an understanding of how a complete modern computer system operates. Students learn about design of control, datapath and arithmetic-logic units. Other topics include pipelining, memory hierarchy and assembly language programming. Prerequisites: Completion of all Fundamental Skills; ECPE 071, ECPE 071L, ECPE 170 with a "C-" or better.

**ECPE 174. Advanced Digital Design. 4 Units.**

Students learn how to analyze, design, and implement synchronous state machines using programmable logic devices. Topics include CAD-based simulation and development that use schematic capture and hardware description languages, and representative applications. The course includes a laboratory. Prerequisites: Completion of all Fundamental Skills; ECPE 071 and ECPE 071L with a "C-" or better.

**ECPE 177. Computer Networking. 4 Units.**

Students study computer networks and the Internet. Topics include LAN and WAN architectures, packet switched networks and routing, the 7-layer OSI model and Internet protocol stack, socket programming and client/server systems as well as wireless security. The course includes a laboratory. Also listed as COMP 177. Prerequisites: Completion of all Fundamental Skills; COMP 053 and ECPE 170 with a "C-" or better. Junior or Senior standing.

**ECPE 178. Computer Network Security. 3 Units.**

This course is an examination of the pervasive security threats related to the Internet, data communications and networking. Topics include TCP/IP protocols, authentication, encryption, malware, cybercrime, and social engineering. Emphasis is on computer and network attack methods, their detection, prevention and analysis, and the integration of the tools and techniques employed in this effort. Includes lab. Prerequisites: Completion of all Fundamental Skills and ECPE 170 or COMP 175 with a "C-" or better.

**ECPE 191. Independent Study. 1-4 Units.**

Special individual projects are undertaken under the direction of one or more faculty members knowledgeable in the particular field of study. Permission of department chairperson and faculty members involved.

**ECPE 194. Core Assessment Exam (CAE). 0 Units.**

Each student in the ECPE department is required to take the Core Assessment Exam (CAE). The CAE tests students knowledge of the material covered in the core courses and in basic math. Prerequisites: Completion of all Fundamental Skills; ECPE 041, ECPE 041L, ECPE 071, ECPE 071L, MATH 055, PHYS 055, COMP 051 with a "C-" or better.

**ECPE 195. Senior Project I. 2 Units.**

This course instructs students in the application of design processes and teamwork. Topics include 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. Students are given instruction and practice in documentation and as well as oral and written communications skills. Prerequisites: Completion of all Fundamental Skills; ECPE 071, ECPE 071L, ECPE 121, ECPE 131, ECPE 131L with a "C-" or better. Prerequisite, may be taken concurrently: ECPE 194 with a "C-" or better.

**ECPE 196. Senior Project II. 2 Units.**

This capstone design course 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. Prerequisites: Completion of all Fundamental Skills; ECPE 194 and ECPE 195 with a "C-" or better.

**ECPE 197. Undergraduate Research. 1-4 Units.**

This course offers applied or basic research in electrical and/or computer engineering under faculty supervision. Permission of faculty supervisor and department chair. The student must be in good academic standing.

**ECPE 225. Digital Signal Processing with Applications. 3 Units.**

Topics include discrete time signals, systems, spectral analysis (DTFT), the Discrete Fourier Transform and the Fast Fourier Transform algorithm, decimation and interpolation, multi-rate signal processing, and filtering random signals. Additional course content is speech processing, speech models and characteristics, short time Fourier analysis, linear predictive coding. Image processing: 2D signals and systems, image coding, image enhancement is also addressed. Prerequisites: ECPE 121 or equivalent and MS in Engineering Science major or permission of instructor.

**ECPE 233. Quantum and Nano Devices. 3 Units.**

Students study advanced topics related to recent development of the emerging field of nanoelectronics where the feature lengths of the electron devices are of the order of several nanometers. They also study transport phenomenon in nano-structures that use a quantum atomistic transport approach. Topics include: quantum confined effects, nanofabrication, quantum wells, quantum wires, quantum dots, and quantum optoelectronic devices. The purpose of this course is to prepare the framework for analyzing, modeling, and designing of these non-scale electron devices. Prerequisites: familiarity with MATLAB, light familiarity with physics of semiconductor devices, light exposure to quantum physics, ability to solve second order differential equations, and an exposure to complex analysis, MS in Engineering Science major or permission of the instructor.



**ECPE 253. Advanced Computer Graphics. 3 Units.**

Students study advanced topics in computer-generated graphics such as procedural modeling, surface simplification, shaders, texture synthesis and mapping, volume rendering, ray tracing, photon mapping, image-based rendering techniques, non-photorealistic rendering, 3D hardware/GPUs and animation. Course includes programming projects and presentation of research topics. prerequisites: COMP 153 or ECPE 153, C programming experience (C++ or Java is acceptable, but students are expected to program in C), MS in Engineering Science major or permission of the instructor.

**ECPE 263. Recent Topics in Renewable Energy. 3 Units.**

Recent Trends in global warming and the rising cost of energy has resulted in significant interest in renewable energy sources that include solar thermal, solar photovoltaics, hydrogen fuel cells, biomass, geothermal, wind, hydraulic, and hybrid technologies. This course is a survey of these energy sources and covers the theory, economic feasibility, current level of technological development, renewability, abundance, and environmental impacts of the renewable sources and compares them to the non-renewable sources which include oil, gas, coal, nuclear, and other current energy technologies. The emphasis is given to research in these fields by the students' term papers and projects. Permission of instructor.

**ECPE 291. Graduate Independent Study. 1-4 Units.**

Special individual projects are undertaken under the direction of one or more faculty. Prerequisite: MS in Engineering Science major or permission of instructor.

**ECPE 293. Special Topics. 1-4 Units.**

Special courses are organized and offered from time to time to meet the needs or interests of a group of students. Prerequisite: MS in Engineering Science major or permission of the instructor.

**ECPE 297. Graduate Research. 1-4 Units.****ECPE 299. Thesis. 1-6 Units.**

Minimum of six units is required for Thesis Option students. Prerequisites: MS in Engineering Science major and permission of the research advisor.

## Engineering Management Courses

**EMGT 155. Computer Simulation. 4 Units.**

This course explores digital simulation in which a model of a system is implemented and executed on a computer. The course focuses on modeling methodologies, mathematical techniques for implementing models, and statistical techniques for analyzing the results of simulations. Students develop simulations that use both simulation development toolkits and general-purpose programming languages. Also listed as COMP 155. Prerequisites: Completion of all Fundamental Skills; MATH 037 or MATH 039; MATH 045 or MATH 051, COMP 051 or ENGR 019 with a "C-" or better.

**EMGT 170. Engineering Administration. 4 Units.**

This course examines decision-making based upon engineering economy studies. This area covers techniques for economic evaluation of alternatives that include time value of money, risk cost, 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. Prerequisites: Completion of all Fundamental Skills.

**EMGT 172. Engineering Economy. 3 Units.**

This course examines decision-making based upon engineering economy studies. This course covers techniques for economic evaluation of alternatives that includes time, value of money, risk cost, effects of taxation, monetary inflation, compound interest calculations, minimum attractive rate of return, capitol budgeting, break-even analysis, sensitivity analysis and risk analysis. Prerequisite: Completion of all Fundamental Skills.

**EMGT 174. Engineering Project Management. 3 Units.**

Students study the fundamentals of project management that are used in estimating, planning, coordinating and controlling engineering projects. Topics include fundamentals of specifications and contracts, and the scheduling of projects. Prerequisites: Completion of all Fundamental Skills.

**EMGT 176. Systems Engineering Management. 4 Units.**

This course provides an introduction to the concepts and process 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 systems development, operations and support. Prerequisites: Completion of all Fundamental Skills; MATH 039 and MATH 055 with a "C-" or better or permission of instructor.

**EMGT 191. Independent Study. 1-4 Units.**

Special individual projects are undertaken under the direction of one or more faculty members knowledgeable in the particular field of study. Permission of faculty member involved. The student must be in good academic standing.

**EMGT 195. Engineering Management Synthesis. 4 Units.**

The capstone course is 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. Prerequisites: Completion of all Fundamental Skills.

**EMGT 197. Undergraduate Research. 1-4 Units.**

This course offers applied or basic research in focused topics within Engineering Management under faculty supervision. Permission of faculty supervisor and department chair.

**EMGT 250. Decision Techniques in Engineering. 3 Units.**

This course is designed to introduce fundamental and advanced decision techniques applicable to engineering and business processes. The techniques discussed are applicable to complex problems in both professional and personal situations. The tools and techniques address deterministic and stochastic problems, trade-offs, no-linear preferences and group decision making. Class discussions develop a theoretical framework as foundation for practical application within the organization. Prerequisites: MS in Engineering Science major and ENGR 250.

**EMGT 291. Graduate Independent Study. 1-4 Units.**

Special individual projects are undertaken under the direction of one or more faculty. Prerequisite: MS in Engineering Science major or permission of instructor.

**EMGT 293. Special Topics. 1-4 Units.**

Special courses are organized and offered from time to time to meet the needs or interests of a group of students. Prerequisite: MS in Engineering Science major or permission of the instructor.

**EMGT 297. Graduate Research. 1-4 Units.**

Approval by the faculty supervisor and the department chairperson is required. Prerequisite: MS in engineering Science major and permission of instructor.

**EMGT 299. Thesis. 1-6 Units.**

Minimum of six units is required for Thesis Option students. Prerequisites: MS in Engineering Science major and permission of the research advisor.

## General Engineering Courses

**ENGR 110. Instrumentation and Experimental Methods. 3 Units.**

Students study experimental techniques in the measurement of quantities such as biopotentials, force, pressure, sound, flow, temperature, strain and motion. Topics include statistical analysis and errors in measurement,; data analysis and transmission. Students also use of instruments in the laboratory, and prepare a measurement project. Prerequisites: Completion of all Fundamental Skills; MATH 057 and ENGR 121 with a "C-" or better or permission of instructor.

**ENGR 120. Engineering Mechanics II (Dynamics). 3 Units.**

Students examine the fundamental principles of particles and bodies in motion under the action of external forces. Prerequisites: Completion of all Fundamental Skills and ENGR 020 with a "C-" or better.

**ENGR 121. Mechanics of Materials. 4 Units.**

Students study concepts of stress, strain and deformation, and the analysis and design of simple elements of structures and machines. The course introduces the failure theory and energy methods. Prerequisites: Completion of all Fundamental Skills and ENGR 020 with a "C-" or better. Prerequisite, may be taken concurrently: MATH 057 with a "C-" or better.

**ENGR 122. Thermodynamics I. 3 Units.**

Students examine the first and second laws of thermodynamics for open and closed systems. Topics include properties of gases and liquids and ideal gases. Students are also introduced to cycles for power and refrigeration. Prerequisites: Completion of all Fundamental Skills; CHEM 024 or CHEM 025 or CHEM 027; PHYS 053 with a "C-" or better.

**ENGR 181. Professional Practice. 1-18 Units.**

This course offers cooperative employment in a professional engineering environment. Students may register for a variable number of credits that depend upon the length of the work period. The course requires a satisfactory completion of the work assignment and a written report. Grading is on a Pass/Fail basis. Prerequisites: Completion of all Fundamental Skills.

**ENGR 182. Professional Practice. 1-18 Units.**

This course offers cooperative employment in a professional engineering environment. Students may register for a variable number of credits that depend upon the length of the work period. The course requires a satisfactory completion of the work assignment and a written report. Grading is on a Pass/Fail basis. Prerequisites: Completion of all Fundamental Skills.

**ENGR 183. Professional Practice. 1-18 Units.**

This course offers cooperative employment in a professional engineering environment. Students may register for a variable number of credits that depend upon the length of the work period. The course requires a satisfactory completion of the work assignment and a written report. Grading is on a Pass/Fail basis. Prerequisites: Completion of all Fundamental Skills.

**ENGR 184. Professional Practice. 1-18 Units.**

This course offers cooperative employment in a professional engineering environment. Students may register for a variable number of credits that depend upon the length of the work period. The course requires a satisfactory completion of the work assignment and a written report. Grading is on a Pass/Fail basis. Prerequisites: Completion of all Fundamental Skills.

**ENGR 185. Professional Practice. 1-18 Units.**

This course offers cooperative employment in a professional engineering environment. Students may register for a variable number of credits that depend upon the length of the work period. The course requires a satisfactory completion of the work assignment and a written report. Grading is on a Pass/Fail basis. Prerequisites: Completion of all Fundamental Skills.

**ENGR 191. Independent Study. 1-4 Units.****ENGR 201. Techniques in Research. 3 Units.**

Students learn about research design, qualitative and quantitative research, and sources of data. The course will cover data collection procedures, measurement strategies, questionnaire design and content analysis, interviewing techniques, literature surveys; information data bases, probability testing, and inferential statistics. Students will prepare and present a research proposal as part of the course. Prerequisites: MS in Engineering Science major or permission of the instructor.

**ENGR 212. Technology Venturing. 3 Units.**

Science and technology are increasingly driving new product, process and service development throughout the world. Turning a new idea into a useful innovation, however, is challenging. In this course, student teams invent an original technology-based product or process, and evaluate its feasibility from the standpoint of its market, intellectual property, technical, design, and financial potential. Teams also incorporate an international dimension into the feasibility study. At the conclusion of the course, teams present their findings to a panel, who will judge the potential of their new idea, and the team's ability to present their findings in a data based manner.

**ENGR 219. Numerical Methods for Engineering. 3 Units.**

The primary focus is algorithm implementation within the context of engineering applications. Course topics will include: sources of error and error propagation, eigenvalue/eigenvector computation, solution of linear systems via direct or iterative methods and issues of parallel implementation, least squares and approximation of lab/simulation data, solution of non-linear equations, spline interpolation in one and two dimensions, fast Fourier transforms, numerical differentiation and quadrature, and the numerical solution of ordinary and partial differential equations, including an introduction to finite element methods. Whenever appropriate, relevant aspects of parallel computation will be discussed. Prerequisites: MATH 057 or equivalent, some programming experience in any language and MS in Engineering Science major.

**ENGR 250. Probability and Statistics for Engineering and Computer Science. 3 Units.**

Basic axioms of probability models, conditional probabilities and independence, discrete and continuous random variables, multiple random variables and their expected values and variances, models of stochastic processes, noise, stationarity and ergodicity, power spectral densities. Prerequisites: MATH 037 or MATH 039 or MATH 131 or ECPE 127 with a "C-" or better and MS in Engineering Science major.

**ENGR 281. Directed Experiential Learning. 1-6 Units.**

Directed Experiential Learning (DEXL) credit recognizes student attainment of professional as well as technical learning objectives acquired through a Cooperative Education placement. Upon completing the Professional Practice Seminar (School-to-work learning objectives) as well as a minimum of six MSES graduate units, student may accept a Co-op assignment with specific technical learning objectives.

**ENGR 282. Directed Experiential Learning. 1-6 Units.**

Directed Experiential Learning (DEXL) credit recognizes student attainment of professional as well as technical learning objectives acquired through a Cooperative Education placement. Upon completing the Professional Practice Seminar (School-to-work learning objectives) as well as a minimum of six MSES graduate units, student may accept a Co-op assignment with specific technical learning objectives.

**ENGR 283. Directed Experiential Learning. 1-6 Units.**

Directed Experiential Learning (DEXL) credit recognizes student attainment of professional as well as technical learning objectives acquired through a Cooperative Education placement. Upon completing the Professional Practice Seminar (School-to-work learning objectives) as well as a minimum of six MSES graduate units, student may accept a Co-op assignment with specific technical learning objectives.

**ENGR 290. Engineering Project Management and Leadership. 3 Units.**

This course is directed to the graduate student who has a basic knowledge of project management but seeks to explore the human side and strategic aspects of project management. The course introduces and describes the skills, qualities and attributes needed to successfully lead projects. Among the topics discussed are management styles, strategies, systems engineering, interpersonal competencies and other advanced topics not usually covered in a basic course on project management. Prerequisites: MS in Engineering Science major and EMGT 174.

**ENGR 291. Graduate Independent Study. 1-4 Units.**

Special individual projects are undertaken under the direction of one or more faculty. Prerequisite: MS in Engineering Science or permission of instructor.

**ENGR 292. Managing Science Technology and Innovation. 3 Units.**

This course provides students with a fundamental understanding of research and development organizations and their categories, and elements needed for a productive research organization, organization effectiveness, managing conflicts in organizations, dealing with diversity in research and scientific organizations. Additional topics include strategic planning, motivation and leadership in research and innovation, the innovation process, technology transfer, and science policy and ethics in science and engineering. Ethics and the Impact of Technology on Society is also addressed. The course has two hours of lecture and one hour of discussion per week. Prerequisite: MS in Engineering Science major or permission of instructor.

**ENGR 293. Special Topics. 1-4 Units.**

Special courses are organized and offered from time to time to meet the needs or interests of a group of students. Prerequisite: MS in Engineering Science major or permission of the instructor.

**ENGR 295. Graduate Seminar. 1 Unit.**

This course is a graduate paper-reading seminar. Students are expected to read classic and current technical papers and actively participate in class discussion. Each student presents at least one paper per semester. Prerequisite: MS in Engineering Science major.

**ENGR 297. Graduate Research. 1-4 Units.**

Approval by the faculty supervisor and the department chairperson is required. Prerequisite: MS in Engineering Science major or permission of instructor.

**ENGR 299. Thesis. 1-6 Units.**

Minimum of six units is required for Thesis Option students. Prerequisites: MS in Engineering Science major and permission of research advisor.

**Mechanical Engineering Courses****MECH 100. Manufacturing Processes. 4 Units.**

This course is 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 involve manufacturing skills, reverse engineering, automated machines, geometric dimensioning and tolerancing, and statistical process control. Prerequisites: Completion of all Fundamental Skills; MECH 015 and ENGR 045 with a "C-" or better.

**MECH 104. Introduction to Mechatronics. 3 Units.**

Students examine a broad understanding of the main components of mechatronic systems and understanding of the general principles involved in computer-controlled machinery. Topics include 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: Completion of all Fundamental Skills; ECPE 041, ENGR 120, ENGR 110 with a "C-" or better.

**MECH 120. Machine Design and Analysis I. 3 Units.**

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 are learned along with analytical methods for solving deflection and stability problems. Static, impact, and fatigue failure theories for machines are also studied. Statistical methods for solving machine design problems are presented, and engineering design practices are integrated throughout the course. Prerequisites: Completion of all Fundamental Skills; ENGR 045, ENGR 120, ENGR 121; MECH 015 with a "C-" or better. (Fall).

**MECH 123. Kinematics and Dynamics of Machinery. 3 Units.**

Students learn how to design, analyze and prepare a simulation of complex mechanisms with emphasis on high speed and precision applications. Topics include kinematics and dynamics of planar and three dimensional mechanisms; gyroscopic forces in machines and balancing, and applications to robotics. Prerequisites: Completion of all Fundamental Skills; ENGR 120 and ENGR 121 with a "C-" or better.

**MECH 125. Machine Design and Analysis II. 3 Units.**

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, and lubrication) are introduced and applied to the design of machines. Engineering design practices are integrated throughout the course. Prerequisites: Completion of all Fundamental Skills and MECH 120 with a "C-" or better.

**MECH 129. Vibrations. 3 Units.**

Students study models of physical systems with lumped and distributed parameters. The studies include free and forced vibrations of machines and structures as well as excitation and response of single degree of freedom systems. The course introduces multiple degrees of freedom systems, finite element formulations and mode superposition techniques. Prerequisites: Completion of all Fundamental Skills; MATH 057, ENGR 019, ENGR 120 with a "C-" or better.

**MECH 140. Engineering Design/Senior Project I. 3 Units.**

This course discusses methods of initiating, planning, conceptualizing, and configuring engineering designs. The student uses these methods to develop an engineering design for a product or process that involves 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. Prerequisites: Completion of all Fundamental Skills; ENGR 121 and ENGR 122 with a "C-" or better. Prerequisite, may be taken concurrently: ENGR 110; MECH 120 or MECH 150 with a "C-" or better.

**MECH 141. Engineering Design/Senior Project II. 3 Units.**

The student completes the design phase of their project. Parametric design techniques such as guided iteration, optimization, and Taguchi's methods are used to complete the detailed design of a product or process that involves 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: Completion of all Fundamental Skills; MECH 100 and MECH 140 with a "C-" or better.

**MECH 150. Heat Transfer. 3 Units.**

Students study heat transfer by conduction in one, two and three dimensions in transient and steady state and heat transfer in extended surfaces. Topics include solutions by numerical methods, convection in external and internal flow, free convection, and radiation. Prerequisites: Completion of all Fundamental Skills; ENGR 122 and MATH 057 with a "C-" or better.

**MECH 151. Applied Heat Transfer. 3 Units.**

Applications and extensions of the topics in MECH 150. Multimode heat transfer; heat exchangers. Heat transfer with phase change. Prerequisites: Completion of all Fundamental Skills and MECH 150 with a "C-" or better.

**MECH 155. Solar Energy Engineering. 3 Units.**

This course introduces students to solar energy, sun-earth geometry, radiation measurement, insulation on surfaces, principles of solar collectors, applications such as space heating and solar ovens, and photovoltaics. Laboratory experiments are included. Prerequisites: Completion of all Fundamental Skills and ENGR 122 with a "C-" or better.

**MECH 157. Thermodynamics II. 3 Units.**

Students continue to examine of topics in Thermodynamics I which include availability, chemical reactions, combustion, and fuels. Students also study processes involving air and water mixtures relating that relate to heating, cooling and ventilating for human comfort. The course also introduces to the thermodynamics of the flow of ideal gases. Prerequisites: Completion of all Fundamental Skills and ENGR 122 with a "C-" or better.

**MECH 158. Air Conditioning. 3 Units.**

Students are introduced to air conditioning purpose, terminology and typical systems. Students study the analysis and design of air conditioning as applied to residential and small commercial buildings, and they learn the codes and standards applicable to this field. Prerequisites: Completion of all Fundamental Skills; ENGR 122 with a "C-" or better.

**MECH 160. Fluid Dynamics. 3 Units.**

Students study equations of continuity, energy, and momentum as applied to fluid flow. Topics include one dimensional compressible flow, and the introduction to more advanced topics, such as turbomachinery, viscous flow and potential flow. Prerequisites: Completion of all Fundamental Skills; CIVL 130 and ENGR 122 with a "C-" or better.

**MECH 175. Systems Analysis and Control. 4 Units.**

Students study dynamic analysis and control of systems composed of mechanical, electrical, hydraulic and thermal components. Students use of system modeling and simulation techniques to predict transient and steady state response, lumped parameter approximations and linearization. Students also use feedback to enhance system performance and stability and they study design of linear control systems in the time and frequency domains. Prerequisites: Completion of all Fundamental Skills; ECPE 041, ECPE 041L, ENGR 110, MECH 129 with a "C-" or better.

**MECH 178. Finite Element Methods. 3 Units.**

This course introduces the finite element method for engineering problems. Topics include matrix formulation of finite element models for problems in solid mechanics, heat transfer and fluid flow as well as solution of finite element equilibrium equations. Students study the development of computer algorithms and applications that use commercial finite element computer programs. Some familiarity with matrix methods is desirable. Prerequisites: Completion of all Fundamental Skills; ENGR 121 and ENGR 122 with a "C-" or better. Prerequisite, may be taken concurrently: CIVL 130 with a "C-" or better.

**MECH 191. Independent Study. 1-4 Units.**

Special individual projects are undertaken under the direction of one or more faculty members knowledgeable in the particular field of study. Permission of department chairperson and faculty members involved.

**MECH 197. Undergraduate Research. 2-4 Units.**

This course includes applied or basic research in mechanical engineering under faculty supervision. Projects may be experimental, mathematical or computational in nature. Permission of faculty supervisor and department chairperson. Student must be in good academic standing.

**MECH 200. Computer Aided Manufacturing. 3 Units.**

Develop students' competence and self-confidence as mechanical engineers. Computer aided design, analysis and manufacturing are emphasized. Course subject depends on active learning via several major design-and-build projects. Lecture focuses on the underlying theory of parametric 3-D solid modeling and representation, transformation techniques, machining strategy, and CNC manufacturing technology. Prerequisites: ENGR 121, MECH 100, MS in Engineering Science major or permission of the instructor.

**MECH 202. Polymer and Composite Materials. 3 Units.**

Fundamental characteristics of polymers, fibers, and polymer-based composite materials are studied. Advanced mechanics of materials are used to develop tools to predict the mechanical behavior of composite laminates. Experimental and analytical methods for characterizing the mechanical and thermal behavior of polymers are studied, and laboratory-based experiences are used to enhance the learning process. Design methods for using these advanced materials in engineering applications are discussed. Prerequisites: ENGR 045, ENGR 121 and MS in Engineering Science major or permission of instructor.

**MECH 204. Advanced Mechatronics. 3 Units.**

Students study the design of mechatronic systems that integrate mechanical, electrical, and control systems engineering. Laboratories form the core of the course. They cover topics such as mechanism design, motors and sensors, interfacing and programming microprocessors, mechanical prototyping, and creativity in the design process. Project topics vary from year to year. Prerequisites: MECH 104 and MS in Engineering Science major or permission of instructor.

**MECH 262. Combustion. 3 Units.**

This course introduces students to combustion processes and systems. Students study the conservation equations for reacting flows, chemical kinetics, conserved scalars, premixed flames, diffusion flames and droplet burning. Primary applications studied are internal combustion engines and gas turbine combustors. Prerequisites: ENGR 122 and permission of instructor.

**MECH 291. Graduate Independent Study. 1-4 Units.**

Special individual projects are undertaken under the direction of one or more faculty. Prerequisite: MS in Engineering Science major or permission of instructor.

**MECH 293. Special Topics. 1-4 Units.**

Special courses are organized and offered from time to time to meet the needs or interests of a group of students. Prerequisite: MS in Engineering Science major or permission of the instructor.

**MECH 297. Graduate Research. 1-4 Units.**

Prerequisite: MS in Engineering Science major or permission of instructor. Permission of faculty supervisor and department chair.

**MECH 299. Thesis. 1-6 Units.**

Minimum of six units is required for Thesis Option students. Prerequisites: MS in Engineering Science major and permission of research advisor.

# School of International Studies

Bill Herrin, Ph.D., Director, School of International Studies  
Laura Bathurst, Ph.D., Director, MAIR  
Katrina Alison Jaggears, M.L.A., Associate Director, MAIR

## Programs Offered

### Master of Arts in Intercultural Relations

### Cooperative Programs Offered

**5-year Applied International Economics** (MS at Marquette University, Milwaukee, Wisconsin)

The Master of Arts in Intercultural Relations (MAIR) is a limited-residency program designed to provide seasoned and aspiring professionals with the knowledge and expertise to respond to the challenges of working across cultures domestically and internationally. The MAIR program, jointly sponsored by University of the Pacific's School of International Studies and The Intercultural Communication Institute in Portland, Oregon, prepares students to meet the demands of working in the complex cultural diversity of our world. This program offers a unique curriculum in a creative format.

MAIR is designed for adult professionals who find the schedule and structure of a traditional full-time master's program unsuitable for their situation, and wish to earn an advanced degree in a two-and-one-half to three-year period while maintaining employment or other commitments. In this limited-residency program, students complete nine core courses in 18 months by attending 3 two-week residencies held in Portland every six months (January and July). Directed course assignments are completed at home after each residency.

The MAIR curriculum balances classroom instruction, extensive coursework assignments between residencies, independent study, and either thesis research and writing or the design, implementation, and assessment of a capstone project. The 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. The program attempts to directly link the ongoing professional aspirations and responsibilities of its adult learners with all their academic work, equipping them with practical tools and concepts to accomplish their goals.

Students work with a faculty advisor who is responsible for overseeing their entire program and serving as a liaison between them and the cooperating institutions. Students also work with a thesis or capstone project committee, composed of MAIR faculty members and other recognized, practicing professionals in the field of Intercultural Relations. The committee assists and supports students during the thesis or project process.

The study of Intercultural Relations provides the opportunity to develop cultural competency, including the skills that will be essential to compete in the global workplace. Students and graduates work in areas such as business, government, nonprofit organizations, education, tourism, and human services. Their occupations include positions in human resources, communication, teaching, diversity training, international transition assistance, consulting, marketing, counseling, program development, administration, and healthcare.

The MAIR program partners with the Peace Corps Master's International program, allowing students to combine Peace Corps service with graduate study to complete the requirements for the MAIR degree. Students must apply separately to the MAIR program and the Peace Corps, and be accepted by both. They must satisfy specific course requirements before traveling overseas for Peace Corps service. While overseas, students complete a written project to obtain academic credit for their Peace Corps service. The Master's International program allows students to apply their classroom learning to benefit a host country, and graduate with both an

advanced degree and two years of substantive international/intercultural work experience.

## Admission Criteria

Applicants to the MAIR program must demonstrate:

- Previous successful academic performance
- An understanding of the field of intercultural relations through previous academic coursework and/or professional employment, volunteer service, or field experience
- Clear educational goals that are compatible with the program philosophy
- Sensitivity to intercultural situations
- The ability to operate effectively in small learning groups
- The ability to develop and manage personal distance-learning strategies
- The ability to write and organize thoughts at a graduate level

## Degree Requirements

Central to the MAIR program is the fundamental assumption that there is a core body of knowledge and theory in intercultural relations that all students need to internalize as part of their graduate education, for domestic and/or international work. The program—built around a set of nine core courses—allows students to focus on areas of specific personal interest through electives and their thesis or capstone project.

Three core courses are taken during each of the 3 two-week residencies and completed through assignments at home undertaken during the six months following each residency. If students miss a residency or core course for some reason, they can take those courses at subsequent residencies. Students work with their faculty advisor to map out the focus of their programs and the schedule for completing all requirements given the challenges in their lives.

The MAIR program has two options for completion of the degree: thesis and non-thesis plans, each requiring a total of 40 units. Both options reflect the central philosophy of the MAIR program, which is "theory into practice, practice into theory." The thesis plan requires students to perform independent research, and culminates in the completion of a thesis based on the findings of the research. The non-thesis option requires students to complete a project moving from design to implementation and culminating in theoretically-informed assessment.

## School of International Studies Faculty

Laura Bathurst, Director of MAIR and Assistant Professor of Anthropology and International Studies, 2005, BA, Kansas State University, 1997; MA, University of California-Berkeley, 1999; PhD, 2005.

Janet M. Bennett, Executive Director of the Intercultural Communication Institute, 2001, BA, San Francisco State University, 1972; MA, University of Minnesota, 1976; PhD, 1985.

Kent Warren, Director of Graduate Programs, Intercultural Communication Institute, 2001, BA, University of Southern California, 1964; MA, 1968; PhD, University of Minnesota, 1974.

Ravi Ammigan, 2012, BA, Kendall College, 2002; MA, Michigan State University, 2009.

Chris T. Cartwright, 2010, BA, University of Michigan, 1979; MPA, Indiana University, 1990; Ed.D., Portland State University, 2012.

Christopher Deal, 2010, BA, American University, 1993; MA, 1997; PhD, University of New Mexico, 2004.

Steven R. Dowd, 2003, BA, University of California-Davis, 1970; MA, 1974.

Katherine Golsan, Professor, 1994, BA, Colgate University, 1976; MA, University of North Carolina, 1980; Ph.D., University of Michigan, 1988.

Havva Houshmand, 2001, BA, Chapman University, 1963; MLA, St. John's College, 1987; PhD, Amsterdam University, 1970.

Elizabeth Kirkhart, 2001, BA, University of Maryland, 1971; PhD, University of Southern California, 1991.

Larry Kirkhart, 2001, BBA, University of Missouri-Kansas City, 1964; MPA, University of Southern California, 1968; PhD, 1971.

Judith Martin, 2001, BA, Eastern Mennonite College, 1971; MA, Pennsylvania State University, 1977; PhD, 1980.

Adair Linn Nagata, 2007, BA, Smith College, 1965; MAT, Harvard University, 1966; MA, Fielding Graduate University, 2000; PhD, 2002.

Michael Osmera, 2001, BA, University of Oregon-Eugene, 1969; MA, University of Minnesota, 1978; PhD, 1990.

Nagesh Rao, 2001, BC, Vivekananda College, 1981; MBA, Loyola Institute of Business Administration, 1989; PhD, Michigan State University, 1994.

George Renwick, 2001, BS, Williams College, 1963; MA, Princeton Theological Seminary, 1967; PhD, University of Pittsburgh, 1994.

Barbara F. Schaetti, 2003, BA, Trinity University, 1981; MA, Antioch University-Seattle, 1984; PhD, The Union Institute, 2000.

Miriam Sobré-Denton, 2010, BA, The University of Puget Sound, 1999; MA, The University of Texas at Austin, 2002.

Donna Stringer, 2011, BA, California State University-Sacramento, 1971; MA, University of California-Davis, 1973; PhD 1981.

Guy Michael Trombley, 2012, BA, St. Olaf College, 1985; MA, University of Minnesota, Minneapolis, 1992; PhD, 2001.

Valerie L. White, 2001, BA, Whitman College, 1974; MA, Antioch University-Seattle, 1993.

Muneo Yoshikawa, 2001, BA, Linfield College, 1962; MA, University of Hawaii, 1967; PhD, 1980.

## Master of Arts in Intercultural Relations

In order to earn the Master of Arts degree in Intercultural Relations, students must complete a minimum of 40 units with a Pacific cumulative grade point average of 3.0.

### I. Required Core Courses:

Complete nine core courses

|          |   |   |
|----------|---|---|
| MAIR 200 | Concepts of Intercultural Communication     | 3 |
| MAIR 201 | Ethnicity and Intergroup Relations          | 3 |
| MAIR 202 | Research I                                  | 2 |
| MAIR 220 | Advanced Intercultural Communication Theory | 3 |
| MAIR 221 | Research II                                 | 3 |
| MAIR 222 | Process of Change                           | 2 |
| MAIR 240 | Leadership and Adult Learning               | 3 |
| MAIR 241 | Change Agency                               | 3 |
| MAIR 242 | Culture in Organizational Context           | 2 |

### II. Electives for specialized focus:

Complete a minimum of 8 units (at least 2 units must be from Pacific) from the following:

|          |                                   |     |
|----------|-----------------------------------|-----|
| MAIR 223 | Personal Leadership               | 2   |
| MAIR 260 | Intercultural Context of Training | 3   |
| MAIR 291 | Independent Study                 | 1-4 |

Electives # (Graduate-level courses at other institutions, or courses taken at the Intercultural Communication Institute's Summer Institute for Intercultural Communication (SIIC).

**Note: 1)** No more than six (6) units total may be transferred in from either SIIC or other institutions. Transfer units must represent regular, graduate-level courses, countable by that institution

toward its graduate degrees, and have been completed with a B or better grade. Pass/fail grading is not transferable. 2) Extension or continuing education courses are accepted for credit towards the degree only if they are recognized as graduate courses by the home institution.

## III. Research Thesis or Capstone Project (select A or B below)

### A. Thesis Option

|          |                   |   |
|----------|-------------------|---|
| MAIR 297 | Graduate Research | 4 |
| MAIR 299 | Thesis            | 4 |

1. Students must complete a minimum of 32 units in addition to the 8 thesis units.

2. All students must perform independent research which must culminate in the completion of a thesis based on the findings of the research.

For successful completion of the thesis option, students must submit a research proposal to be approved by their thesis committee, conduct the research, and write the thesis. The success of the research thesis will be judged by the thesis committee.

3. All students complete 4 units of MAIR 297 and 4 units of MAIR 299.

### B. Project Option

|          |                                      |   |
|----------|--------------------------------------|---|
| MAIR 294 | Intercultural Project Design         | 2 |
| MAIR 296 | Intercultural Project Implementation | 4 |
| MAIR 298 | Intercultural Project Analysis       | 2 |

1. Students must complete a minimum of 32 units in addition to 8 project units.

2. For the project option, students will complete a total of 2 units of MAIR 294: Intercultural Project Design, resulting in a written proposal for the project, to be approved by their faculty advisor and at least one specialist in the area in which they propose to work. Students will then complete a total of 4 units of MAIR 296: Intercultural Project Implementation, and will be required to submit documentation of completion of the project. Third, students will complete a written analysis of the implementation of their project for 2 units of MAIR 298: Intercultural Project Analysis. The success of the project will be judged by the faculty advisor, with input from the area specialist(s).

**Note:** The graduate research thesis or capstone project are the last of the program requirements, and are targeted toward students' own professional goals.

## Accelerated Master of Science in Applied International Economics at Marquette University, Milwaukee, Wisconsin

The School of International Studies, in collaboration with the Economics Department at Marquette University in Milwaukee, Wisconsin, offers students the opportunity to pursue a Master of Science degree in Applied Economics (MSAE) (<http://business.marquette.edu/academics/msae>) at Marquette with six possible specializations including International Economics. This accelerated degree is designed to be completed within 5 years of entering Pacific, which is 1 year sooner than the usual time required to complete undergraduate and masters degrees.

Interested students would earn their BA degree at Pacific's School of International Studies while following the typical 4-year plan. During this time, in consultation with academic advisers, they would also successfully complete

- At least one calculus course,
- ECON 055,
- ECON 101,
- ECON 103,

- ECON 190, and
- Two upper-division economics courses (with a grade of "B" or better) specifically tailored to satisfy 2 of the 10 courses (<http://business.marquette.edu/academics/msae-curriculum>) required to complete the MSAE.

Students must inform their academic advisers of their interest in the program by the time they achieve junior standing or they may not be able to complete both degrees in 5 years.

Students would apply to the MSAE program at Marquette during the first semester of their final year at Pacific. Marquette requires all applicants to take either the GRE or GMAT exam and to have an overall GPA of 3.0 or better. *Admission to the MSAE program is at the sole discretion of Marquette and is not guaranteed.*

#### International Studies Courses

##### **INTL 101. International Research Methods. 4 Units.**

Students are introduced to how research is conducted in the social sciences, with emphasis on the problems that occur in international studies research. The course shows how qualitative and quantitative research complements each other and it compares research methodologies in the different social science disciplines. The course also introduces basic statistical methods for analyzing social scientific data, and introduces the use of computers for quantitative analysis. Prerequisite: fundamental quantitative skills.

##### **INTL 105. Globalization, the U.S. and the World. 4 Units.**

This interdisciplinary course surveys the changing nature of global relations that focus on political, economic, and cultural aspects of globalization and the US role in global affairs. Students study US governance (which includes the institutions of government) in comparative perspective in order to better understand the country's position in the world. The course also addresses the meaning and implications of globalization: what impact does it have on democracy in the world, the global environment, etc. Prerequisites: INTL 077 and ECON 053.

##### **INTL 113. World Geography for the Social Sciences. 4 Units.**

This interdisciplinary course is an overview of the study of human geography and is designed to promote both geographic literacy and critical geographical thinking. Issues and themes covered include cultural geography; political geography; space- and place-making; landscape, ecology, and resource consumption; cartography and its critics; and national, imperial, and gendered geographies and their critics. Case studies draw from many world regions and cultures. Sophomore standing.

##### **INTL 113L. Video Lab for World Geography. 2 Units.**

Complementing INTL 113 (World Geography), this course offers documentary videos which bring to life geographical concepts. Each video focuses on a different society that show 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, may be taken concurrently: INTL 113 or permission of instructor.

##### **INTL 115. Pacific Rim Geography. 4 Units.**

This course covers the geography of the Americas, East Asia, and Southeast Asia. The physical geography of each region is explored followed by an examination of the economic, political, social/cultural, and environmental patterns and issues in each of these regions of the world. Emphasis is placed on the countries with the largest populations in the regions that surround the Pacific Rim which includes China, the US, Indonesia, Brazil, Japan, and Mexico. Prerequisites: ECON 051 or ECON 053 or ECON 055. Sophomore standing.

##### **INTL 123. Literature Across Cultures. 4 Units.**

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 or Sao Paulo, Tokyo, Paris or Mobile. Emphasis is on conflicts that arise from post colonialism. General Education IC.

##### **INTL 151. Cross-Cultural Training I. 2 Units.**

This course prepares students for interacting in cultures other than their own. It is designed to assist students in developing learning and coping strategies when outside their native cultural environment, such as while studying abroad, as well as the communication and intercultural skills needed for interacting successfully in new cultural environments. Topics include cultural values and assumptions, intercultural communication, and cross cultural problems and adjustment. Prerequisites: Completion of all Fundamental Skills.

##### **INTL 152. Inter-American Cross-Cultural Training. 2 Units.**

Inter-American Cross Cultural Training deals with the theory and practice of living and working in US Latino and Latin American cultures. It is intended to prepare students to operate successfully in a professional context either abroad in a Spanish-speaking country or in Hispanic communities within the United States. Through course work leads up to an internship that requires experiential learning. Students will increase their understanding of the general character of the cross-cultural experience, explore learning and coping strategies to maximize that experience, amplify their understanding of themselves as cultural beings so that they can better understand others, and gain basic cultural knowledge necessary for them to operate successfully in bilingual (English/Spanish) professional settings. It is designed to build both culture-general skills as well as culture-specific ones. That is, students learn skills that serve them in intercultural encounters with people from all over the world, but emerge with particular preparation to productively engage across difference in Latin America and with US Latinos. Permission of instructor.

##### **INTL 161. Cross-Cultural Training II. 2 Units.**

This course analyzes and evaluates 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 that characterize personal and cultural change. Prerequisites: INTL 151 and study abroad (SABD).

##### **INTL 165. Development, Modernization, and Cultural Change. 4 Units.**

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. It uses databases that are made available, and students undertake country and context specific analyses and case studies. The successful completion of this course equips students with an interdisciplinary and holistic understanding of sustainable human development. Finally the emphasis placed on comparative analysis to help the student gain a deeper understanding of a country in a broader regional and international context. Prerequisites: POLS 011 or POLS 051; ANTH 053; ECON 053 or permission of instructor.

##### **INTL 167. Advanced Model United Nations (MUN II). 1-2 Units.**

This course offers advanced instruction on the workings of the specialized agencies of the United Nations and other international organizations with particular attention paid to current world issues before those bodies. Emphasis is placed on independent research and writing, as well as leadership skills, in preparation for attending a competitive Model United Nations conference. Prerequisite: POLS 051. May be taken for up to 2 units.

**INTL 174. Global Environmental Policy. 4 Units.**

Students examine the major environmental problems that confront 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 051.

**INTL 175. SIS Mentor III: Ethics Across Cultures. 4 Units.**

This interdisciplinary course helps students become aware of how they think about ethics. It puts students' experiences in more than one culture into an ethical framework, and prepares students for ethical action in their professional lives. The students look at philosophical and religious bases for ethical decision making in different cultures, and they use 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. Prerequisites: INTL 151 and a semester of study abroad, or a bi-cultural background (and with permission of instructor).

**INTL 185. SIS Capstone. 2 Units.**

This capstone course integrates the interdisciplinary and multidisciplinary SIS core curriculum with the experiential learning of study abroad. This is accomplished through analysis of the role of the individual in a variety of cultural and historical contexts that pay particular attention to questions of identity and ethics in a complex global environment. Prerequisites: a semester of study abroad or permission of instructor. Senior standing.

**INTL 187. Internship. 1-4 Units.**

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. Prerequisites: two SIS core courses and a minimum 2.5 GPA.

**INTL 191. Independent Study. 1-4 Units.**

Ordinarily limited to SIS juniors and seniors. Student must be in good academic standing. Permission of instructor.

**INTL 193W. Special Topics-Business. 18 Units.****INTL 193X. Special Topics-Business. 18 Units.****INTL 193Y. Special Topics-Business. 18 Units.****INTL 193Z. Special Topics-Business. 18 Units.****INTL 197. Independent Research. 1-4 Units.**

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. A minimum 3.0 GPA is required. Permission of instructor.

**INTL 200. Introduction to Social Entrepreneurship. 3 Units.**

This course is an introduction to the developing field of social entrepreneurship. The course will expose students to topics, concepts, and definitions in this developing field, including theory regarding the term 'entrepreneurship', definitions of social entrepreneur and social entrepreneurship, management skills required for social entrepreneurial organizations, scaling of social impact, and impact measurement for social mission organizations. Throughout the course, examples are given of real social entrepreneurs and social entrepreneurial organizations in order to give practical insight to complement the theory covered in the different sections.

**INTL 201. Business Plans for Social Entrepreneurial Organizations. 3 Units.**

This course introduces the student to the importance, as well as actual mechanics, of developing a business plan for a social entrepreneurial organization whether it is a social enterprise or an organization that depends on non-earned income. The course emphasizes developing a business plan which integrates the organization's social mission with an economic strategy. An Introduction to Social Entrepreneurship is the prerequisite course for this course.

**INTL 202. Monitor and Eval Social Entrepreneurship. 3 Units.**

This course provides the learner with an introduction to monitoring and evaluation of social programs with a special focus on social entrepreneurship and microfinance. Students learn the methods and approaches of monitoring and evaluation and apply these to the emerging field of social entrepreneurship.

**Intercultural Relations Courses****MAIR 200. Concepts of Intercultural Communication. 3 Units.**

This course reviews the major concepts, theories, and models that contribute to a general process descriptions of communication across cultures, and it considers how cultures pattern communication. This work is intended to provide a vocabulary and framework for analysis and discussion throughout the program. Important topics in this course include the dynamics of face-to-face interaction, conflict styles across cultures, societal influences on ethnocentrism and racism, cultural value orientation, nonverbal dimensions of communication, language interaction, stereotypes, relationship development, and intercultural adaptation.

**MAIR 201. Ethnicity and Intergroup Relations. 3 Units.**

Assuming an intercultural communication perspective on ethnic relations, this course examines group theory with particular emphasis on dynamics common in domestic multicultural contexts. Topics include an examination of research on ethnic identity development, cross-cultural psychology, prejudice and stereotyping, and interaction patterns specific to particular ethnic groups. It also considers models for managing diversity at the organizational level. Participants review models for multicultural group behavior and learn approaches to facilitation that are applicable in both small groups and organizations.

**MAIR 202. Research I. 2 Units.**

In intercultural relations, practitioners face a crucial question: How do I know what is real? This is the central issue in what is called "ontology," and intercultural researchers must be familiar with alternatives to the positivist research tradition in arriving at answers to the question. This course explores, through a phenomenological perspective, cultural differences in the search for meanings. Symbolic interactionism and ethnomethodology provide a foundation for exploring nonwestern ways of insight about human experience, via the paradigms of Consciousness, Transcendence, and Connectedness. Nonwritten channels for expression of learning are often explored.

**MAIR 220. Advanced Intercultural Communication Theory. 3 Units.**

This course examines theories from the field of social science that have been influential in the development of intercultural communication concepts, with an emphasis on the contributions of constructivism. It provides an overview of major paradigms in scientific thought that are mirrored in social scientific theories, and of where intercultural communication fits into the scheme. Students review classic sources in the field of intercultural communication and examine current writings that pertain to the future of the field. They specifically explore the body of theory that underlies the planning of programs and conducting of communication research—interpersonal, small group, and intercultural. Students also consider ethical questions that arise in intercultural encounters, in teaching and training, and in the conduct of research, especially across cultures.



**MAIR 221. Research II. 3 Units.**

In this course, both quantitative and qualitative research tools are examined for their usefulness in the intercultural context. Exercises and readings consider surveying, sampling, content analysis, depth interviewing, participant observation, personal document analysis, and unobtrusive methods, with equal attention paid to the disadvantages and advantages of each. Students experience using a range of methods and designing research plans which address issues of bias and ethics as well as matching research strategies to the research question.

**MAIR 222. Process of Change. 2 Units.**

In the process of individual identity development, culture plays a primary role. This course systematically examines the intrapersonal impact of cultural adaptation by reviewing theories of change, ethnic identity development, acculturation, and cultural marginality. Special topics include loss and change, models of transition, adaptation, and acculturation, and culture shock and re-entry as developmental processes.

**MAIR 223. Personal Leadership. 2 Units.**

Course focuses on exploring what it means to be a practicing interculturalist, specifically the internal states and external behaviors that promote appropriate and ethical interactions when working across cultural boundaries in professional and personal contexts. Course has three parts, sequenced over three residencies. Topics include the basic framework of Personal Leadership (two principles and six practices), crafting a vision of oneself as an effective interculturalist, and real-time application of the self-reflective process known as the Critical Moment Dialogue.

**MAIR 240. Leadership and Adult Learning. 3 Units.**

This course provides an opportunity for learners to explore theories of leadership and adult learning from a developmental and intercultural perspective. First, leadership theories amenable to use across cultures are examined that include Jean Lipman-Blumen's connective leadership model and Belenky, Bond & Weinstock's work on community and developmental leadership. Global leadership and multiple intelligences frameworks are explored from a critical intercultural perspective. Second, the course explores theories and practices of adult and transformative learning, again within a critical framework informed by intercultural concerns. Students practice translation and interpretation of selected models for multicultural and intercultural contexts.

**MAIR 241. Change Agency. 3 Units.**

Managing the transition process for people and human systems in an intercultural context requires expertise in planned change, innovation theory, and systems diagnosis and intervention. This course reviews the nature of change in communities and cultures with special attention to social action research and organization development. It also involves students in both critiquing and designing programs for planned change.

**MAIR 242. Culture in Organizational Context. 2 Units.**

The impact of culture in the organization occurs at multiple levels. Employees as well as clients may come from a variety of domestic or international cultures to participate in an organizational culture, which in itself requires adaptation. The interplay of cultural patterns affects management and leadership styles, decision-making, negotiation, conflict mediation, and team-building. This course provides an overview of modern organizational theory with a view to extracting principles and methods, which are relevant to this multicultural context.

**MAIR 260. Intercultural Context of Training. 3 Units.**

Course will explore the impact of culture on training design. Through application of specific frameworks from adult learning, instructional design, and student development, participants will learn specific strategies for modifying training to take culture into account.

**MAIR 291. Independent Study. 1-4 Units.****MAIR 294. Intercultural Project Design. 1 or 2 Unit.**

The MAIR program views the field of intercultural relations as a special mix of theory and practice. The thesis option stresses the theoretical side of the program while the project option stresses the practice emphasis. This course is designed to prepare graduate students in Intercultural Relations to design a practical project built upon the theoretical principles that come from the multiple disciplines that inform the field of intercultural relations. At the completion of this course, students are prepared to implement a practical project in a real setting appropriate to their professional goals. Prerequisite: 17 MAIR course units with a 3.0 GPA and permission from faculty advisor.

**MAIR 296. Intercultural Project Implementation. 1-4 Units.**

Having an approved intercultural project design, students are prepared to move into the project implementation stage. Working with their MAIR faculty advisor and their community mentor, all aspects of the project is completed (e.g. training design and implementation, course design and offering, creation of a training manual, creation of a diversity initiative). This course is designed to prepare graduate students in Intercultural Relations to implement a practical project built upon the theoretical principles that come from the multiple disciplines that inform the field of intercultural relations. At the completion of this course students have implemented a practical project in a real setting appropriate to their professional goals and prepared to do so in other settings. Prerequisite: MAIR 294.

**MAIR 297. Graduate Research. 1-4 Units.****MAIR 297D. Grad Research. 1-4 Units.****MAIR 297E. Grad Research. 1-4 Units.****MAIR 298. Intercultural Project Analysis. 1 or 2 Unit.**

Upon Completion of the project implementation stage, students develop an analysis of the learning experience. Again working with MAIR faculty and the community mentor, students review the project in terms of their original objectives and the intercultural outcomes. This course is designed to prepare graduate students in Intercultural Relations to reflect on and analyze a practical project built upon the theoretical principles that come from the multiple disciplines that inform the field of intercultural relations. At the completion of this course, student have a command of the reflective and analytical processes needed to examine the effectiveness of a practical project they implemented. Prerequisite: MAIR 296.

**MAIR 299. Thesis. 4 Units.**

# The Thomas J. Long School of Pharmacy and Health Sciences

Phillip R. Oppenheimer, Dean  
Xiaoling Li, Associate Dean, Graduate Education & Research  
Eric G. Boyce, Associate Dean, Academic Affairs  
Donald G. Floriddia, Associate Dean, Student & Professional Affairs  
Nancy L. DeGuire, Assistant Dean, External Relations  
Linda L. Norton, Assistant Dean, Operations  
James A. Uchizono, Assistant Dean and Director, Pre-Health Programs

## Programs Offered

**Master of Science in Speech-Language Pathology**  
**Master of Science in Pharmaceutical and Chemical Sciences**  
**Doctor of Philosophy in Pharmaceutical and Chemical Sciences**  
**Doctor of Physical Therapy**  
**Doctor of Pharmacy/Doctor of Philosophy in Pharmaceutical and Chemical Sciences**  
**Doctor of Pharmacy/Master of Science in Pharmaceutical and Chemical Sciences**  
**Doctor of Pharmacy/Master of Business Administration**

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. Students will develop their leadership skills and strong commitment to their professions and to society. We support outstanding professional and graduate teaching, research and other scholarly activity, and service as the means of achieving our mission.

The graduate programs offered by the Thomas J. Long School of Pharmacy and Health Sciences include the Doctor of Philosophy and Master of Science degrees in the Pharmaceutical and Chemical Sciences, the Doctor of Physical Therapy degree, the Master of Science degree in Speech-Language Pathology and the combined degrees, the Doctor of Pharmacy/Doctor of Philosophy and Doctor of Pharmacy/Master of Science in Pharmaceutical and Chemical Sciences, the Doctor of Pharmacy/Master of Business Administration. Each of these programs provides excellent education, training and mentoring.

## Pharmaceutical and Chemical Sciences Program

Phone: (209) 946-2405  
Website: [go.pacific.edu/pharmchem](http://go.pacific.edu/pharmchem)

### Programs Offered

**Master of Science in Pharmaceutical and Chemical Sciences**  
**Doctor of Philosophy in Pharmaceutical and Chemical Sciences**

Master of Science and Doctor of Philosophy degrees are available in five areas of interdisciplinary emphasis: Bioanalytical and Physical Chemistry, Molecular-Cellular Pharmacology and Toxicology, Chemical Synthesis, Drug Discovery and Design, Drug Targeting and Delivery, and Pharmacoeconomics and Health Care Outcomes and Services.

The Graduate Program also offers combined PharmD/PhD and PharmD/MS degrees. These unique dual-degree programs are intended for students who are interested in careers in research and teaching, but who wish to also possess a professional degree in pharmacy.

The goal of the Pharmaceutical and Chemical Sciences Program (PCSP) curriculum is to prepare students for the challenges of both basic and applied research, to advance knowledge in an area of specialization, to encourage fundamental discovery in the chemical, pharmaceutical and healthcare sciences, and to attain advanced degrees. Faculty from the departments of chemistry, pharmaceuticals and medicinal chemistry, physiology and pharmacology, and pharmacy practice bring their research interests and expertise to the program. Students are encouraged to combine the talents of the faculty into a unique, student-centered and

interdisciplinary program that meet their individual educational goals. Upon the completion of the education from PCSP, graduates are self-motivated learners who possess broad knowledge in pharmaceutical and chemical sciences and specialized knowledge in their area of focus, as well as research and experimental skills needed for success in pharmaceutical, biotechnological, and chemical industries or academia.

## Admission Requirements

Entering students should have the equivalent of a Pacific Bachelor degree with at least a "B" average (3.0 GPA) in all upper-division coursework. The minimum GRE scores are a total of 1100 for Verbal and Quantitative and 3.0 for the Analytical section. We accept the old GRE score not older than 5 years. We will accept the GRE scores on the new scale equivalent to the minimum admission scores in the old scale. Depending on the research focus area, there are minimum undergraduate units required in the mathematical, physical, chemical, pharmaceutical and biological disciplines.

Students should also include an essay or personal statement that focuses on their career objectives and personal ideals, and three letters of recommendation, no older than 1 year old.

*International Students:* In addition to meeting coursework, GPA and GRE requirements, International Students whose native language is not English must submit their TOEFL (Test of English as a Foreign Language) scores when they apply to the program. The minimum acceptable score is 550 (paper-based) or 80 (Internet-based). Those students who want to be considered for a Graduate Assistant (GAs) position, must score at least 575 (paper-based test), or 90 (Internet) on TOEFL and are required to demonstrate English speaking skills by a telephone interview. TOEFL scores can be no older than 2 years old. Students must also provide financial supporting documentation, which can be no older than 6 months old. We also accept IELTS (International English Language Testing System) scores. Students considering a GA position must score at least 7.0. The minimum score for admission is 6.5.

International students who attended schools outside of the United States must submit an evaluation of their academic records. Transcripts must be reviewed by one of the following outside evaluation agencies: WES (World Education Services), Error! Hyperlink reference not valid. [www.wes.org](http://www.wes.org) (<http://www.wes.org>) or ECE (Educational Credential Evaluators), Error! Hyperlink reference not valid. [www.ece.org](http://www.ece.org) (<http://www.ece.org>). Please request a course-by-course evaluation that includes a grade point average (GPA) and have an official copy sent directly to the Graduate School. Student transcripts need to be translated into English before an evaluation can be processed. Please check with the evaluation agency for details on specific document requirements.

Please refer to the Admissions section of this catalog or visit [www.pacific.edu](http://www.pacific.edu) and go to the Office of Research and Graduate Studies web page and consult the International Applicants and Transcript Evaluation sections for up-to-date admissions criteria or for more information concerning other required application materials and instructions.

## PharmD/MS and PharmD/PhD Programs

This dual-degree program combines the features of the professional PharmD degree with the teaching and research components of the MS and PhD. It offers a unique opportunity for students who intend to extend their professional pharmacy training into a career in teaching and/or research. The combined program trains outstanding teachers and researchers who are in high demand for employment by industry and academia.

### Program Description

The PharmD/MS is usually completed in four years and the PharmD/PhD in five years. During the first two years, students concentrate on the PharmD curriculum, but take graduate level elective courses when possible. The Doctor of Pharmacy curriculum is described in the University's General Catalog. Students do not need to decide in

which area of pharmaceutical science they will focus on when applying to the program, but they are expected to choose an area of research concentration and a research advisor by the end of their first year of study. The later years of the program are devoted to graduate course work, experiential training in the Stockton area, research, and thesis or dissertation writing. The State Pharmacy Board Exam may be taken following completion of the Doctor of Pharmacy curriculum, usually in the fourth year.

## Admission Procedure

The minimum requirement for admittance to the program is a BA or BS degree with a GPA of 3.0 or greater. The application process requires separate applications to the PharmD professional program and the graduate programs. The application fee for the MS and PhD programs is waived. The Office of Admission accepts two letters of recommendation and transcripts submitted with the PharmD application. Four additional items are required for admission:

1. The completed graduate application form;
2. A personal statement from the applicant stating his/her goals relative to a research and/or teaching career and selecting one of the five tracks preferred;
3. GRE scores on the General Test
4. A letter of recommendation from someone who is familiar with the student's research abilities. If such a letter is already included in the PharmD application, a third letter from an academic person is acceptable.

## The Thomas J. Long School of Pharmacy and Health Sciences Faculty

### Pharmaceutical and Chemical Sciences

Linda L. Norton, Assistant Dean of Operations, Professor of Pharmacy Practice, 1993, PharmD, University of the Pacific, 1991.

James A. Uchizono, Assistant Dean and Director, Pre-Health Programs, Professor of Pharmaceutics, 2000, BS, 1985, BS, University of California, Irvine, 1985; PharmD, 1990; PhD, University of California, San Francisco, 2001.

Eric G. Boyce, Associate Dean, Academic Affairs and Professor of Pharmacy Practice, 2006, BS Pharm, 1975; PharmD, University of Utah, 1984.

Xiaoling Li, Associate Dean, Graduate Education and Research, Professor of Pharmaceutics, 1993, BS, 1982; MS, Shanghai First Medical College, People's Republic of China, 1985; PhD, University of Utah, 1991.

Bhaskara R. Jasti, Chair, Department of Pharmaceutics & Medical Chemistry, Professor of Pharmaceutics, 2001, BS, Kakatiya University, India, 1987; BS, Jadavpur University, India, 1990; PhD, University of the Pacific, 1995.

Timothy J. Smith, Chairman, Department of Physiology and Pharmacology, Professor of Physiology and Pharmacology, 1993, BS, Purdue University, 1978; PhD, University of Minnesota, 1983.

Larry Spreer, Professor and Chair, 1970, BS, University of Kansas, 1965; PhD, University of Colorado, 1969.

Sian M. Carr-Lopez, Vice Chair of Pharmacy Practice, Curriculum and Assessment, Professor of Pharmacy Practice, 1990, PharmD, University of the Pacific, 1985

Henghu Sun, Professor, Director of Pacific Resources Research Center, 2009, BS, Beijing University of Science and Technology, 1982; MS, China University of Mining and Technology, 1985; PhD, 1988.

Richard R. Abood, Professor of Pharmacy Practice, 1991, BS Pharm, University of Nebraska, 1972; JD, University of Nebraska, 1976.

Mamoun M. Alhamadsheh, Assistant Professor, 2011, B.S. Pharm. Jordan University of Science & Technology, Irbid, Jordan; 1999; PhD, University of Toledo, 2004.

William K. Chan, Professor of Medicinal Chemistry, 1996, PharmD, University of California, San Francisco, 1986; PhD, 1991.

Anthony D. Dutoi, Assistant Professor, 2012, BS, Saint Louis University, 1999; PhD, University of California, Berkeley, 2006

Jesika S. Faridi, Assistant Professor of Physiology & Pharmacology, 2004, BS, University of California, Davis, 1995; PhD, Loma Linda University, 2000.

Andreas Franz, Associate Professor, 2002, BS, Universitaet-Gesamthochschule Siegen, 1994; MS, University of the Pacific, 1997; PhD, University of the Pacific, 2000.

Xin Guo, Associate Professor of Pharmaceutical Chemistry, 2003, BS, School of Pharmacy, Shanghai Medical University, 1993; MS, Duquesne University, 1995; PhD, University of California, San Francisco, 2001.

Robert F. Halliwell, Professor, Physiology and Pharmacology, 2002, BS, University of Stirling, Scotland, 1983; MS, University College London, England, 1985; PhD, University of Dundee, Scotland, 1992.

Patrick R. Jones, Professor, 1974, BA, University of Texas, 1966; BS, 1966; PhD, Stanford University, 1971.

Myo-Kyoung Kim, Associate Professor of Pharmacy Practice, 2003, BS, Chung-Ang University, South Korea, 1994; MS, 1995; PharmD, University of Minnesota, 1998.

John C. Livesey, Associate Professor of Physiology and Pharmacology, 1994, BS, Stanford University, 1977; PhD, University of Minnesota, 1982.

Jenana Maker, Assistant Professor, 2008, PharmD, University of Rhode Island, 2006.

C. Michael McCallum, Professor, 1994, BS, Michigan State University, 1988; PhD, University of California, Berkeley, 1993.

Ryan Moffet, Assistant Professor, 2011, BS, San Francisco State University, 2002; PhD, University of California, San Diego, 2007

Miki S. Park, Assistant Professor of Pharmaceutics, 2004, BS, University of Texas, Austin, 1997; PhD, University of California, San Francisco, 2002.

Rajul Patel, Assistant Professor of Pharmacy Practice, 1999, BS, Johns Hopkins University, 1994; PharmD, University of the Pacific, 2001; PhD, 2007.

Roshanak Rahimian, Associate Professor of Physiology and Pharmacology, 2001, PharmD, Tehran University of Medical Sciences, Iran, 1988; MSc, University of Ottawa, Canada, 1995; PhD, University of British Columbia, Canada, 1998.

Marcus Ravnar, Associate Professor of Pharmacy Practice, 2000, PharmD, University of the Pacific, 1994.

Jianhua Ren, Associate Professor, 2002, BS, Beijing Normal University, 1986; MS, Auburn University, 1994; PhD, Purdue University, 1999.

Silvio Rodriguez, Professor, 1978, MS, University of California, Santa Barbara, 1970; PhD, 1978.

Wade A. Russu, Assistant Professor of Medicinal Chemistry, 2005, BS, California Polytechnic State University, San Luis Obispo, 1992; MA, University of California, Santa Barbara, 1995; PhD, University of California, Santa Barbara, 2000.

Vyacheslav V. Samoshin, Professor, 1997, MS, 1974; PhD, 1982; DSci, 1991; Lomonosov Moscow State University, USSR.

Balint Sztaray, Associate Professor, 2008, MS, Eotvos Lorand University, Hungary, 1997; PhD, 2001.

David W. Thomas, Associate Professor of Physiology and Pharmacology, 2000, BS, California State University, Sacramento, 1985; MS, 1989; PhD, University of California, Davis, 1996.

Jerry Tsai, Associate Professor, 2008, BS, University of California, Los Angeles, 1991; PhD, Stanford University, 1998.

Katerina Venderova, Assistant Professor of Physiology and Pharmacology, 2011, M.Pharm, 2000; PharmD, 2003; PhD, 2003; Charles University, Czech Republic.

Mark Walberg, Assistant Professor of Pharmacy Practice, 2009, PhD, University of the Pacific, 2009; PharmD, University of the Pacific, 2006; MA, University of California, Los Angeles, 2003; BS, University of California, Los Angeles, 2001.

Paul J. Williams, Professor of Pharmacy Practice, 1982, PharmD, University of the Pacific, 1974; MS, University of North Carolina, 1980.

Joseph A. Woelfel, Associate Professor of Pharmacy Practice, 2006, BS Pharm, 1970; MS 1972; PhD, University of the Pacific, 1978

Liang Xue, Assistant Professor, 2007, BS, Fudan University, Shanghai, China, 1996; PhD, Clemson University, 2004.

Qinliang Zhao, Assistant Professor, 2010, BS, Zhejiang University, Hangzhou, China, 2003; PhD, Texas A&M, 2007.

## Physical Therapy

Christine R. Wilson, Department Chair, Associate Professor of Physical Therapy, 2003, BS, State University of New York - Downstate Medical Center, 1978; MA, Columbia University, 1983; PhD, McGill University, 1995.

Casey Nesbit, Assistant Professor and Director of Clinical Education, 2013, BS, Virginia Commonwealth University, 1982; MS, University of Oklahoma, 2005; DPT, Marymount University, 2008; DSc, University of Oklahoma, 2011

Sandra Bellamy, Associate Professor, 2004, BA, 1997; MS, 1999; DPT, University of the Pacific, 2003.

Todd E. Davenport, Assistant Professor, 2007, BS, Willamette University, 1998; DPT, University of Southern California, 2002.

Jim K. Mansoor, Professor, 1993, BA, California State University, Sacramento, 1980; MS, 1989; PhD, University of California, Davis, 1996.

Cathy Peterson, Associate Professor, 2002, BS, University of Iowa, 1989; MSPT, Des Moines University, 1991; EdD, University of San Francisco, 2002.

Tamara L. Phelan, Associate Professor, 2001, BS, Tennessee State University, 1993; MS, Ola Grimsby Institute, 1997; DMT, Ola Grimsby Institute, Inc., San Diego, CA, 2000; EdD, University of the Pacific, 2008.

## Speech-Language Pathology

Robert E. Hanyak, Chair and Associate Professor of Speech-Language Pathology, 1985, BA, University of the Pacific, 1979; MS, University of Utah, 1981; AuD, University of Florida, 2005.

Heidi Germino, Assistant Clinical Professor of Speech-Language Pathology, Director, Scottish Rite Center, 2007, BA, University of the Pacific, 1990; MA, 1992.

Amy Wusstig, Assistant Clinical Professor of Audiology, Clinical Director, 2010, B.S. Speech Pathology and Audiology, California State University, Sacramento, 2004; AuD, Utah State University, 2008.

Larry Boles, Professor of Speech-Language Pathology, 2010, BA, San Francisco State, 1978; M.A., San Francisco State, 1982; Ph.D., University of Arizona, 1995.

Loretta Dittrich, Clinical Education Coordinator, 2009, BA, California State University Stanislaus, 1986; MA, University of the Pacific, 1988.

Jill Duthie, Assistant Professor of Speech-Language Pathology, 2006, BA, University of California Santa Barbara, 1972; MA, California State University Northridge, 1976; PhD, University of Oregon, 2005.

Simalee Smith-Stubblefield, Associate Professor, 1983, BS, University of Wyoming, 1976; MA, University of the Pacific, 1982

Michael Susca, Associate Professor of Speech-Language Pathology, 2001, BS, University of California, Santa Barbara, 1975; MS, University of New Mexico, 1977; PhD, University of Nebraska-Lincoln, 2001.

Jeannene Ward-Lonergan, Professor, 1999, BS, St. Joseph's College, 1984; MS, Boston University, 1989; University of Connecticut, 1995., jwardlon@pacific.edu

## Pharmaceutical and Chemical Sciences

Students must complete a minimum of 32 units with a Pacific cumulative grade point average of 3.0 in order to earn the master of science degree in pharmaceutical and chemical sciences.

### Pharmaceutical and Chemical Sciences Faculty

Linda L. Norton, Assistant Dean of Operations, Professor of Pharmacy Practice, 1993, PharmD, University of the Pacific, 1991.

James A. Uchizono, Assistant Dean and Director, Pre-Health Programs, Professor of Pharmaceutics, 2000, BS, 1985, BS, University of California, Irvine, 1985; PharmD, 1990; PhD, University of California, San Francisco, 2001.

Eric G. Boyce, Associate Dean, Academic Affairs and Professor of Pharmacy Practice, 2006, BS Pharm, 1975; PharmD, University of Utah, 1984.

Xiaoling Li, Associate Dean, Graduate Education and Research, Professor of Pharmaceutics, 1993, BS, 1982; MS, Shanghai First Medical College, People's Republic of China, 1985; PhD, University of Utah, 1991.

Bhaskara R. Jasti, Chair, Department of Pharmaceutics & Medical Chemistry, Professor of Pharmaceutics, 2001, BS, Kakatiya University, India, 1987; BS, Jadavpur University, India, 1990; PhD, University of the Pacific, 1995.

Timothy J. Smith, Chairman, Department of Physiology and Pharmacology, Professor of Physiology and Pharmacology, 1993, BS, Purdue University, 1978; PhD, University of Minnesota, 1983.

Larry Spreer, Professor and Chair, 1970, BS, University of Kansas, 1965; PhD, University of Colorado, 1969.

Sian M. Carr-Lopez, Vice Chair of Pharmacy Practice, Curriculum and Assessment, Professor of Pharmacy Practice, 1990, PharmD, University of the Pacific, 1985

Henghu Sun, Professor, Director of Pacific Resources Research Center, 2009, BS, Beijing University of Science and Technology, 1982; MS, China University of Mining and Technology, 1985; PhD, 1988.

Richard R. Abood, Professor of Pharmacy Practice, 1991, BS Pharm, University of Nebraska, 1972; JD, University of Nebraska, 1976.

Mamoun M. Alhamadsheh, Assistant Professor, 2011, B.S. Pharm. Jordan University of Science & Technology, Irbid, Jordan; 1999; PhD, University of Toledo, 2004.

William K. Chan, Professor of Medicinal Chemistry, 1996, PharmD, University of California, San Francisco, 1986; PhD, 1991.

Anthony D. Dutoi, Assistant Professor, 2012, BS, Saint Louis University, 1999; PhD, University of California, Berkeley, 2006

Jesika S. Faridi, Assistant Professor of Physiology & Pharmacology, 2004, BS, University of California, Davis, 1995; PhD, Loma Linda University, 2000.

Andreas Franz, Associate Professor, 2002, BS, Universitaet-Gesamthochschule Siegen, 1994; MS, University of the Pacific, 1997; PhD, University of the Pacific, 2000.

Xin Guo, Associate Professor of Pharmaceutical Chemistry, 2003, BS, School of Pharmacy, Shanghai Medical University, 1993; MS, Duquesne University, 1995; PhD, University of California, San Francisco, 2001.

Robert F. Halliwell, Professor, Physiology and Pharmacology, 2002, BS, University of Stirling, Scotland, 1983; MS, University College London, England, 1985; PhD, University of Dundee, Scotland, 1992.

Patrick R. Jones, Professor, 1974, BA, University of Texas, 1966; BS, 1966; PhD, Stanford University, 1971.

Myo-Kyoung Kim, Associate Professor of Pharmacy Practice, 2003, BS, Chung-Ang University, South Korea, 1994; MS, 1995; PharmD, University of Minnesota, 1998.

John C. Livesey, Associate Professor of Physiology and Pharmacology, 1994, BS, Stanford University, 1977; PhD, University of Minnesota, 1982.

Jenana Maker, Assistant Professor, 2008, PharmD, University of Rhode Island, 2006.

C. Michael McCallum, Professor, 1994, BS, Michigan State University, 1988; PhD, University of California, Berkeley, 1993.

Ryan Moffet, Assistant Professor, 2011, BS, San Francisco State University, 2002; PhD, University of California, San Diego, 2007

Miki S. Park, Assistant Professor of Pharmaceutics, 2004, BS, University of Texas, Austin, 1997; PhD, University of California, San Francisco, 2002.

Rajul Patel, Assistant Professor of Pharmacy Practice, 1999, BS, Johns Hopkins University, 1994; PharmD, University of the Pacific, 2001; PhD, 2007.

Roshanak Rahimian, Associate Professor of Physiology and Pharmacology, 2001, PharmD, Tehran University of Medical Sciences, Iran, 1988; MSc, University of Ottawa, Canada, 1995; PhD, University of British Columbia, Canada, 1998.

Marcus Ravnar, Associate Professor of Pharmacy Practice, 2000, PharmD, University of the Pacific, 1994.

Jianhua Ren, Associate Professor, 2002, BS, Beijing Normal University, 1986; MS, Auburn University, 1994; PhD, Purdue University, 1999.

Silvio Rodriguez, Professor, 1978, MS, University of California, Santa Barbara, 1970; PhD, 1978.

Wade A. Russu, Assistant Professor of Medicinal Chemistry, 2005, BS, California Polytechnic State University, San Luis Obispo, 1992; MA, University of California, Santa Barbara, 1995; PhD, University of California, Santa Barbara, 2000.

Vyacheslav V. Samoshin, Professor, 1997, MS, 1974; PhD, 1982; DSci, 1991; Lomonsov Moscow State University, USSR.

Balint Sztaray, Associate Professor, 2008, MS, Eotvos Lorand University, Hungary, 1997; PhD, 2001.

David W. Thomas, Associate Professor of Physiology and Pharmacology, 2000, BS, California State University, Sacramento, 1985; MS, 1989; PhD, University of California, Davis, 1996.

Jerry Tsai, Associate Professor, 2008, BS, University of California, Los Angeles, 1991; PhD, Stanford University, 1998.

Katerina Venderova, Assistant Professor of Physiology and Pharmacology, 2011, M.Pharm, 2000; PharmD, 2003; PhD, 2003; Charles University, Czech Republic.

Mark Walberg, Assistant Professor of Pharmacy Practice, 2009, PhD, University of the Pacific, 2009; PharmD, University of the Pacific, 2006; MA, University of California, Los Angeles, 2003; BS, University of California, Los Angeles, 2001.

Paul J. Williams, Professor of Pharmacy Practice, 1982, PharmD, University of the Pacific, 1974; MS, University of North Carolina, 1980.

Joseph A. Woelfel, Associate Professor of Pharmacy Practice, 2006, BS Pharm, 1970; MS 1972; PhD, University of the Pacific, 1978

Liang Xue, Assistant Professor, 2007, BS, Fudan University, Shanghai, China, 1996; PhD, Clemson University, 2004.

Qinliang Zhao, Assistant Professor, 2010, BS, Zhejiang University, Hangzhou, China, 2003; PhD, Texas A&M, 2007.

## Master of Science in Pharmaceutical and Chemical Sciences

Students must complete a minimum of 32 units with a Pacific cumulative grade point average of 3.0 in order to earn the master of science degree in pharmaceutical and chemical sciences.

### I. Category I (minimum 8 units)

|                              |   |     |
|------------------------------|---|-----|
| PCSP 201                     | Statistics and Experimental Design  | 3   |
| PCSP 203                     | Information and Laboratory Management   | 1   |
| PCSP 209                     | Technical Writing and Presentation  | 1   |
| PCSP 263                     | Analytical Techniques in Pharmaceconomics and Health Care Outcomes and Services | 4   |
| Select one of the following: |   | 3-4 |
| PCSP 205                     | Instrumental Analytical Chemistry   |     |
| PCSP 207                     | Bioanalytical Techniques  |     |
| PCSP 208                     | Applied Pharmaceutical Analysis   |     |

### II. Category II (minimum 7 units)

|          |  |     |
|----------|--|-----|
| PCSP 283 | Multidisciplinary Project  | 1   |
| PCSP 295 | Graduate Seminar (Required to register once every academic year) | 1   |
| PCSP 297 | Graduate Research  | 1-4 |
| PCSP 299 | Thesis   | 1-6 |

### Thesis – minimum required and elective courses in specialized area :

|  |              |
|--|--------------|
| <b>Thesis - minimum required and elective courses in specialized area:</b> | <b>Units</b> |
| Categories 1 and 2   | 12           |

Total minimum required units for MS degree: **32 units**

*Note: Students are encouraged to complete coursework during the early part of their graduate studies so that the latter part of the program can be spent on full-time research.*

## Thesis Requirement

Students conduct research, write a thesis and complete a final oral defense of their thesis. The thesis is based upon a research project that constitutes a contribution to knowledge, or the student must design and evaluate a unique procedure or program in their field. A minimum of two semesters of full-time residence at the University is required following the baccalaureate degree or the equivalent in part-time residence during summers. The average time to complete the program is approximately 2-3 years.

## Thesis Committee

The committee is formed after a student selects an advisor for his/her research. The committee assists the student in designing a plan of study, providing the student with guidance in his/her thesis research and monitoring the student's research progress.

## Doctor of Philosophy in Pharmaceutical and Chemical Sciences

Students must complete a minimum of 45 units with a Pacific cumulative grade point average of 3.0 in order to earn the doctor of philosophy degree in Pharmaceutical and Chemical Sciences.

### I. Category I (minimum 8 units)

|          |                                       |   |
|----------|---------------------------------------|---|
| PCSP 201 | Statistics and Experimental Design    | 3 |
| PCSP 203 | Information and Laboratory Management | 1 |
| PCSP 209 | Technical Writing and Presentation    | 1 |

|                              |   |     |
|------------------------------|---|-----|
| PCSP 263                     | Analytical Techniques in Pharmaceconomics and Health Care Outcomes and Services | 4   |
| Select one of the following: |   | 3-4 |
| PCSP 205                     | Instrumental Analytical Chemistry   |     |
| PCSP 207                     | Bioanalytical Techniques  |     |
| PCSP 208                     | Applied Pharmaceutical Analysis   |     |

## II. Category II (minimum 14 units)

|          |  |     |
|----------|--|-----|
| PCSP 283 | Multidisciplinary Project  | 1   |
| PCSP 387 | Internship   | 2-4 |
| PCSP 395 | Graduate Seminar (Required to register once every academic year) | 3   |
| PCSP 397 | Graduate Research (6 units is minimum total degree requirement)  | 6   |
| PCSP 399 | Dissertation (2 units is minimum total degree requirement)       | 2   |

|   |       |
|---|-------|
| Minimum required and elective courses in specialized areas: | Units |
| Category 1 and Category 2                                   | 22    |

Total minimum Required Units for PhD: **45 units**

*Note: Students are encouraged to complete coursework during the early part of their graduate studies so that the latter part of the program can be spent on full-time research.*

## Internship

Students complete an internship outside the University in either an industry setting or at another research institution. The internship provides valuable work experience and better prepares the student for future careers working within an interdisciplinary research and development team.

## Dissertation Committee

The committee is formed after a student selects an advisor for his/her research. The committee assists the student in designing a plan of study, providing the student with guidance in his/her research, and monitoring the student's research progress. The student ultimately presents his/her dissertation to the committee. The dissertation must provide a genuine contribution to knowledge in the student's focus area. The committee also conducts the dissertation defense. The defense is the final comprehensive oral examination based for the most part on the dissertation, but also covers the entire field of study.

## Qualifying Examinations

To be eligible for qualifying exams, the student must complete all core courses and required courses for dissertation research that the student has elected to pursue. Exams should be taken within an appropriate amount of time, preferably at the end of the second year. The content and requirements of the qualifying exams are defined by the research focus area and consist of comprehensive written and oral examinations.

## Specialized Areas

Complete required and elective courses in one of the following specialized areas:

### A. Bioanalytical and Physical Chemistry (minimum 8 units)

#### Required Courses

|          |                                  |   |
|----------|----------------------------------|---|
| PCSP 240 | Molecular Spectroscopy           | 4 |
| PCSP 244 | High-Resolution NMR Spectroscopy | 4 |
| PCSP 247 | Mass Spectrometry                | 4 |

#### Preferred Elective Courses

|          |  |   |
|----------|--|---|
| PCSP 206 | Models and Concepts in Chemistry         | 4 |
| PCSP 215 | Molecular Modeling and Drug Design       | 4 |
| PCSP 217 | Drug Biotransformation                   | 3 |
| PCSP 222 | Thermodynamics of Pharmaceutical Systems | 3 |

|          |   |   |
|----------|---|---|
| PCSP 230 | Molecular Pharmacology of Nucleic Acid      | 3 |
| PCSP 234 | Neurochemical Pharmacology                  | 3 |
| PCSP 237 | Cell Culture Techniques                     | 3 |
| PCSP 241 | Advanced Organic/Bioorganic Chemistry       | 4 |
| PCSP 242 | Selected Topics: Advanced Organic Chemistry | 4 |
| PCSP 243 | Applied Computational Chemistry             | 4 |
| PCSP 245 | Proteins and Nucleic Acids                  | 3 |
| PCSP 248 | Enzymology                                  | 4 |

Total minimum required and elective courses in specialized area:

|                              |       |
|------------------------------|-------|
| <b>Category/Sub-category</b> | Units |
| PhD                          | 22    |
| Thesis (MS)                  | 14    |

### B. Chemical Synthesis, Drug Discovery and Design (minimum 12 units)

#### Required Courses

|          |                                       |   |
|----------|---------------------------------------|---|
| PCSP 215 | Molecular Modeling and Drug Design    | 4 |
| PCSP 241 | Advanced Organic/Bioorganic Chemistry | 4 |
| PCSP 244 | High-Resolution NMR Spectroscopy      | 4 |

#### Preferred Elective Courses

|          |   |   |
|----------|---|---|
| PCSP 206 | Models and Concepts in Chemistry            | 4 |
| PCSP 211 | Drug Design                                 | 4 |
| PCSP 213 | Biotransformation of Pharmaceutical Agents  | 3 |
| PCSP 215 | Molecular Modeling and Drug Design          | 4 |
| PCSP 217 | Drug Biotransformation                      | 3 |
| PCSP 222 | Thermodynamics of Pharmaceutical Systems    | 3 |
| PCSP 230 | Molecular Pharmacology of Nucleic Acid      | 3 |
| PCSP 234 | Neurochemical Pharmacology                  | 3 |
| PCSP 237 | Cell Culture Techniques                     | 3 |
| PCSP 242 | Selected Topics: Advanced Organic Chemistry | 4 |
| PCSP 245 | Proteins and Nucleic Acids                  | 3 |
| PCSP 247 | Mass Spectrometry                           | 4 |
| PCSP 248 | Enzymology                                  | 4 |

Total minimum required and elective courses in specialized area:

|                              |       |
|------------------------------|-------|
| <b>Category/Sub-category</b> | Units |
| PhD                          | 22    |
| Thesis (MS)                  | 14    |

### C. Pharmacoconomics and Health Care Outcomes and Services

Courses are chosen with advisor.

### D. Drug Targeting and Delivery (minimum 9 units)

|          |  |   |
|----------|--|---|
| PCSP 222 | Thermodynamics of Pharmaceutical Systems | 3 |
| PCSP 223 | Pharmacokinetics and Pharmacodynamics    | 3 |
| PCSP 224 | Diffusion in Pharmaceutical Sciences     | 3 |

#### Preferred Elective Courses

|          |  |   |
|----------|--|---|
| PCSP 207 | Bioanalytical Techniques                         | 3 |
| PCSP 217 | Drug Biotransformation                           | 3 |
| PCSP 225 | Pharmaceutical Technologies                      | 2 |
| PCSP 228 | Mathematical Modeling in Pharmaceutical Research | 3 |
| PCSP 229 | Advances in Drug Delivery Systems                | 3 |
| PCSP 237 | Cell Culture Techniques                          | 3 |

Total minimum required and elective courses in specialized area:

| Category/Sub-category | Units |
|-----------------------|-------|
| PhD                   | 22    |
| Thesis (MS)           | 14    |

### E. Molecular-Cellular Pharmacology and Toxicology (minimum 10 units)

|          |   |   |
|----------|---|---|
| PCSP 231 | Molecular Pharmacology I                      | 4 |
| PCSP 232 | Mechanisms of Drug Addiction II               | 4 |
| PCSP 235 | Current Topics in Pharmacology and Toxicology | 2 |

#### Preferred Elective Courses

|          |  |   |
|----------|--|---|
| PCSP 205 | Instrumental Analytical Chemistry          | 4 |
| PCSP 213 | Biotransformation of Pharmaceutical Agents | 3 |
| PCSP 233 | Molecular Pharmacology III                 | 4 |
| PCSP 236 | Selected Topics: Advanced Toxicology       | 2 |
| PCSP 237 | Cell Culture Techniques                    | 3 |

Or other approved electives.

Preferred Elective courses can be any graduate level course(s) from any department consisting of 3 or more units as suggested by the faculty advisor. The above list is the suggested electives (currently offered or tentatively planned.)

Total minimum required and elective courses in specialized area:

| Category/Sub-category | Units |
|-----------------------|-------|
| PhD                   | 22    |
| Thesis (MS)           | 14    |

Pharm Chem Sciences Courses

#### PCSP 201. Statistics and Experimental Design. 3 Units.

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 nonparametric measures of association and elements of good experimental design are also included. Graduate standing.

#### PCSP 203. Information and Laboratory Management. 1 Unit.

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). Graduate standing.

#### PCSP 204. Introduction to Nanotechnology. 4 Units.

The course provides an overview of Molecular Nanotechnology. It shows 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 or as they are planned for the future, will be discussed. Graduate standing or permission of instructor.

#### PCSP 205. Instrumental Analytical Chemistry. 4 Units.

Lectures focus on the theory and physical principles of instruments for the analysis of matter. Laboratory lecturer describes the actual operation of instruments. Students gain hands-on experience with the operation of instruments. Graduate standing.

#### PCSP 206. Models and Concepts in Chemistry. 4 Units.

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. Many chemical problems from organic, inorganic, and transition metal chemistry and biochemistry are presented and the applicability of the various models and concepts as well as their limitations are demonstrated. Graduate standing or permission of instructor.

#### PCSP 207. Bioanalytical Techniques. 3 Units.

Students are introduced to techniques of bioanalysis for the pharmaceutical and chemical sciences. The course provides a conceptual understanding and practical familiarity with techniques used for analysis of proteins and nucleic acids. Recommended: Basic biochemistry.

#### PCSP 208. Applied Pharmaceutical Analysis. 4 Units.

Students study analytical methods applied for the assessment of pharmaceutical quality, and the identification and quantification of active pharmaceutical molecules and metabolites in biological samples. Prerequisite: any analytical Chemistry or Biology background and permission of instructor.

#### PCSP 209. Technical Writing and Presentation. 1 Unit.

This course covers common written and oral forms of communication and scientific material. Graduate standing.

#### PCSP 211. Drug Design. 4 Units.

Students study modern methods used in the design of new drugs. Target selection, lead compound discovery and molecular modifications to optimize activity are studied. Graduate standing or bachelor's degree and permission of instructor.

#### PCSP 213. Biotransformation of Pharmaceutical Agents. 3 Units.

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. Graduate standing in TJ Long School of Pharmacy & Health Sciences or in Chemistry Department, or permission of instructor.

#### PCSP 215. Molecular Modeling and Drug Design. 4 Units.

The course presents a thorough and in-depth overview of methods and techniques in computer assisted drug design (CADD) where especially the needs of the pharmaceutical industry are considered. Graduate standing or permission of instructor.

#### PCSP 217. Drug Biotransformation. 3 Units.

This course generally meets two times a week (two 75 minute 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 are discussed. Students need to submit a research proposal at the end of the course. Graduate standing or permission of instructor.

#### PCSP 221. Fundamentals of Dosage Forms. 3 Units.

In this course the fundamental physicochemical properties and composition of various dosage forms is taught. Graduate standing.

#### PCSP 222. Thermodynamics of Pharmaceutical Systems. 3 Units.

This is a classical course on the applications of thermodynamics to the study of pharmaceutical systems. The course includes a review of the basic principles of thermodynamics. These principles are used to describe and study physical and chemical transformations of pure substances and mixtures in pharmaceutical systems. Graduate standing or permission of instructor.

#### PCSP 223. Pharmacokinetics and Pharmacodynamics. 3 Units.

This course teaches critical concepts and basic principles of pharmacokinetics and pharmacodynamics. Such concepts and principles are required for the students to understand the drug behavior in the body. Graduate standing or permission of instructor.

#### PCSP 224. Diffusion in Pharmaceutical Sciences. 3 Units.

Students discuss diffusion theories, experimental methods, and application to pharmaceutical/biological systems. Prerequisites: CHEM 161 and MATH 033 or equivalent or permission of instructor.

#### PCSP 225. Pharmaceutical Technologies. 2 Units.

Students study theory and practice in industrial pharmacy that include pre-formulation, formulation and pharmaceutical manufacture. Prerequisites: PHAR 114, 123, 133. Graduate standing.

**PCSP 228. Mathematical Modeling in Pharmaceutical Research. 3 Units.**

Students study the mathematical modeling theory and application to problems in pharmaceutical research. Modeling is applied to three major areas: drug delivery, metabolic/biological cascades and pharmacological response kinetics. Prerequisites: PHAR 113 or permission of instructor. Recommended: MATH 057; PHAR 114 and PHAR 134.

**PCSP 229. Advances in Drug Delivery Systems. 3 Units.**

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 are covered. The biopharmaceutical rational and evaluation of such systems is also discussed. Graduate standing.

**PCSP 230. Molecular Pharmacology of Nucleic Acid. 3 Units.**

Students study 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. Graduate standing.

**PCSP 231. Molecular Pharmacology I. 4 Units.**

This is the first course in the Molecular Pharmacology series, effects of autonomic and central nervous system therapeutic agents and the mechanisms whereby these effects are induced. Drug classes are presented to illustrate the effects of drug classes in the treatment of disease. The molecular principles of drug action and receptor theory are covered. Enrollment in the PCSP program is required.

**PCSP 232. Mechanisms of Drug Addiction II. 4 Units.**

This is the second course in the Molecular Pharmacology series, effects of cardiovascular, endocrine, cancer chemotherapy, immunologic therapeutic agents and the mechanisms whereby these effects are induced. Drug classes will be presented to illustrate the effects of drug classes in the treatment of diseases. Enrollment in the PCSP program is required.

**PCSP 233. Molecular Pharmacology III. 4 Units.**

This is the third course in the Molecular pharmacology series, effects of antimicrobial, hematologic and gastrointestinal therapeutic agents and the mechanism whereby these are induced. Drug classes are presented to illustrate the effects of drug classes in the treatment of diseases. The mechanisms of drug toxicity are also covered. Enrollment in the PCSP program is required.

**PCSP 234. Neurochemical Pharmacology. 3 Units.**

Students study neurobiology of nerve cells and the neurochemical pharmacology associated with function of central and peripheral nervous systems. Graduate standing.

**PCSP 235. Current Topics in Pharmacology and Toxicology. 2 Units.**

Each week this course focuses on a different area of research interest in pharmacology and toxicology. It involves discussions of assigned research papers that provide students with a current perspective and understanding of issues and techniques associated with the selected research topics. Graduate standing in the PCSP program.

**PCSP 236. Selected Topics: Advanced Toxicology. 2 Units.**

This course teaches students the organ systems and mechanistic approach to toxicological assessment. Quantitative, environmental and regulatory aspects of toxicology are included as essential elements of toxicological evaluation. Graduate standing in the PCSP program or permission of instructor.

**PCSP 237. Cell Culture Techniques. 3 Units.**

This course teaches students basic techniques in mammalian cell culture. In addition, advanced topics of cellular techniques are demonstrated and discussed representative of current research methods. Permission of PCSP Program Director.

**PCSP 240. Molecular Spectroscopy. 4 Units.**

The basic theory behind infrared, visible, ultraviolet, and magnetic resonance spectroscopy are studied. The course includes the quantum mechanics of light absorption, atomic absorption and emission spectroscopy, vibrational spectroscopy of diatomic and polyatomic molecules, absorption and emission electronic spectroscopy and magnetic resonance spectroscopy. Graduate standing or permission of instructor.

**PCSP 241. Advanced Organic/Bioorganic Chemistry. 4 Units.**

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 CHEM 123 with a "C" or better.

**PCSP 242. Selected Topics: Advanced Organic Chemistry. 4 Units.**

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 CHEM 123 with a "C" or better.

**PCSP 243. Applied Computational Chemistry. 4 Units.**

Besides the normal laboratory experiments traditionally expected, modern chemists/biochemists, whether in the chemical/pharmaceutical industry or academia, perform "experiments" on the computer by calculating the outcome of chemical and biochemical reactions. This in silico chemistry has become an integral part of the education in chemistry and the present course will provide an introduction into this field by addressing a general audience of chemists/biochemists and students from neighboring fields.

**PCSP 244. High-Resolution NMR Spectroscopy. 4 Units.**

A study of one and two dimensional FT-NMR techniques used for structure elucidation of organic molecules. Emphasis is placed on understanding the capabilities and limitations of these techniques, the information they provide and the practical aspects of their implementation. Permission of instructor.

**PCSP 245. Proteins and Nucleic Acids. 3 Units.**

Students study the chemical, physical and biological properties of the proteins and nucleic acids and their constituents. Topics include 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 Units.**

Students study the fundamentals of mass spectrometry, theory, instrumentation and applications to organic and biological molecules. Prerequisite: PCSP 205.

**PCSP 248. Enzymology. 4 Units.**

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 254. Research Processes: Publications, Presentations, Grants and IRB. 3 Units.**

This course prepares graduate students in Pharmacoeconomics and Health Care Outcomes and Services as a successful researcher by gaining experience in the development of a research plan, obtaining approval of the Institutional Review Board, submission of an extramural grant, dissemination of the student findings at a national or international meeting, and submission of a manuscript to a peer-reviewed journal. Prerequisite may be taken concurrently: PCSP 201, or other comparable statistics course at the discretion of the course coordinator. Permission of the instructor is required.

**PCSP 255. Long Term Care Practice. 3 Units.**

This class covers the clinical pharmacy component of a long term facility with special emphasis on opportunities and research needs. Students study the systematic approach to monitor the drug therapy of the long term care patient. Graduate standing.

**PCSP 256. Health Services Management and Finance. 2 Units.**

Health Care Finance offers an introduction to accounting, financial theory and practice in health care settings. It is designed to familiarized students with financial concepts and issues confronting managers in the health and pharmaceutical sectors. Prerequisites: Admission to the PCSP graduate program and permission of the instructor.



**PCSP 257. Ambulatory Care Practice. 3 Units.**

Students examine the application of clinical pharmacy to ambulatory care settings in an affiliated clinic or community pharmacy. Special emphasis is placed on opportunities and research needs. Graduate standing.

**PCSP 258. Teaching and Evaluation of Learning and Competency. 2 Units.**

Student abilities in development as a teacher are developed in an interactive, evidence-based manner covering the major components of teaching, learning, evaluation and assessment. Prerequisites: Admission to the PCSP graduate program and permission of the instructor.

**PCSP 259. Topics in Acute Case Practice. 3 Units.**

Students examine the application and investigation of clinical pharmacy in acute care setting with emphasis on medical management of common diseases and rational drug selection and dosing. Graduate standing.

**PCSP 260. Advances in Neuropsychiatric Pharmaceutical Care. 2 Units.**

Students examine pharmaceutical care for the patient with neurologic and psychiatric disorders. Emphasis is placed on appropriate use of drug therapy in the management of these disorders. Graduate standing. Permission of instructor.

**PCSP 261. Advances in Cardiovascular Pharmaceutical Care. 3 Units.**

Students explore the application of Drug Therapy to patient care with assignments that expand the students' knowledge of background material that support therapeutic guidelines. Permission of instructor.

**PCSP 262. Vascular, Renal and Pulmonary Care. 4 Units.**

Students study the pharmaceutical care for the patient with cardiovascular, respiratory and renal diseases. Emphasis is placed on 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 263. Analytical Techniques in Pharmacoconomics and Health Care Outcomes and Services. 4 Units.**

This course prepares graduate students in Pharmacoconomics and Health Care Outcomes and Services to meet the challenges of a broad assortment of health services related research by providing fundamental principles and tools for the discipline. The class uses real world examples of research design, statistical evaluations and database selection and use to assess therapeutic, economic and humanistic outcomes. Prerequisites: PCSP 201 and PCSP 203.

**PCSP 264. Health Serv Rsrch Analysis. 3 Units.**

This course prepares graduate students in Pharmacoconomics and Health Care Outcomes and Services to meet the challenges posed by the needed to rapidly and accurately review, critique and assimilate information from health care and economic literature and to complete a full, advanced statistical analysis such as that required for the introduction and discussion sections of a research article or dissertation in pharmacoconomics and health care outcomes. Prerequisites: PCSP 201, 203, 263.

**PCSP 265. Health Care Economics. 2 Units.**

This course is a current medical literature based course and is designed to prepare graduate students in Pharmacoconomics and Health Care Outcomes and Services to meet challenges associated with understanding microeconomics terms and tools used in health care, medical literature and health care decision making processes. Readings, lectures and discussions emphasize processes used in economic decisions made by health care consumers, providers and third party payers. Primary topics include the demand for health care, how it may vary based on payment/payer options and the scope and supply of care available. Prerequisites: PCSP 263, 264, and permission of the instructor.

**PCSP 266. Pharmacoconomics and Microeconomics/Managerial Economics. 2 Units.**

This course is designed to prepare graduate students in Pharmacoconomics and Health Care Outcomes and Services to evaluate the applicability, importance and relevancy of pharmacoconomics, microeconomics and managerial economics in answering questions and solving problems within the US health care system. Additionally, after completion of this course, students can assess, apply, interpret and determine the appropriate utilization of pharmacoconomics, microeconomic, and managerial economic principles to address relevant healthcare issues and questions. Prerequisites: PCSP 201 and permission of the instructor.

**PCSP 270. Theory and Methodology of Simulation of Natural Rock Formation. 4 Units.**

This course is created particularly for PhD students of the Pharmaceutical and Chemical Sciences Program. It offers a comprehensive integration of multi-disciplinary sciences such as biology, life science, geoscience, ocean science, environment science, material science, etc. The course introduces some new breakthroughs and frontier discovery which reveal the mystery relationship between life science and geoscience. Upon completion of this course, PhD students are able to carry out professional lab and on-site tests and measurements. Graduate standing in chemistry, biology, geology, material science, environmental science or engineering or permission of instructor.

**PCSP 283. Multidisciplinary Project. 1 Unit.**

Students in the Pharmaceutical and Chemical Science Graduate Program design an interdisciplinary project based upon the relevant contributions of their backgrounds. Enrollment in PCS Graduate Program.

**PCSP 287. Internship. 1-4 Units.**

The internship offers an experiential learning program at a pharmaceutical/chemical/biotechnological industry, academic institution, government laboratory, 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. Graduate students that have completed Category I course work, or obtained permission of coordinator shall enroll in this course. For students in thesis/dissertation tracks, concurrence of thesis/dissertation adviser(s) is required.

**PCSP 291. Independent Study. 1-4 Units.**

Independent Study is restricted to masters or doctoral (PhD) candidates. It may be repeated with permission as progress warrants. No more than eight credits may be used toward doctoral degree requirements. The student must be in good academic standing. Approval of the required contract for Independent Graduate Study is required. Graduate standing and permission of the instructor.

**PCSP 295. Graduate Seminar. 1 Unit.**

This seminar presents 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 attend seminars without official enrollment. PCSP faculty members present a short talk on their research areas at the beginning of the fall semester each year. Graduate standing.

**PCSP 297. Graduate Research. 1-4 Units.**

Graduate Research is limited to masters or doctoral (PhD) candidates. It may be repeated with permission as progress warrants. No more than eight credits may be used toward doctoral degree requirements. Admission to the graduate program and permission of research director.

**PCSP 299. Thesis. 1-6 Units.**

This course provides one-to-one work by student with faculty research mentor to plan, organize, conduct, evaluate and write an original research project as a thesis for partial fulfillment of the MS degree. Admission to MS thesis program (PCSP) and permission of research advisor.

### **PCSP 387. Internship. 1-4 Units.**

This internship offers an experiential learning program at a pharmaceutical/chemical/biotechnological industry, academic institution, government laboratory, 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. Graduate Standing with completed Category I course work or permission of coordinator. For students in thesis/dissertation tracks, concurrence of thesis/dissertation adviser(s) is required.

### **PCSP 391. Independent Study. 1-4 Units.**

Independent Study is restricted to masters or doctoral (PhD) candidates. It may be repeated with permission as progress warrants. No more than eight credits may be used toward doctoral degree requirements. The student must be in good academic standing. Approval of the required contract for Independent Graduate Study is required. Graduate standing and permission of the instructor.

### **PCSP 391D. Independent Study. 1-4 Units.**

### **PCSP 395. Graduate Seminar. 1 Unit.**

This seminar presents 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 attend seminars without official enrollment. PCSP faculty members present a short talk on their research areas at the beginning of the fall semester each year. Graduate standing.

### **PCSP 397. Graduate Research. 1-4 Units.**

Graduate Research is limited to masters or doctoral (PhD) candidates. It may be repeated with permission as progress warrants. No more than eight credits may be used toward doctoral degree requirements. Admission to the graduate program and permission of research director.

### **PCSP 397D. Graduate Research. 1-4 Units.**

### **PCSP 397E. Graduate Research. 1-4 Units.**

### **PCSP 399. Dissertation. 1-6 Units.**

This course is only open to doctoral (PhD) candidates. No more than eight credits may be used toward doctoral degree requirements. Admission to PhD program (PCSP) and permission of research advisor.

## **Physical Therapy**

Christine R. Wilson, Chair

### **Programs Offered**

Doctor of Physical Therapy

### **Program Philosophy**

Physical therapists are experts in human movement and function who serve patients/clients at all points along the continuum between health and optimal physical function and disease in a wide variety of circumstances and settings. Physical therapists must be autonomous, highly skilled practitioners to meet the needs of their patients and the expectations of society. These skills are optimally developed in a doctoral level graduate educational program that includes learning experiences in the cognitive, affective and psychomotor domains and emphasizes the following:

#### **Basic Sciences**

Basic sciences are the foundation on which the theory and practice of physical therapy is based. Emphasis on basic sciences provides students with a solid framework in which to view established theory and practice of physical therapy in the educational setting, to evaluate new theory and practice as they move to the clinical setting, and to contribute to theory and practice of physical therapy in the future. Additionally, a solid foundation in basic sciences provides students with the tools needed for

clinical reasoning based on evidence, and it provides a common language with which to communicate with other clinicians and scientists.

### **Professional Behavior**

Professional behavior is an essential component of professional success and clinical excellence. Students enter physical therapy programs with a wide variety of past experiences. What constitutes appropriate professional behavior for a physical therapist may not be immediately obvious to all students; therefore professional behavior must be consciously included in the curriculum.

### **Clinical Experiences**

Ongoing and progressive clinical exposure promotes accelerated learning and development of clinical competence and facilitates continued student engagement.

### **Integration of Clinical Relevance throughout the Curriculum**

Integration of clinical relevance in all courses promotes efficient acquisition of clinical reasoning skills.

### **Student-Centered Learning**

Student-Centered Learning promotes intellectual rigor, depth, and accountability for each individual student and fosters the development of the independent learner.

### **Excellence in Teaching**

Excellence in teaching practices result in a deep and efficient learning experience for the student, promotes clinical and intellectual excellence, and fosters lifelong learning.

### **Conclusion**

Commitment to a core curricular philosophy that involves an emphasis on basic sciences, professional behavior, clinical relevance in all courses, early and progressive clinical experiences, student centered learning, and excellence in teaching provides the foundation for an efficient and concise educational experience for students. The field of Physical Therapy and its practice is a dynamic and evolving profession. Following a rigorous and balanced 25 month professional program, graduates of Pacific's Doctor of Physical Therapy program are prepared to meet the needs of their patients and society and to develop their expertise through their commitment to lifelong learning.

### **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 furthering the body of knowledge of physical therapy and providing leadership 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.

Pacific's Doctor of Physical Therapy program is committed to:

1. Producing high caliber, practice-ready graduates evidenced by students' abilities to:
  - demonstrate safety and competence with current clinical skills;
  - demonstrate clinical reasoning that utilizes both the best available scientific evidence and the patient's perspective;
  - demonstrate cultural competence;
  - demonstrate attributes consistent with effective leadership and advocacy;

- demonstrate accurate self-reflection; and
  - demonstrate characteristics consistent with long-long learning.
2. Contributing to the body of knowledge of the profession evidenced by students' abilities to:
    - engage in scholarly pursuits.
  3. Providing leadership in the University and profession evidenced by students' abilities to:
    - hold leadership positions in the program, School and University, as well as local, national and international professional organizations.
  4. Participating in on-going assessment to maintain currency and relevance in teaching and practice evidenced by students' abilities to:
    - participate in ongoing assessment activities.
  5. Engaging in local, regional, national, and international service evidenced by students' abilities to:
    - engage in service.
  6. Fostering diversity and cultural competence evidenced by students' abilities to:
    - demonstrate cultural competence.
  7. Promoting life-long relationships with the Pacific Physical Therapy community evidenced by students' abilities to:
    - participate in alumni activities.

## Admission Requirements

For the most current information regarding the application process and requirements, please visit the web site: [www.pacific.edu/dpt](http://www.pacific.edu/dpt).

## Physical Therapy Faculty

Christine R. Wilson, Department Chair, Associate Professor of Physical Therapy, 2003, BS, State University of New York - Downstate Medical Center, 1978; MA, Columbia University, 1983; PhD, McGill University, 1995.

Casey Nesbit, Assistant Professor and Director of Clinical Education, 2013, BS, Virginia Commonwealth University, 1982; MS, University of Oklahoma, 2005; DPT, Marymount University, 2008; DSc, University of Oklahoma, 2011

Sandra Bellamy, Associate Professor, 2004, BA, 1997; MS, 1999; DPT, University of the Pacific, 2003.

Todd E. Davenport, Assistant Professor, 2007, BS, Willamette University, 1998; DPT, University of Southern California, 2002.

Jim K. Mansoor, Professor, 1993, BA, California State University, Sacramento, 1980; MS, 1989; PhD, University of California, Davis, 1996.

Cathy Peterson, Associate Professor, 2002, BS, University of Iowa, 1989; MSPT, Des Moines University, 1991; EdD, University of San Francisco, 2002.

Tamara L. Phelan, Associate Professor, 2001, BS, Tennessee State University, 1993; MS, Ola Grimsby Institute, 1997; DMT, Ola Grimsby Institute, Inc., San Diego, CA, 2000; EdD, University of the Pacific, 2008.

## The 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 California and throughout the US. 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 (in accordance with the Standards of Academic Success delineated in the Physical Therapy Student Handbook);
2. Advancement 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- in any required course at the 300 level is counted toward the degree program (See the Standards of Academic Success in the Physical Therapy Student Handbook).

## 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 is made by faculty before recommending the awarding 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 highly competitive 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.
  - c. Biological science, chemistry and physics courses must all include significant laboratory experiences. Prerequisite science courses must be taken within the last ten years.
  - d. 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 that includes at least 25 hours with inpatients 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 or Cell Biology

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 that combines anatomy and physiology does not meet the anatomy and physiology requirements. However, a two-semester sequence of the combined subjects does meet these requirements.*

### 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 is 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 credits/4-5 quarter hours minimum. Introduction to the study of human physiological responses and adaptations that results from muscular activity, including demonstration and measurement of basic physiological responses that occur with exercise.

### 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.

## Doctor of Physical Therapy

Students must complete a minimum of 100 units with a Pacific cumulative grade point average of 3.0 in order to earn the doctor of physical therapy degree.

### First Year

| Fall              |  | Units     |
|-------------------|--|-----------|
| PTHR 311          | Gross Human Anatomy                                | 6         |
| PTHR 312          | Exercise Physiology in Physical Therapy            | 2         |
| PTHR 313          | Clinical Kinesiology I                             | 3         |
| PTHR 314          | Introduction to Physical Therapist Practice        | 1         |
| PTHR 316          | Physical Therapy Examination and Evaluation        | 4         |
| PTHR 318          | Physical Therapy Patient Care Skills               | 1         |
| PTHR 319          | Physical Agents                                    | 1         |
| <b>Term Units</b> |  | <b>18</b> |
| Winter            |  |           |
| PTHR 321          | The Nervous System and Behavior                    | 5         |
| PTHR 323          | Clinical Kinesiology II                            | 3         |
| PTHR 326          | Therapeutic Exercise: Basic Theory and Application | 4         |
| PTHR 328          | Research: Theory and Application                   | 2         |
| PTHR 329          | Pathophysiology                                    | 4         |
| <b>Term Units</b> |  | <b>18</b> |
| Spring            |  |           |
| PTHR 332          | Electrotherapy                                     | 2         |
| PTHR 333          | Analysis of Movement Through the Life Span         | 3         |

| PTHR 334          | Medical Conditions and Screening for Medical Disease          | 4            |
|-------------------|---|--------------|
| PTHR 335          | Cardiovascular and Pulmonary Physical Therapy                 | 4            |
| PTHR 336          | Clinical Experience I   | 1            |
| PTHR 338          | Clinical Experience II  | 1            |
| PTHR 339          | Motor Learning and Motor Control                              | 2            |
| PTHR 398          | Research Literature Review                                    | 1            |
| <b>Term Units</b> |   | <b>18</b>    |
| Second Year       |   |              |
| Fall              |   |              |
| PTHR 341          | Integumentary Physical Therapy                                | 1            |
| PTHR 342          | Administration and Management of Physical Therapy Services I  | 2            |
| PTHR 344          | Neuromuscular Physical Therapy                                | 5            |
| PTHR 345          | Advanced Clinical Problems I                                  | 1            |
| PTHR 346          | Seminar   | 2            |
| PTHR 347          | Musculoskeletal Physical Therapy I                            | 5            |
| PTHR 351          | Prosthetics and Orthotics                                     | 1            |
| PTHR 380          | Medical Spanish for Physical Therapists (Elective)            | 0-1          |
| PTHR 391 or 393   | Graduate Independent Study (Elective)                         | 0-1          |
| <b>Term Units</b> |   | <b>17-19</b> |
| Winter            |   |              |
| PTHR 343          | Geriatric Physical Therapy                                    | 1            |
| PTHR 352          | Administration and Management of Physical Therapy Services II | 2            |
| PTHR 353          | Diagnostic Imaging for Physical Therapists                    | 2            |
| PTHR 354          | Pediatric Physical Therapy                                    | 1            |
| PTHR 355          | Advanced Clinical Problems II                                 | 1            |
| PTHR 356          | Psychosocial Aspects of Illness and Disability                | 2            |
| PTHR 357          | Musculoskeletal Physical Therapy II                           | 2            |
| PTHR 358          | Clinical Education and Professional Behavior                  | 1            |
| PTHR 359          | Clinical Internship I   | 4            |
| PTHR 381          | Soft Tissue Mobilization and Taping                           | 1            |
| PTHR 391 or 393   | Graduate Independent Study (Elective)                         | 0-1          |
| <b>Term Units</b> |   | <b>17-18</b> |
| Spring            |   |              |
| PTHR 368          | Clinical Internship II  | 6            |
| PTHR 369          | Clinical Internship III                                       | 6            |
| PTHR 391 or 393   | Graduate Independent Study (Elective)                         | 0-1          |
| <b>Term Units</b> |   | <b>12-13</b> |

Total Unit: 100-104

### Physical Therapy Courses

#### PTHR 311. Gross Human Anatomy. 6 Units.

This course involves a detailed regional analysis of the structure of the human body that includes the lower extremity, upper extremity, head, neck and trunk, and thoracic, abdominal, and pelvic cavities. Functional correlates to the structures are also presented and discussed. The course has a lecture component as well as a cadaver dissection based laboratory/discussion component. Prerequisites: Admission to the entry level DPT program or permission of instructor.

#### PTHR 312. Exercise Physiology in Physical Therapy. 2 Units.

This course is designed to give the physical therapy student a strong foundational knowledge of the physiological response to exercise under normal and pathological conditions, and the mechanisms responsible for those changes. Prerequisite: Admission into the DPT program or permission of instructor.

#### PTHR 313. Clinical Kinesiology I. 3 Units.

This course introduces students to the basic principles of kinesiology and biomechanics. It emphasizes the integration of basic science knowledge from multiple disciplines into an applied clinical approach to the study of human movement. Course content focuses on the basis of human movement from cells to systems, as well as normal and pathological movement of the lower extremity. Prerequisite: Admission into the DPT program or permission of instructor.

**PTHR 314. Introduction to Physical Therapist Practice. 1 Unit.**

This course introduces students to the principles and practice of physical therapy. Students explore the history and the role of the profession of physical therapy in the healthcare system and as a member of the healthcare team. Students begin to develop professional behaviors and communication skills required to function in that role. This course includes an introduction to the various practice areas of Physical Therapy. Prerequisite: Admission into the DPT program or permission of instructor.

**PTHR 316. Physical Therapy Examination and Evaluation. 4 Units.**

This lecture and laboratory course provides an overview of basic examination procedures and clinical reasoning approaches used throughout the practice of physical therapy. Course content includes history-taking, vital signs, inspection, palpation, range of motion measurement, manual muscle testing, neurologic testing, selected special tests, and other functional tests. Prerequisite: Admission into the DPT program or permission of instructor.

**PTHR 318. Physical Therapy Patient Care Skills. 1 Unit.**

This course introduces the students to the basic principles and practice of patient care in physical therapy. Course content includes patient education, bed mobility and related techniques, transfers and body mechanics, gait devices, wheelchairs, documentation, and aseptic bandaging techniques. Additionally, students are introduced to soft tissue mobilization. Prerequisite: Admission into the DPT program or permission of instructor.

**PTHR 319. Physical Agents. 1 Unit.**

This course enables the student to properly select and safely and competently apply the various physical agents used by physical therapists. Topics covered include physiological responses and indications, contraindications and precautions for each modality. Case studies are used to illustrate the principles of evaluation and treatment planning. Prerequisite: Admission into the DPT program or permission of instructor.

**PTHR 321. The Nervous System and Behavior. 5 Units.**

This course is designed to give the student an in-depth understanding to 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 previous DPT courses or permission of instructor.

**PTHR 323. Clinical Kinesiology II. 3 Units.**

This course is a continuation of PTHR 313 and extends the examination of normal and pathological human movement to the upper extremities, trunk and TMJ regions. Basic biomechanical and kinesiological principles are presented. The relationship of these principles to the clinical environment is stressed. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 326. Therapeutic Exercise: Basic Theory and Application. 4 Units.**

This course provides an introduction to the theory and application of therapeutic exercise in physical therapist practice. Students gain an understanding of the physiological effects of training and de-training on the human body and develop the evaluative skills necessary to prescribe a therapeutic exercise plan. Students learn therapeutic exercise techniques for addressing strength, power, endurance, balance, stability, motor control and neuromuscular re-education in a variety of patient populations. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 328. Research: Theory and Application. 2 Units.**

This course helps the student develop an understanding of the scientific method of inquiry, research design and methodologies, critical analysis of research articles, critical analysis of health science concepts and findings, and development of clinical research projects through application of the basic principles of the scientific method. This course provides the fundamental background to help students understand evidence-based practice in Physical Therapy.

**PTHR 329. Pathophysiology. 4 Units.**

This course involves the detailed analysis of the structure, function and pathology of the organ systems of the body. Functional correlates to physical therapy care are included. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 332. Electrotherapy. 2 Units.**

This course enables the student to properly select safely and competently apply various therapeutic electrical devices. Topics include physiological responses, indications, contraindications, and precautions for the use of these electrical devices. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 333. Analysis of Movement Through the Life Span. 3 Units.**

This course focuses on the development and refinement of human movement from infancy to older adulthood. Students develop visual observation skills and handling techniques used to facilitate normal movement in various patient populations. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 334. Medical Conditions and Screening for Medical Disease. 4 Units.**

This course focuses on the process of screening for medical referral in the practice of physical therapy. The students learn the major signs and symptoms and medical and pharmacologic management of various medical diseases and conditions. This course also covers the possible sources of referred pain from systemic diseases that may mimic or increase pain caused by neuromuscular or musculoskeletal pathology. The students learn through the use of patient/client interview and other tests and measurements to recognize signs and symptoms that may require referral to other practitioners. During this process, the student applies principles of professional communication to interactions with patients, physicians and other health care providers. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 335. Cardiovascular and Pulmonary Physical Therapy. 4 Units.**

This course addresses physical therapy examination, evaluation of and interventions for the individual with cardiovascular and/or pulmonary disease. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 336. Clinical Experience I. 1 Unit.**

This course consists of a clinical experience under the supervision of a licensed, qualified physical therapist(s) for the purpose of practicing basic examination and intervention techniques and professional behaviors learned in the first two terms of the program. Prerequisite: Successful completion of all previous DPT courses or permission of the instructor.

**PTHR 338. Clinical Experience II. 1 Unit.**

This course consists of a clinical experience under the supervision of a licensed, qualified physical therapist(s) for the purpose of practicing basic examination and intervention techniques and professional behaviors learned in the first year of the program. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 339. Motor Learning and Motor Control. 2 Units.**

This course focuses on current theories of motor learning and motor control. These theories will provide a foundation for clinical diagnosis of movement and postural control disorders as well as assessment and treatment interventions. Prerequisites: Successful completion of all DPT courses or permission of instructor.

**PTHR 341. Integumentary Physical Therapy. 1 Unit.**

This course serves as an introduction to the integumentary system with a primary focus on wound and burn care. Topics include an in depth study of the healing process, the affect of disease on the healing process, and integumentary changes over the lifespan. Physical therapy evaluation and treatment options for burns and wounds of vascular, traumatic, and surgical origin are presented as well as precautions and contraindications associated with these interventions. Lab sessions cover wound assessments, debridement, adjunctive interventions, and dressings. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 342. Administration and Management of Physical Therapy Services I. 2 Units.**

This course is designed to provide an 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 various physical therapy practice settings that include the clinical practice of physical therapy, is specifically addressed. As appropriate, discussion of issues that face the profession of physical therapy is included. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 343. Geriatric Physical Therapy. 1 Unit.**

This course focuses on physical therapy management of the geriatric patient population. Students gain an understanding of age related changes in biology, physiology, anatomy and function as well as psychological issues and pathological changes associated with aging. Students integrate this knowledge with previous coursework to identify orthopedic, neurological, cardiopulmonary, cardiovascular and integumentary treatment consideration for geriatric patients. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 344. Neuromuscular Physical Therapy. 5 Units.**

This course focuses on examination, evaluation and intervention for patients and clients with neuromuscular dysfunction. This course emphasizes the establishment of a diagnosis by a physical therapist, identification of a realistic prognosis and selection of various intervention options based on best evidence. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 345. Advanced Clinical Problems I. 1 Unit.**

This course facilitates the integration of knowledge from all prior course work using case studies and actual patient contacts to perform physical therapy examination, evaluation, and intervention. Case studies and patient contacts may include examples of patients/clients with orthopedic, neurological, integumentary, cardiopulmonary, and multiple systems disorders. Students perform all elements of patient care under faculty supervision. Prerequisites: Successful completion of all prior portions of the DPT curriculum or permission of instructor.

**PTHR 346. Seminar. 2 Units.**

During this course students have opportunities to practice the range of physical therapy problem solving through analysis and discussion of various clinical scenarios. The continuum from evaluation to diagnosis to prognosis to treatment selection is incorporated into each presented discussion with emphasis on clinical decision-making and systems interaction approach to patient management. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 347. Musculoskeletal Physical Therapy I. 5 Units.**

This course integrates and expands the student's understanding of previous physical therapy coursework as it applies to the musculoskeletal setting, and introduces the student to manual therapy techniques. Students apply concepts from previous coursework to the examination, evaluation, and intervention of patient/clients in the musculoskeletal/orthopedic setting with a regional emphasis on the extremities. Additionally students develop basic competencies in manual therapy techniques for the extremities. Prerequisites: Successful completion of all prior coursework in the DPT program or permission of instructor.

**PTHR 351. Prosthetics and Orthotics. 1 Unit.**

This course provides the student with a basic understanding of the prescription, fitting and use of various orthotic and prosthetic devices. Biomechanical properties of normal and pathological gait for the user of lower extremity devices are discussed. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 352. Administration and Management of Physical Therapy Services II. 2 Units.**

This course emphasizes 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: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 353. Diagnostic Imaging for Physical Therapists. 2 Units.**

This course covers basic principles and interpretation of diagnostic imaging modalities as they apply to the physical therapist. This course covers medical imaging of musculoskeletal and neuromuscular/neurological systems. More common normal anatomical variants, as well as pathological variants and congenital anomalies are addressed. A discussion of special imaging techniques is also presented with the emphasis on CT scans and Magnetic Resonance Imaging (MRI). The course aims to prepare the students to recognize the importance of integrating imaging into clinical analysis of the patient's presentation and to incorporate the results of medical imaging studies when making clinical judgments. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 354. Pediatric Physical Therapy. 1 Unit.**

This course provides the student with a foundational understanding of issues and problems that affect the pediatric population addressed by the practice of physical therapy. Students are expected to incorporate knowledge of previous course work used in the evaluation and development of intervention strategies for patients in this population. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 355. Advanced Clinical Problems II. 1 Unit.**

This course provides for the integration of all prior course work that uses case studies and actual patient contacts to perform physical therapy examination, evaluation, and intervention. Case studies and patient contacts may include examples of patients/clients with orthopaedic, neurological, integumentary, cardiopulmonary, and multiple systems disorders. Students perform all elements of patient care under faculty supervision. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 356. Psychosocial Aspects of Illness and Disability. 2 Units.**

This course is a survey of psychological and social factors related to physical illness and disability. Scientific, theoretical and clinical literature are examined with emphasis on understanding the impact of illness and/or disability on the individual, the family, and the health care professional. This course also covers stress management and professional burn-out. Prerequisite: successful completion of all previous DPT courses or permission of instructor.

**PTHR 357. Musculoskeletal Physical Therapy II. 2 Units.**

This course is a continuation of PTHR 347. This course integrates and expands the student's understanding of previous physical therapy coursework as it applies to the musculoskeletal setting, and extends the student's knowledge of manual therapy techniques. Students apply concepts from previous coursework to the examination, evaluation, and intervention of patient/clients in the musculoskeletal/orthopedic setting with a regional emphasis on the spine and TMJ. Additionally students develop basic competencies in manual therapy techniques for the spine and TMJ. Prerequisites: Successful completion of all prior coursework in the DPT program or permission of instructor.

**PTHR 358. Clinical Education and Professional Behavior. 1 Unit.**

This course prepares students for their full-time clinical experiences. Students are oriented to the performance instrument that is used to evaluate their clinical performance. Teaching and learning methods used by clinical instructors are discussed, and students explore options for problem-solving and conflict resolution in the clinical setting. Through lectures, discussions, and group activities, students identify the cognitive, psychomotor, and affective behaviors that lead to success in the clinical environment. Prerequisite: Successful completion of all previous DPT courses or permission of instructor. Graded Pass/No credit only.

**PTHR 359. Clinical Internship I. 4 Units.**

This course consists of a full-time clinical experience under the supervision of a licensed physical therapist (designated as "Clinical Instructors" aka "CI") at specified facilities. Students have the opportunity to perform clinical rotations in a variety of clinical settings. Three Clinical Internships occur between Winter/Spring/Fall sessions of the final graduate year. By conclusion of Clinical Internship III, students are required to complete one acute care experience and one outpatient clinical experience. A third experience is assigned according to student interest and clinical availability. Each rotation should be in a physically different clinical setting to provide the student with a well rounded education and to prepare him/her for entry level practice, as recognized by Commission on Accreditation in Physical Therapy Education. Prerequisite: Successful completion of all DPT courses or permission of instructor.

**PTHR 368. Clinical Internship II. 6 Units.**

This course consists of a full-time clinical experience under the supervision of licensed physical therapists (designated as "Clinical Instructors" aka "CI") at specified facilities. Students have the opportunity to perform clinical rotations in a variety of clinical settings. Three Clinical Internships occur between Winter/Spring/Fall sessions of the final graduate year. By conclusion of Clinical Internship III, students are required to complete on acute care experience and one outpatient clinical experience. A third experience is assigned according to student interest and clinical availability. Each rotation should be in a physically different clinical setting to provide the student with a well rounded education and to prepare him/her for entry level practice, as recognized by Commission on Accreditation in Physical Therapy Education. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 369. Clinical Internship III. 6 Units.**

This course consists of a full-time clinical experience under the supervision of licensed physical therapists (designated as "Clinical Instructors" aka "CI") at specified facilities. Students have the opportunity to perform clinical rotations in a variety of clinical settings. Three Clinical Internships occur between Winter/Spring/Fall sessions of the final graduate year. By conclusion of Clinical Internship III, students are required to complete one acute care experience and one outpatient clinical experience. A third experience is assigned according to student interest and clinic availability. Each rotation should be in a physically different clinical setting to provide the student with a well rounded education and to prepare him/her for entry level practice, as recognized by Commission on Accreditation in Physical Therapy Education. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

**PTHR 380. Medical Spanish for Physical Therapists. 1 Unit.**

This course teaches the basic Spanish grammar, vocabulary and sentence structure necessary to communicate with patients in a physical therapy and/or medical setting. The course consists primarily of lectures and basic conversational interaction in Spanish. Prerequisites: Successful completion of all previous DPT course work or permission of the instructor.

**PTHR 381. Soft Tissue Mobilization and Taping. 1 Unit.**

Course teaches both soft tissue mobilization techniques for the various regions and structures of the human body as well as taping and strapping techniques to support and/or facilitate motion. The course consists primarily of labs with demonstration and supervised practice of techniques. Prerequisite: Successful completion of all previous DPT course work or permission of the instructor.

**PTHR 391. Graduate Independent Study. 1-3 Units.****PTHR 393. Special Topics. 1-4 Units.****PTHR 398. Research Literature Review. 1 Unit.**

This course helps the student apply the basic principles of research methods to the professional literature and to critically analyze new concepts and findings in that literature. The student chooses a research topic in health science, performs a literature search of primary research articles related to their topic, critically analyzes those research articles, and writes a related literature paper summarizing and synthesizing the information gathered from their literature research. Prerequisite: Successful completion of all previous DPT courses or permission of instructor.

## Speech-Language Pathology

Robert Hanyak, Chair

### Program Offered

#### Master of Science in Speech-Language Pathology

#### Mission

Study and research in this department focus on normal and abnormal speech, language and hearing processes. Students are prepared for professional careers in the field of Speech-Language Pathology. Clinical experience which supplements the students' academic preparation is obtained in the University's Speech, Hearing and Language Center, Scottish Rite Language Center, hospitals, clinics and schools. This program is designed to provide academic, clinical, and research experiences leading to the Master of Science degree, the Certificate of Clinical Competence in Speech-Language Pathology and California licensure in Speech-Language Pathology. Students may also qualify for the California Speech-Language Pathology Services Credential.

The Master's degree program in Speech-Language Pathology is accredited by the Council of Academic Accreditation of the American Speech-Language-Hearing Association. All students must successfully complete clinical practicum requirements as an inherent part of the department program. A prerequisite to the participation in clinical practicum is admission to degree candidacy and/or permission of the departmental faculty. To receive a master's degree in Speech-Language Pathology, each student must demonstrate clinical competence as well as academic success. Clinical competence means:

1. The ability to identify individuals with communication handicaps;
2. The ability to perform comprehensive evaluation of individuals with communication handicaps;
3. The ability to effect positive changes in the communication skills of individuals with communication handicaps;
4. The ability to relate effectively to clients, their families and fellow professionals. Assessment of these competencies will be made by the faculty before recommending award of the degree.

### Speech-Language Pathology Faculty

Robert E. Hanyak, Chair and Associate Professor of Speech-Language Pathology, 1985, BA, University of the Pacific, 1979; MS, University of Utah, 1981; AuD, University of Florida, 2005.

Heidi Germino, Assistant Clinical Professor of Speech-Language Pathology, Director, Scottish Rite Center, 2007, BA, University of the Pacific, 1990; MA, 1992.

Amy Wusstig, Assistant Clinical Professor of Audiology, Clinical Director, 2010, B.S. Speech Pathology and Audiology, California State University, Sacramento, 2004; AuD, Utah State University, 2008.

Larry Boles, Professor of Speech-Language Pathology, 2010, BA, San Francisco State, 1978; M.A., San Francisco State, 1982; Ph.D., University of Arizona, 1995.

Loretta Dittrich, Clinical Education Coordinator, 2009, BA, California State University Stanislaus, 1986; MA, University of the Pacific, 1988.

Jill Duthie, Assistant Professor of Speech-Language Pathology, 2006, BA, University of California Santa Barbara, 1972; MA, California State University Northridge, 1976; PhD, University of Oregon, 2005.

Simalee Smith-Stubblefield, Associate Professor, 1983, BS, University of Wyoming, 1976; MA, University of the Pacific, 1982

Michael Susca, Associate Professor of Speech-Language Pathology, 2001, BS, University of California, Santa Barbara, 1975; MS, University of New Mexico, 1977; PhD, University of Nebraska-Lincoln, 2001.

Jeannene Ward-Lonergan, Professor, 1999, BS, St. Joseph's College, 1984; MS, Boston University, 1989; University of Connecticut, 1995., jwardlon@pacific.edu

## Master of Science in Speech-Language Pathology - 15 Month Program

Students must complete a minimum of 55 units with a Pacific cumulative grade point average of 3.0 in order to earn the master of science degree in speech-language pathology.

|  |     |
|--|-----|
| Biology  | 4   |
| Physical Science Course (Physics or Chemistry)   | 4   |
| Child Development                                | 4   |
| Statistics                                       | 4   |
| Introduction to Psychology or Sociology          | 4   |
| SLPA 201 Professional Issues                     | 1   |
| SLPA 205 Adult Neurological Disorders I          | 3   |
| SLPA 209 Language Disorders II                   | 3   |
| SLPA 211 Language Disorders III                  | 3   |
| SLPA 215 Aural Rehabilitation                    | 3   |
| SLPA 217 Voice Disorders                         | 3   |
| SLPA 219 Speech Sound Disorders II               | 3   |
| SLPA 222 Adult Neurological Disorders II         | 3   |
| SLPA 225 Public School Issues                    | 1   |
| SLPA 227 Auditory Processing Disorders           | 1   |
| SLPA 229 Dysphagia/Swallowing Disorders          | 3   |
| SLPA 231 Augmentative/Alternative Communication  | 2   |
| SLPA 233 Cleft Palate and Syndromes              | 2   |
| SLPA 237 Managed Care                            | 1   |
| SLPA 239 Assessment Procedures                   | 1   |
| SLPA 241 Research Methods                        | 3   |
| SLPA 245 Disorders of Fluency                    | 2   |
| SLPA 247 Autism Spectrum Disorders               | 2   |
| SLPA 285 Colloquium in Speech-Language Pathology | 2   |
| SLPA 287A Internship in Speech and Hearing       | 2-4 |
| SLPA 287B Fieldwork in Speech and Hearing        | 2   |
| SLPA 288 Externship                              | 3-9 |
| SLPA 289A Advanced Clinic                        | 1-3 |
| SLPA 289B Advanced Clinic                        | 1-3 |

Select one of the following tracks:

A. Traditional (Clinical Focus) – Fulfilled by coursework above

B. SLPA 299 Thesis (See Graduate Director for further information)

CBEST Recommended

## Master of Science in Speech-Language Pathology - 24 Month Program

Students must complete a minimum of 55 units with a Pacific cumulative grade point average of 3.0 in order to earn the master of science degree in speech-language pathology.

|  |     |
|--|-----|
| Biology  | 4   |
| Physical Science Course (Physics or Chemistry)   | 4   |
| Child Development                                | 4   |
| Statistics                                       | 4   |
| Introduction to Psychology or Sociology          | 4   |
| SLPA 101 Clinical Methods I                      | 2   |
| SLPA 103 Clinical Methods II                     | 1   |
| SLPA 121 Speech and Language Development         | 3   |
| SLPA 123 Language Disorders I                    | 3   |
| SLPA 125 Speech Sound Disorders I                | 3   |
| SLPA 127 Audiology                               | 3   |
| SLPA 129 Anatomy and Physiology of Speech        | 3   |
| SLPA 131 Phonetics                               | 3   |
| SLPA 137 Speech and Hearing Science              | 3   |
| SLPA 139 Diagnostics                             | 3   |
| SLPA 143 Multicultural Populations               | 3   |
| SLPA 201 Professional Issues                     | 1   |
| SLPA 205 Adult Neurological Disorders I          | 3   |
| SLPA 209 Language Disorders II                   | 3   |
| SLPA 211 Language Disorders III                  | 3   |
| SLPA 215 Aural Rehabilitation                    | 3   |
| SLPA 217 Voice Disorders                         | 3   |
| SLPA 219 Speech Sound Disorders II               | 3   |
| SLPA 222 Adult Neurological Disorders II         | 3   |
| SLPA 225 Public School Issues                    | 1   |
| SLPA 227 Auditory Processing Disorders           | 1   |
| SLPA 229 Dysphagia/Swallowing Disorders          | 3   |
| SLPA 231 Augmentative/Alternative Communication  | 2   |
| SLPA 233 Cleft Palate and Syndromes              | 2   |
| SLPA 237 Managed Care                            | 1   |
| SLPA 239 Assessment Procedures                   | 1   |
| SLPA 241 Research Methods                        | 3   |
| SLPA 245 Disorders of Fluency                    | 2   |
| SLPA 247 Autism Spectrum Disorders               | 2   |
| SLPA 285 Colloquium in Speech-Language Pathology | 2   |
| SLPA 287A Internship in Speech and Hearing       | 2-4 |
| SLPA 287B Fieldwork in Speech and Hearing        | 2   |
| SLPA 288 Externship                              | 3-9 |
| SLPA 289A Advanced Clinic                        | 1-3 |

Select one of the following tracks:

A. Traditional (Clinical Focus) - Fulfilled by coursework above

B. SLPA 299 Thesis (See Graduate Director for further information)

CBEST Recommended

Speech Courses

**SLPA 101. Clinical Methods I. 2 Units.**

Students participate in observations and analysis of therapy, materials, teaching methods, behavioral management and data collection.

**SLPA 103. Clinical Methods II. 1 Unit.**

Students study methods, materials, and treatment of communicative disorders. Content includes: staffings, case studies, presentations, demonstrations, and class discussion.



**SLPA 105. Clinical Methods III. 2 Units.**

This course assists the beginning clinician with: writing professional reports, accountability issues while exploring a variety of therapy delivery models.

**SLPA 107. Clinical Methods IV. 1 Unit.**

Students discuss and analyze current clinical experiences. They also explore different disorders, populations, and work environments.

**SLPA 110A. Clinical Observations. 1 Unit.**

This course offers structured clinical observations for seniors not enrolled in SLPA 189A or SLPA 189B. Grading is Pass/No Credit only.

**SLPA 110B. Clinical Observations. 1 Unit.**

This course offers structured clinical observations for seniors not enrolled in SLPA 189A or SLPA 189B. Grading is Pass/No Credit only.

**SLPA 121. Speech and Language Development. 3 Units.**

This course is designed to provide basic information relative to speech and language acquisition in normal children. Phonological, morphological, syntactic, semantic and pragmatic development is considered, as well as psychosocial and intellectual correlates. This course is open to non-majors.

**SLPA 123. Language Disorders I. 3 Units.**

This introductory course examines the speech language and behavioral characteristics associated with mental retardation, hearing impairment, emotional disturbance and neurological involvement. Discussion of appropriate diagnosis and therapeutic techniques is included.

**SLPA 125. Speech Sound Disorders I. 3 Units.**

An introduction to the etiology, assessment and remediation of articulation and phonologic disorders is the primary focus of the course. It is further designed to prepare students for the beginning clinical practicum experience.

**SLPA 127. Audiology. 3 Units.**

This introductory course in audiology emphasizes basic acoustics and psychoacoustics, anatomy and physiology of the ear, hearing measurement (pure-tone, speech and tympanometry) and types of causes of hearing impairment. This course is open to non-majors.

**SLPA 129. Anatomy and Physiology of Speech. 3 Units.**

Students examine the anatomy and physiology of the mechanisms of speech and hearing. This course is open to non-majors.

**SLPA 131. Phonetics. 3 Units.**

Students study the analysis and classification of the phonemes of standard and nonstandard dialects of American English. The course includes: intensive practice in the use of the International Phonetic Alphabet, the intensive use of Visual Phonics, and the application of phonetics to communicative disorders.

**SLPA 133. Neurogenic Case Studies in Speech-Language Pathology. 3 Units.**

This course requires students to integrate course content from all SLPA courses taken previously in analyzing and synthesizing clinical cases related to acquired neurogenic communication disorders.

**SLPA 137. Speech and Hearing Science. 3 Units.**

Speech and Hearing Science provides the student with academic and laboratory training in the sciences that provide the foundation of clinical practice in communication disorders. Students gain proficiency with various types of clinical equipment through hands-on experience.

**SLPA 139. Diagnostics. 3 Units.**

Students study the principles, models and methods of assessment of speech and language disorders. Topics include interview, testing, and reporting procedures.

**SLPA 143. Multicultural Populations. 3 Units.**

Students examine theoretical models of normal second language acquisition and bilingualism that emphasize the relationship to accurate identification of communication disorders. The content distinguishes 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 is studied as well as. Problem-solving approaches for specific clinical cases.

**SLPA 145. Disorders of Fluency. 3 Units.**

This introductory course in fluency disorders (stuttering) emphasizes etiology, theory, diagnosis and treatment of this speech disorder.

**SLPA 151. Behavior Modification for SLPs. 3 Units.**

This class focuses on basic and advanced principles of behavior modifications as they relate to the area of communication sciences and disorders. Multiple strategies to increase, decrease, or modify behaviors are introduced. Theoretical and applied experiences in planning intervention strategies, measurement techniques, generalization and maintenance of changed behaviors are emphasized.

**SLPA 181. Diagnostic Observation. 1 Unit.**

SLPA 181 offers structured diagnostic observations for seniors not registered in SLPA 183. Grading is Pass/No Credit only.

**SLPA 183. Diagnostic Laboratory. 1 Unit.**

This course is a weekly three-hour lab experience that includes demonstration and practicum in assessment of speech and language disorders.

**SLPA 189A. Beginning Clinic. 1 Unit.****SLPA 189B. Intermediate Clinic. 1 Unit.****SLPA 191. Independent Study. 1-4 Units.****SLPA 201. Professional Issues. 1 Unit.**

This seminar covers in ethical and legal issues, practice standards, employment and business considerations for the practice of speech-language pathology.

**SLPA 205. Adult Neurological Disorders I. 3 Units.**

This class presents formal and informal assessment strategies and treatment strategies for adults who have language-based and motor speech-based communicative difficulties secondary to stroke, trauma, and degenerative conditions. Focus is directed to understanding a managing aphasia and motor speech disorders. Prerequisite: Graduate standing in the Speech-Language Pathology program.

**SLPA 209. Language Disorders II. 3 Units.**

Students examine 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 Units.**

Students examine 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 instructor.

**SLPA 215. Aural Rehabilitation. 3 Units.**

Students explore the 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. Prerequisite: SLPA 127. Graduate standing.

**SLPA 217. Voice Disorders. 3 Units.**

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. Graduate standing.

**SLPA 219. Speech Sound Disorders II. 3 Units.**

This course is designed for the advanced student to describe the characteristics, classifications, and causes of articulation/phonological disorders; describe the principles of assessments and assessment procedures; describe concepts, principles, and approaches to treatment; integrate theories and research to clinical practice; and demonstrate clinical problem solving skills for individuals with speech sound disorders or differences. Prerequisite: Graduate standing in the Speech-Language Pathology program.

**SLPA 222. Adult Neurological Disorders II. 3 Units.**

This class will explore the assessment and treatment strategies in the management of cognitive and communicative difficulties secondary to traumatic brain injuries, right hemisphere disorders, and dementia. Evidence-based, pragmatic and experiential approaches will be explored in the differential diagnosis and treatment of these disorders. Prerequisite: Graduate standing in the Speech-Language Pathology program.

**SLPA 225. Public School Issues. 1 Unit.**

This seminar reviews the organization and administration of language, speech, and hearing programs in public schools. Students also review federal and state legislation and legal decisions influencing public school speech-language pathologists. Graduate standing.

**SLPA 227. Auditory Processing Disorders. 1 Unit.**

The role of the speech-language pathologist in the process of screening, diagnosis, evaluation and treatment of auditory processing disorders. Students obtain experience in administering and interpreting auditory processing screening tests and developing management plans.

**SLPA 229. Dysphagia/Swallowing Disorders. 3 Units.**

This graduate-level course investigates the nature of normal and abnormal swallowing function, the causes of dysphagia, its assessment and clinical management. Graduate standing.

**SLPA 231. Augmentative/Alternative Communication. 2 Units.**

The course provides students with information about unaided and aided systems for alternative and augmentative communication. Students gain information and laboratory experiences that help them determine the most appropriate devices and methods of therapy for an individual and how to incorporate them into a complete communication system. Graduate standing.

**SLPA 233. Cleft Palate and Syndromes. 2 Units.**

Students analyze research and theory in etiology, diagnosis and treatment of craniofacial anomalies and other genetic syndromes that involve communicative disorders. Diagnosis and treatment of speech disorders associated with cleft palate are emphasized. Graduate standing.

**SLPA 237. Managed Care. 1 Unit.**

This is a graduate seminar in ethical and legal issues, practice standards, employment and government regulations for the speech-language pathologist who practices in the medical environment.

**SLPA 239. Assessment Procedures. 1 Unit.**

This course provides students with hands-on, practical experience administering, scoring, analyzing, and interpreting formal and informal speech/language assessment tests and measures. Speech/language assessment procedures and report writing are also taught in this course.

**SLPA 241. Research Methods. 3 Units.**

Students explore various research methodologies and statistical designs applicable to communicative disorders. They study and critically evaluate empirical studies from current literature and examine scholarly and professional writing skills. Students learn the application of the scientific method, use of qualitative and quantitative data, and assessment and treatment of clients with communicative disorders.

**SLPA 245. Disorders of Fluency. 2 Units.**

This is an introductory course in fluency disorders with emphasis upon etiology, theory, diagnosis, and treatment of stuttering and cluttering.

**SLPA 247. Autism Spectrum Disorders. 2 Units.**

Students examine the assessment and treatment of children and adolescents with autism spectrum disorders. An overview of the nature and characteristics of autism spectrum disorders, as well as associated neurobiological factors, are additional topics taught in this course.

**SLPA 251. Behavior Modification for SLPs. 2 Units.**

This class will focus on basic and advanced principles of behavior modification as they relate to the area of communication sciences and disorders. Multiple strategies to increase, decrease, or modify behaviors will be introduced. Theoretical and applied experiences in planning intervention strategies, measurement techniques, generalization and maintenance of changed behaviors will be emphasized.

**SLPA 283. Diagnostic Lab. 1 Unit.**

A weekly three-hour lab experience that includes demonstration and practicum in the assessment of speech and language disorders.

**SLPA 285. Colloquium in Speech-Language Pathology. 2 Units.**

Lectures are presented by invited professionals that cover current issues in speech-language pathology. May be repeated annually.

**SLPA 287A. Internship in Speech and Hearing. 2-4 Units.****SLPA 287B. Fieldwork in Speech and Hearing. 2 Units.****SLPA 288. Externship. 3-9 Units.**

This experience is designed to provide students with a full-time, supervised experience in the field. Educational and medical settings are available. Open only to students who have completed all of their academic coursework, comprehensive examinations and have maintained a graduate GPA of 3.0 or higher. Course may be repeated. Graduate standing in the Department of Speech-Language Pathology.

**SLPA 289A. Advanced Clinic. 1-3 Units.****SLPA 289B. Advanced Clinic. 1-3 Units.****SLPA 291. Graduate Independent Study. 1-4 Units.****SLPA 293. Special Topics. 2-4 Units.****SLPA 297. Graduate Research. 1-4 Units.****SLPA 299. Thesis. 2 or 4 Units.**

# University Administration

## The Administration

| Title  | Name                 |
|--|----------------------|
| President  | Pamela A. Eibeck     |
| Provost  | Maria G. Pallavicini |
| Vice President for Business and Finance  | Patrick D. Cavanaugh |
| Vice President for Student Life  | Elizabeth Griego     |
| Vice President for External Relations and Director of Intercollegiate Athletics          | Ted Leland           |
| Vice President for Development   | Burnie Atterbury     |
| Vice President and Secretary to the Board of Regents                                     | Mary Lou Lackey      |
| Associate Vice President, Office of Communications                                       | Richard Rojo         |
| Associate Vice President for Planning, Innovation and Institutional Assessment (Interim) | Mike Rogers          |
| Director of Institutional Research   | Mike Rogers          |

## Office of the Provost

| Title  | Name                 |
|--|----------------------|
| Provost  | Maria G. Pallavicini |
| Associate Provost for Enrollment (Interim)                       | Timothy E. Naccarato |
| Associate Provost for Professional and Continuing Education      | Barbara L. Shaw      |
| Associate Provost for Research, Collaborative Programs (Interim) | Bhaskara R. Jasti    |
| Assistant Provost for Academic Affairs                           | Lou Matz             |
| Assistant Provost for Faculty Affairs                            | Vacant               |
| Assistant Provost, Resource Management                           | Carrie J. Darnall    |
| Chief Information Officer  | Malik Rahman         |
| Executive Director of Institutional Effectiveness                | David Hemenway       |
| Director of Admission  | Richard Toledo       |
| Director, Center for Teaching and Learning (Interim)             | Jim Thompson         |
| Director of Financial Aid  | S. Lynn Fox          |
| Director, International Programs and Services                    | Ge-Yao Liu           |
| University Registrar   | Ann Gillen           |

## School and College Deans

| Title  | Name             |
|--|------------------|
| Dean, College of the Pacific                     | Rena Fraden      |
| Senior Associate Dean                            | Gregg Jongeward  |
| Associate Dean and Director of General Education | Gesine Gerhard   |
| Assistant Dean                                   | Marcia Hernandez |
| Dean, Conservatory of Music                      | Giulio M. Ongaro |
| Assistant Dean                                   | David M. Chase   |
| Dean, Eberhardt School of Business               | Lewis Gale       |
| Associate Dean, Undergraduate Programs           | Ray Sylvester    |

|  |                          |
|--|--------------------------|
| Associate Dean, Graduate Programs  | Cynthia Eakin            |
| Dean, Gladys L. Benerd School of Education   | Lynn G. Beck             |
| Assistant Dean   | Marilyn Draheim          |
| Assistant Dean   | Michael Ellum            |
| Dean, School of Engineering and Computer Science   | Steven Howell            |
| Associate Dean   | Louise Stark             |
| Assistant Dean   | Gary R. Martin           |
| Dean, Thomas J. Long School of Pharmacy and Health Sciences                                      | Phillip Oppenheimer      |
| Associate Dean for Academic Affairs  | Eric Boyce               |
| Associate Dean for Graduate Education and Research   | Xiaoling Li              |
| Associate Dean for Student and Professional Affairs  | Donald G. Floriddia      |
| Assistant Dean for Experiential Programs   | Sian Carr-Lopez          |
| Assistant Dean for External Relations  | Nancy DeGuire            |
| Assistant Dean for Operations  | Linda Norton             |
| Assistant Dean for Pre-Health Programs   | James Uchizono           |
| Dean of Graduate Studies and Associate Provost for Research and Collaborative Programs (Interim) | Bhaskara R. Jasti        |
| Assistant Dean, Research and Graduate Studies  | Carol Brodie             |
| Dean, Pacific McGeorge School of Law   | Francis J. Mootz III     |
| Associate Dean, Academic Affairs   | Dorothy Landsberg        |
| Associate Dean for Strategic Initiatives   | Clark Kelso              |
| Associate Dean, Faculty Scholarship  | Anne Bloom               |
| Principal Assistant Dean, Academics and Student Life and Assistant Dean of Admissions            | Timothy E. Naccarato     |
| Assistant Dean, Administration and Resource Management   | Robert D. Murta          |
| Assistant Dean, Advancement , External Relations and Career Development                          | Charlene Mattison        |
| Assistant Dean, Law Library and Graduate and International Programs                              | Matthew Downs            |
| Assistant Dean, Student Affairs  | Mary McGuire             |
| Dean, Arthur A. Dugoni School of Dentistry   | Patrick J. Ferrillo, Jr. |
| Dean Emeritus  | Arthur A. Dugoni         |
| Executive Associate Dean, Associate Dean for Academic Affairs                                    | Nader A. Nadershahi      |
| Associate Dean for Institutional Advancement   | Craig S. Yarborough      |
| Associate Dean, Administration   | Eddie K. Hayashida       |
| Associate Dean, Clinical Services  | Richard E. Fredekind     |
| Associate Dean, Development  | Jeff Rhode               |
| Associate Dean, Fiscal Services  | Edward Pegueros          |
| Associate Dean, Student Services   | Kathy Candito            |
| Assistant Dean, Academic Affairs   | Daniel J. Bender         |
| Assistant Dean, Alumni Affairs   | David B. Nielsen         |

|                          |                 |
|--------------------------|-----------------|
| Dean, University Library | C. Brigid Welch |
| Assistant Dean           | Mary Chimato    |

## Office of Vice President for Business and Finance

| Title  | Name                        |
|--|-----------------------------|
| Vice President for Business and Finance              | Patrick D. Cavanaugh        |
| Associate Vice President, Controller                 | Kenneth Mullen              |
| Assistant Vice President, Budget and Risk Management | Marcus Perrot               |
| Assistant Vice President, Human Resources            | Jane Lewis                  |
| Assistant Vice President, Chief Investment Officer   | Jol Manilay                 |
| Assistant Vice President, Business Assessment        | Sondra Roeuny               |
| Assistant Vice President, Support Services           | Scott Heaton                |
| Director, Capital Planning and Space Management      | Priscilla Meckley-Archuleta |
| Director, Internal Audit                             | Winnie Rivinius             |
| Director, Budget                                     | Jonallie Parra              |
| Director, Risk Management                            | Vacant                      |
| Associate Controller                                 | Audrey George               |
| Associate Director, Human Resources                  | Sally Coleman               |
| Assistant Director, Support Services                 | Mike Lawrie                 |
| University Payroll Manager                           | Tara Juano                  |
| Purchasing Manager                                   | Ronda Marr                  |
| Director of Student Business Services                | Suzette Calderone           |
| Bookstore Manager                                    | Nicole Castillo             |

## Office of Vice President for External Relations

| Title   | Name          |
|---|---------------|
| Vice President for External Relations and Director of Intercollegiate Athletics | Ted Leland    |
| Director of Special Events  | Steve Whyte   |
| Director of Economic Development and Community Relations                        | Mark Plovnick |

## Office of the Vice President for Development and Alumni Relations

| Title                                     | Name             |
|---|------------------|
| Vice President                            | Burnie Atterbury |
| Associate Vice President                  | Janet Dial       |
| Assistant Vice President Alumni Relations | Bill Coen        |
| Director Alumni Relations                 | Kelli Page       |

## Office of Vice President for Student Life

| Title                           | Name               |
|---------------------------------|--------------------|
| Vice President for Student Life | Vacant             |
| Dean of Students                | Joanna Royce-Davis |

|  |                      |
|--|----------------------|
| Associate VP for Residential Living and Dining Services      | Steven Jacobson      |
| Associate VP for Diversity and Community Engagement          | Lisa Cooper          |
| Assistant VP for Student Leadership and Recreation           | Lynn King            |
| Assistant Dean of Students                                   | Peggy Rosson         |
| University Chaplain  | Joel Lohr            |
| Executive Director, Educational Equity Programs              | Anita Bautista       |
| Executive Director, University Center and Student Activities | Jason Velo           |
| Director, Assessment and Student Development Services        | Sandy Mahoney        |
| Director, Career Resource Center                             | Vacant               |
| Director, Center for Community Involvement                   | Erin Rausch          |
| Director, Center for Social & Emotional Competence           | Craig Seal           |
| Director, Community Involvement Program                      | Pov Chin             |
| Director, Counseling Services                                | Stacie Turks         |
| Director, Health Services                                    | Beth McManis         |
| Director, Judicial Affairs and Outreach Services             | Heather Dunn-Carlton |
| Director, Multicultural Affairs                              | Serjio Acevedo       |
| Director, New Student and Family Programs                    | Linda Dempsey        |
| Director, Public Safety                                      | Mike Belcher         |
| Director, Residential and Greek Life                         | Vacant               |
| Director, Dining Services                                    | Sia Mohsenzadegan    |
| Director, Pacific Recreation & MOVE Program                  | Bryan Lenz           |

# The Board of Regents

**Name**

Fawzi M. Al-Saleh

Ron Berberian

Connie M. Callahan

Tony Chan

Ron Cordes

Robert J. Corkern (Vice Chair)

Douglass M. Eberhardt

Pamela A. Eibeck

Morrison C. England, Jr. (Secretary)

Noël Ferris

Richard H. Fleming

Armando Flores

Clark Gustafson

Randall T. Hayashi

José M. Hernández

Kevin Huber

Kathleen Lagorio Janssen (Chair)

H. Larry Leasure

Jim Mair (Treasurer)

Kathi McShane

Diane D. Miller

Gary Mitchell

Fredric C. Nelson

Dianne L. Philibosian

Jeannette Powell

Ron Redmond

Walter Robb

Barry L. Ruhl

Susanne Stirling

Naka "Nick" Ushijima

# Campus Buildings and Facilities

Click the map below for a larger view. An interactive campus map can be found at <http://www.pacific.edu/Campus-Map.html>

# Academic Calendar 2013-2014

## 2013 Fall Semester

(All Schools and Colleges except Pharmacy)

| Description   | Date(s)                  |
|---|--------------------------|
| Orientation and Registration  |                          |
| Session 1 (Freshmen)  | June 25-26               |
| Session 2 (Freshmen)  | June 28-29               |
| Payment Deadline for Fall 2013  | August 1                 |
| Transfer Student Orientation  | August 15-16             |
| International Student Orientation   | August 19                |
| Session 3 (Freshmen)  | August 20-21             |
| New Graduate Teaching/Research Assistants Orientation                           | August 22                |
| Graduate Student Orientation  | August 22                |
| Classes Begin   | August 26                |
| # Registration re-opens   | August 26                |
| Labor Day Holiday   | September 2              |
| # Last Day to Add Classes   | September 6              |
| # Last Day for Pass/No Credit or Letter Grade Option                            | September 6              |
| # Last day to drop classes without record of enrollment                         | September 6              |
| Fall Student Break  | October 4                |
| Spring 2014 Schedule of Classes available Online                                | October 7                |
| * Advising for Spring 2014 Registration for continuing students                 | October 14 - November 1  |
| Last Day for Pro-Rated Refund   | October 17               |
| Fall Festival (Parent and Family Weekend)                                       | October 18 -20           |
| Last day to Withdraw  | October 28               |
| * Early Registration Appointment begin date for continuing students Spring 2014 | October 28               |
| * Early Registration/continuing graduate students Spring 2014                   | October 28 - January 18  |
| * Early Registration/continuing undergraduate students Spring 2014              | October 29 - December 23 |
| Thanksgiving Break  | November 27 - 29         |
| Classes Resume  | December 2               |
| Classes End   | December 6               |
| Final Examination Period  | December 9 - 13          |

## 2014 Spring Semester

(All Schools and Colleges except Pharmacy)

| Description  | Date(s)        |
|--|----------------|
| Payment Deadline for Spring 2014                     | January 1      |
| International Student Orientation                    | January 8      |
| New Student/Transfer Orientation and Registration    | January 9 - 10 |
| Graduate Student Orientation                         | January 10     |
| Classes Begin  | January 13     |
| # Registration re-opens                              | January 13     |
| Martin Luther King Jr. Holiday                       | January 20     |
| # Last Day to Add Classes                            | January 24     |
| # Last Day for Pass/No Credit or Letter Grade Option | January 24     |

|   |                        |
|---|------------------------|
| # Last day to drop classes without record of enrollment                       | January 24             |
| President's Day Holiday   | February 17            |
| Last Day for Pro-Rated Refund   | March 7                |
| Summer 2014/Fall 2014 Schedule of Classes Available Online                    | March 10               |
| Spring Break  | March 10 - 14          |
| Classes resume  | March 17               |
| * Advising for Fall 2014 for continuing students                              | March 24 - April 8     |
| Last day to withdraw  | March 27               |
| * Early Registration Appointment begin date for continuing students Fall 2014 | March 31               |
| * Early Registration/continuing graduate students Fall 2014                   | March 31 - September 4 |
| * Early Registration/continuing undergraduate students for Fall 2014          | April 1 - May 16       |
| Deadline for Application for Fall 2014, Spring 2015, Summer 2015 graduation   | April 3                |
| Classes End   | April 30               |
| Study Day   | May 1                  |
| Final Examination Period  | May 2 - 8              |
| Commencement  | May 10                 |

# Advisers should arrange to be available on this day.

\* Limited to Currently enrolled students.

## School of Pharmacy and Health Sciences

### 2013 Fall Term

| Description   | Date(s)                 |
|---|-------------------------|
| Early Registration Fall 2013 - Incoming 1st year students | July 2 - 9              |
| Early Registration Fall 2013 - Incoming graduate students | July 2 - September 6    |
| Payment deadline for Fall 2013                            | August 1                |
| Advanced Pharmacy Practice Experiences                    | Aug 19 - December 20    |
| Orientation   | August 21 - 23          |
| Classes Begin   | August 26               |
| # Registration, re-opens                                  | August 26               |
| Labor Day Holiday   | September 2             |
| # Last Day to Add Classes                                 | September 6             |
| # Last Day to Drop Classes without record of enrollment   | September 6             |
| Pharmacy Winter 2014 Schedule of Classes Available Online | October 7               |
| Midterm Exams   | October 7 - 11          |
| Last Day for Pro-rated refund                             | October 14              |
| * Advising for Winter 2014                                | October 14 - 18         |
| * Early Registration for Winter 2014                      | October 21 - November 1 |
| Last Day to Withdraw                                      | October 28              |
| Classes End   | November 25             |
| Thanksgiving Break  | November 27 - 29        |
| Final Examination Period                                  | December 2 - 6          |

## 2014 Winter Term

| Description  | Date(s)           |
|--|-------------------|
| Payment deadline for Winter 2014   | December 1        |
| Classes Begin  | January 6         |
| # Registration re-opens  | January 6         |
| Advanced Pharmacy Practice Experiences                                     | January 6 - May 9 |
| # Last Day to Add Classes  | January 17        |
| # Last Day to Drop Classes without record of enrollment                    | January 17        |
| Martin Luther King Jr. Holiday   | January 20        |
| President's Day holiday  | February 17       |
| Pharmacy Spring 2014 Schedule of Classes Available Online                  | February 17       |
| Midterm Exams  | February 18 - 21  |
| * Advising for Spring 2014   | February 24 - 28  |
| Last Day for Pro-Rated Refund  | February 25       |
| Last day to Withdraw   | March 3           |
| * Early Registration for Spring 2014                                       | March 3 - 14      |
| Deadline for Application for Fall 2014/Spring 2015/ Summer 2015 graduation | April 3           |
| Classes End  | April 8           |
| Final Examination Period   | April 10 - 16     |

## 2014 Spring Term

| Description   | Date(s)              |
|---|----------------------|
| Payment deadline for Spring 2014                          | April 1              |
| Classes Begin   | April 28             |
| # Registration re-opens                                   | April 28             |
| Pharmacy Fall 2014 Schedule of Classes Available Online   | May 5                |
| # Last Day to Add Classes                                 | May 9                |
| # Last Day to Drop Classes without record of enrollment   | May 9                |
| * Advising for Fall 2014 Term                             | May 12 - 16          |
| Commencement  | May 17               |
| * Early Registration for Fall 2014                        | May 19 - 30          |
| Memorial Day Holiday                                      | May 26               |
| Midterm Exams   | June 9 - 13          |
| Last Day for Pro-Rated Refund                             | June 16              |
| Last Day to Withdraw                                      | June 20              |
| Fourth of July Holiday Observed                           | July 4               |
| Early registration Fall 2014 - Incoming 1st year students | July 7 - 18          |
| Early registration Fall 2014 - Incoming graduate students | July 7 - September 5 |
| Classes End   | July 29              |
| Final Examination Period                                  | July 31 - August 6   |



# Index

---

|  |     |                                 |     |
|--|-----|---------------------------------|-----|
| <b>A</b>   |     | <b>U</b>                        |     |
| Academic Calendar .....  | 134 | University Administration ..... | 130 |
| Academic Regulations .....   | 9   | University of the Pacific ..... | 2   |
| Admission .....  | 6   |                                 |     |
| <b>B</b>   |     |                                 |     |
| Biological Sciences .....  | 29  |                                 |     |
| <b>C</b>   |     |                                 |     |
| Campus and Community .....   | 14  |                                 |     |
| Campus Map .....   | 133 |                                 |     |
| Certification Program in Music Therapy .....                       | 57  |                                 |     |
| Chemistry .....  | 32  |                                 |     |
| College of The Pacific Grad .....                                  | 17  |                                 |     |
| Communication .....  | 37  |                                 |     |
| <b>E</b>   |     |                                 |     |
| Eberhardt School of Business .....                                 | 67  |                                 |     |
| <b>F</b>   |     |                                 |     |
| Financial Assistance .....   | 9   |                                 |     |
| <b>G</b>   |     |                                 |     |
| Gladys L. Benerd School of Education .....                         | 79  |                                 |     |
| Graduate .....   | 3   |                                 |     |
| Graduate Conservatory of Music .....                               | 52  |                                 |     |
| <b>H</b>   |     |                                 |     |
| Health Services .....  | 16  |                                 |     |
| Health, Exercise and Sport Sciences .....                          | 42  |                                 |     |
| <b>M</b>   |     |                                 |     |
| Music Education .....  | 55  |                                 |     |
| Music Therapy .....  | 60  |                                 |     |
| <b>P</b>   |     |                                 |     |
| Pharmaceutical and Chemical Sciences .....                         | 115 |                                 |     |
| Physical Therapy .....   | 121 |                                 |     |
| Psychology .....   | 48  |                                 |     |
| <b>R</b>   |     |                                 |     |
| Research and Graduate Studies .....                                | 4   |                                 |     |
| <b>S</b>   |     |                                 |     |
| School of Engineering and Computer Science .....                   | 94  |                                 |     |
| School of International Studies .....                              | 108 |                                 |     |
| Services for Students with Disabilities .....                      | 15  |                                 |     |
| Speech Language Pathology .....                                    | 126 |                                 |     |
| Student Housing .....  | 15  |                                 |     |
| <b>T</b>   |     |                                 |     |
| The Board of Regents .....   | 132 |                                 |     |
| The Thomas J. Long School of Pharmacy and Health Sciences Grad ... | 113 |                                 |     |