# COLLEGE OF THE PACIFIC

http://www.pacific.edu/college/
Phone: (209) 946-2141
Location: Wendell Phillips Center 110, 111
Lee Skinner, Dean

## Programs Offered

**Master of Arts in Behavioral Psychology**
**Master of Arts in Communication**
**Master of Arts in Health and Exercise Sciences**
**Master of Science in Biological Sciences**
**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 or entry into advanced degree programs.

## Biological Sciences Courses

**BIOL 101. Genetics. 5 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 112. Human Anatomy & Physiology I. 5 Units.**
This lecture and lab course is the first in a 2-semester sequence of Human Anatomy and Physiology for students in the Dental Hygiene Program. This course reviews basic chemistry, molecular movement, biological macromolecules, cells, and tissues. The integumentary, skeletal, muscular, nervous and sensory systems and the heart are covered in detail. Labs utilize microscopes, models, dissections, and physiological experiments to cover the skin, the skeleton, major skeletal muscles, joints, the heart, the nervous system, the eye and ear. Credit will not be given for this course if a student has already received credit for BIOL 170 Human Anatomy or BIOL 180 Human Physiology. Enrollment limited to undergraduates in the Dental Hygiene Program. Prerequisites: BIOL 061 and CHEM 025.

**BIOL 113. Human Anatomy & Physiology II. 5 Units.**
This lecture and lab course is the continuation of a 2-semester sequence of Human Anatomy and Physiology for students in the Dental Hygiene Program. This course reviews homeostasis and the interactions between the nervous system, sensory systems, the musculoskeletal systems and the heart before covering the structures and functions of the remaining organ systems of the body: Endocrine, circulatory, lymphatic, immune, respiratory, digestive (with treatment of energy metabolism and intermediary metabolism), urinary, and reproductive systems. Labs utilize microscopes, models, dissections, and physiological experiments to cover the endocrine, lymphatic/immune, respiratory, digestive, urinary, and reproductive systems. Credit will not be given for this course if a student has already received credit for BIOL 170 Human Anatomy or 180 Human Physiology. Enrollment limited to undergraduates in the Dental Hygiene Program. Prerequisites: BIOL 061 and CHEM 025.

**BIOL 116. Applied Microbiology. 4 Units.**
An introduction to medically relevant bacteria, plus fungi, viruses, parasites and biting arthropods. In addition to basic topics that include basic cell structure and function, biochemistry, and metabolic diversity, students acquire knowledge and practical understanding of antimicrobial treatment and immunology. An organ systems approach to learning about pathogens allows students to practice problem-solving skills in treating human infections. Case studies from the CDC reinforce problem-solving skills and provide students with a comprehensive, practical and holistic approach to learning microbiology. Credit will not be given for this course if a student has already received credit for BIOL 147 Medical Microbiology. Prerequisites: Enrollment limited to undergraduates in the Pre-Pharmacy Advantage program who have received C or better grades in BIOL 061 and CHEM 025 or CHEM 026.

**BIOL 117. Applied Physiology. 4 Units.**
A lecture and practicum course reviewing the functions of all major organ systems of the human body. Lectures use a systems-level approach with physiological performance explained in the context of anatomical structures. Practicum exercises include case studies analyzing how pharmaceutical drugs work and the biological effects & side-effects of pharmaceutical drugs in both normal and pathological states. Credit will not be given for this course if a student has already received credit for BIOL 180. Prerequisites: Enrollment limited to undergraduates in the Pre-Pharmacy Advantage program who have received C or better grades in BIOL 061, BIOL 116, and CHEM 025 or CHEM 026.

**BIOL 118. Applied Biochemistry and Molecular Biology. 4 Units.**
A broad overview of the fields of Biochemistry and Molecular Biology, with a particular emphasis on health-related topics for students preparing for Pharmacy School. Topics include rates of reactions, pH and protein-ligand binding, protein folding and structure, enzyme catalysis, cell signaling, genome mutation and gene regulation. Credit will not be given for this course if a student has already received credit for BIOL 169 Biochemistry. Prerequisites: Enrollment limited to undergraduates in the Pre-Pharmacy Advantage program who have received C or better grades in BIOL 061, BIOL 116, BIOL 117, two semesters of general chemistry and one semester of Organic Chemistry.

**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, autoimunity 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. Prerequisite: BIOL 101.

**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 human body. Thin sections of organs are examined, and their structures related to function. Emphasis is placed on learning how cells and tissues which have been treated with different colored stains appear under light microscopy, interpreting how those stains reflect the chemical makeup of the cells, and recognizing when preparative artifacts distort the appearance of the normal tissue. Credit will not be given if a student has taken BIOL 129. Prerequisites: BIOL 051 and BIOL 061.

**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. 5 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. Credit will not be given for students who have passed BIOL 116. Prerequisites: BIOL 145 and CHEM 121 with a C- or higher or permission of instructor.

**BIOL 148. Emerging Infectious Diseases. 4 Units.**
This class focuses on the evolutionary and ecological principles driving new infectious diseases of humans, wildlife, and domesticated animals. Through the exploration and application of real cases worldwide, students will have an understanding of how diseases emergence and present threats to global health. Research projects, writing assignments, case studies, and other activities will help students to synthesize a stronger appreciation for this aspect of health. Prerequisites: BIOL 051 and BIOL 061.

**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 152. Human Parasitic Diseases. 4 Units.**
This class focuses on parasitic diseases of humans, wildlife, and domesticated animals. Through the exploration and application of real cases worldwide, students will have an understanding of how parasitic diseases emergence and present threats to global health. Midterm exams which focus on research projects and writing will help students to synthesize a stronger appreciation for these kinds of infectious diseases. Students will also engage in many discussions online as a method of improving their analytical and critical thinking, argumentative writing, and collaborative skills. Prerequisites: BIOL 051 and BIOL 061.

**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 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 160. Proteomics. 4 Units.**
This course introduces students to the fundamental principles of mass spectrometry and its applications to investigate macromolecules, with an emphasis on proteins. The use of mass spectrometry, specifically in the area of proteomics, is an emerging, powerful technology that is rapidly becoming an essential tool for scientists to study biological systems and the function of proteins. Prerequisites: Grade of C or better in BIOL 061.

**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 167. Evolution and Developmental Biology. 4 Units.**
How do butterfly wings get their spots and stripes? Why do dolphins and humans have the same bones in their limbs? How did Darwin's finches quickly evolve so many different beak shapes? These are all questions that require an understanding of Evolutionary Developmental Biology (EvoDevo) to answer. EvoDevo explores the intersection of Evolution, Developmental Biology, and Genetics. This course covers introductory topics in those three fields, theoretical underpinnings of EvoDevo, as well as case studies. This course uses phylogenetic and developmental genetics frameworks to examine topics that include body-plans and patterning, genetic and morphological complexity, and novel features. Prerequisites: BIOL 51 and BIOL 61 or permission of instructor.

**BIOL 168. Pharmacology. 4 Units.**
Pharmacology is a complex field focusing on the mechanism of action of drugs. This course provides background information on the basic mechanisms of drug absorption, distribution and interaction with targets. In addition, this course covers how drugs are discovered and regulated. Finally, a selected set of drug families focusing on the nervous system and anti-cancer treatments are examined. This course is intended as a primer for later study of pharmacology covering many more drug families. Other courses such as Organic Chemistry, Physiology and Genetics are helpful but are not required. Prerequisites: BIOL 051, BIOL 061, CHEM 025, CHEM 027.

**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 preparing for Dental, Medical or Pharmacy 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. Credit will not be given for this course if a student has already received credit for BIOL 118 Applied Biochemistry and Molecular Biology. BIOL 051, BIOL 061, BIOL 101, CHEM 025, CHEM 027 and CHEM 123, all with a grade of "C-" or higher.

**BIOL 170. Human Anatomy. 5 Units.**
This lecture/lab course is a study of the structure of the organ systems of humans. The course emphasizes macroscopic anatomy and adds details of cellular and molecular structure. Some aspects of evolutionary history and clinical application are also discussed. Weekly lab activities include examination of microscope slides, anatomical models and dissections. Credit will not be given for this course if a student has already received credit for either BIOL 112 Human Anatomy & Physiology I or BIOL 113 Human Anatomy & Physiology II. Prerequisites: BIOL 051 and BIOL 061.

**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. 5 Units.**
The structure and dynamics of populations, biotic communities and ecosystems, is emphasized with particular focus upon relationships of organisms to their environments. 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 180. Human Physiology. 5 Units.**
This course is a lecture- and laboratory-based review of the functions of the major organ systems of vertebrates with emphasis on the human body. Lab exercises demonstrate basic physiological processes in the human body and emphasize techniques of data acquisition and presentation. Credit will not be given for this course if a student has already received credit for either BIOL 112 Human Anatomy & Physiology I, BIOL 113 Human Anatomy & Physiology II, or BIOL 117 Applied Physiology. Prerequisites: BIOL 061 and one semester of Introductory Chemistry (CHEM 023, CHEM 024, CHEM 025, CHEM 026 or CHEM 027).

**BIOL 181. Integrative Metabolism. 4 Units.**
This course provides a survey of topics related to metabolism, including metabolic pathways, endocrine and neural regulation and integration of metabolism, specialized metabolic adaptations in animals, metabolic disease, and the intersection of metabolism and society, among others. We will read, analyze, and discuss scientific articles throughout this course to familiarize you with the scientific process, current research in the field of metabolism, and to examine how scientific findings are disseminated and used to inform health-related policy. Students will complete a capstone research project addressing metabolic health, media, and society. The goal of this course is to prepare you for more advanced graduate and professional work by developing critical thinking, experimental analysis, and scientific communication skills and the ability to critically evaluate scientific literature. Prerequisite: BIOL 061.

**BIOL 182. Medical Endocrinology. 4 Units.**
This lecture/lab course presents the fundamentals and current topics in human endocrinology from a medical and clinical perspective. Lectures cover normal endocrine physiology, endocrine diseases, diagnostic rubrics for patient assessment/disease evaluation, and current treatment recommendations. Lab is divided into two units: (1) Histology of healthy endocrine glands and histopathology of diseased endocrine glands; and (2) Developing patient assessment/diagnosis skills using computer "virtual patients." Prerequisites: BIOL 051, BIOL 061, CHEM 025 and CHEM 027. Recommended: BIOL 71 or 81 or BIOL 128.

**BIOL 183. Comparative Oral+ENT Biology. 4 Units.**
This course is a hands-on introduction to the mouth, ears, nose and throat of vertebrates. It provides a comparative view of the evolution, design and function of the mouth and associated cavities. Mastication, swallowing, speech and hearing are examined from various perspectives. Common clinical issues in humans, as well as species with extreme performances are also discussed. Labs include practical training in technical sculpture, casting, dissection, drilling, adhesives, wire work, anesthesia, and experiments on speech and hearing. The target audience is students interested in dentistry, otorhinolaryngology, audiology, speech pathology or organismal biology. Prerequisites: BIOL 051 and BIOL 061.

**BIOL 185. Comparative Animal Behavior. 4 Units.**
The ecology and evolution of animal behavior are examined from both proximate and ultimate perspectives. Genetic, hormonal, neural and environmental influences on the development and expression of behavior are discussed, as well as how behaviors are shaped and constrained by ecology and evolutionary history. Through laboratory and field activities, students practice observational and quantitative methods to record and analyze a variety of animal behaviors.

**BIOL 186. Hormones and Behavior. 4 Units.**
An on-line reading/discussion/writing course focusing on the bidirectional interactions between an animal's behaviors and its endocrine system. Topics include: overview of the vertebrate endocrine system, biological sex and gender issues, courtship and sex behaviors, parenting behavior, pheromonal communication, aggression and other social behaviors, learning and memory, hunger, stress, and biological rhythms. Discussions also analyze current research publications, research methodologies, and results. Students practice scientific writing and prepare a 10-12 page research paper. This course counts as an upper division elective in the Biology major and as an elective in the Gender Studies degree. Prerequisites: BIOL 051 and BIOL 061. **(GEND)**

**BIOL 191. Independent Study. 2-4 Units.**

**BIOL 194. Science Communication. 4 Units.**
This course provides students the opportunity to improve their skills at assessment of primary scientific literature, oral presentation of scientific research, and scientific writing. Students critically analyze a series of journal articles related to their own research, perform several writing exercises, orally present preliminary results of their research or research prospectus, write a research proposal, and evaluate peers' oral and written communication efforts. Additionally, students attend and participate in departmental seminar presentations given by researchers from Pacific and other universities. Prerequisites: Instructor permission.

**BIOL 197. Undergraduate Research. 1-4 Units.**

**BIOL 222. Immunology. 4 Units.**
Students study immunoglobin 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 260. Proteomics. 4 Units.**
This course introduces students to the fundamental principles of mass spectrometry and its applications to investigate macromolecules, with an emphasis on proteins. The use of mass spectrometry, specifically in the area of proteomics, is an emerging, powerful technology that is rapidly becoming an essential tool for scientists to study biological systems and the function of proteins. Prerequisites: Graduate standing.

**BIOL 267. Evolution and Developmental Biology. 4 Units.**
How do butterfly wings get their spots and stripes? Why do dolphins and humans have the same bones in their limbs? How did Darwin's finches quickly evolve so many different beak shapes? These are all questions that require an understanding of Evolutionary Developmental Biology (EvoDevo) to answer. EvoDevo explores the intersection of Evolution, Developmental Biology, and Genetics. This course covers introductory topics in those three fields, theoretical underpinnings of EvoDevo, as well as case studies. This course uses phylogenetic and developmental genetics frameworks to examine topics that include body-plans and patterning, genetic and morphological complexity, and novel features. Prerequisites: Graduate standing.

**BIOL 268. Pharmacology. 4 Units.**
Pharmacology is a complex field focusing on the mechanism of action of drugs. This course provides background information on the basic mechanisms of drug absorption, distribution and interaction with targets. In addition, this course covers how drugs are discovered and regulated. Finally, a selected set of drug families focusing on the nervous system and anti-cancer treatments are examined. This course is intended as a primer for later study of pharmacology covering many more drug families. Prerequisites: 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 274. Biology of Insects. 4 Units.**
A lecture and laboratory introduce a broad study of the structure and function of insects, the most diverse terrestrial organisms with over 1 million described species. The course includes a study of their anatomy, physiology, ecology, evolution, reproduction, behavior, and relation to humans. The laboratory work includes field trips in addition to the preparation of 50 classified insects. Project assignments include but are not limited to identification of taxa of interest, and analysis of insect data related to student interests.

**BIOL 279. Evolution. 4 Units.**
This course content is the same as BIOL 179 and a special project is required. Graduate standing.

**BIOL 281. Integrative Metabolism. 4 Units.**
This course provides a survey of topics related to metabolism, including metabolic pathways, endocrine and neural regulation and integration of metabolism, specialized metabolic adaptations in animals, metabolic disease, and the intersection of metabolism and society, among others. We will read, analyze, and discuss scientific articles throughout this course to familiarize you with the scientific process, current research in the field of metabolism, and to examine how scientific findings are disseminated and used to inform health-related policy. Students will complete a capstone research project addressing metabolic health, media, and society. The goal of this course is to prepare you for more advanced graduate and professional work by developing critical thinking, experimental analysis, and scientific communication skills and the ability to critically evaluate scientific literature. Prerequisite: Graduate Standing.

**BIOL 282. Medical Endocrinology. 4 Units.**
This lecture/lab course presents the fundamentals and current topics in human endocrinology from a medical and clinical perspective. Lectures cover normal endocrine physiology, endocrine diseases, diagnostic rubrics for patient assessment/disease evaluation, and current treatment recommendations. Lab is divided into two units: (1) histology of healthy endocrine glands and histopathology of diseased endocrine glands; and (2) developing patient assessment/diagnosis skills using computer "virtual patients." Prerequisites: Graduate Standing.

**BIOL 283. Comparative Oral+ENT Biology. 4 Units.**
This course is a hands-on introduction to the mouth, ears, nose and throat of vertebrates. It provides a comparative view of the evolution, design and function of the mouth and associated cavities. Mastication, swallowing, speech and hearing are examined from various perspectives. Common clinical issues in humans, as well as species with extreme performances are also discussed. Labs include practical training in technical sculpture, casting, dissection, drilling, adhesives, wire work, anesthesia, and experiments on speech and hearing. The target audience is students interested in dentistry, otorhinolaryngology, audiology, speech pathology or organismal biology. Prerequisites: Graduate standing.

**BIOL 291. Independent Study. 2 or 4 Units.**

**BIOL 294. Science Communication. 4 Units.**
This course provides students the opportunity to improve their skills at assessment of primary scientific literature, oral presentation of scientific research, and scientific writing. Students critically analyze a series of journal articles related to their own thesis research, perform several writing exercises, orally present preliminary results of their thesis research or thesis prospectus, write a thesis research proposal, and evaluate peers' oral and written communication efforts. Students also form and meet with their graduate thesis committee to discuss thesis research. Additionally, students attend and participate in departmental seminar presentations given by researchers from Pacific and other universities. Prerequisites: Open to first-year graduate students.

**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. **(PLAW)**

**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. Public Advocacy. 4 Units.**
This course teaches the principles of persuasion in public contexts in the U.S. (types and characteristics of public audiences, official and unofficial advocacy campaigns, and media framing of public issues) from historical and theoretical perspectives. The focus is to make students aware of the constraints and opportunities in public advocacy arguments and their public dissemination. **(GE1A, GEGR)**

**COMM 131. Media Production and Digital Culture. 4 Units.**
Students learn how to use industry-standard production equipment, software, and facilities to produce audio podcasts and video projects while developing a practical and theoretical understanding of the basic fundamentals of lighting, sound, camera work, broadcasting, and audio/video editing. The focus is on producing original content ready for inclusion in students' portfolios using foundational methods that emphasize production quality and critical understanding of the production process. Lab Fee required. **(FILM)**

**COMM 132. Writing for Media. 4 Units.**
This course approaches media writing as a social process and practice that occurs across mediated platforms. These approaches include digital, political, economic, and professional conditions that enable or constrain writing and the writer. Exploration and practice of media writing processes include: research, preparation, and delivery. Students develop competence in script writing for news, commentary, fictional genres, social media, and emerging media. A lab fee is required.

**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. **(DVSY, ETHC, FILM, GEDI)**

**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 fo this course. **(FILM)**

**COMM 135. Principles of Public Relations. 4 Units.**
In this course students learn about media platforms and their application in contemporary media and business. The focus is on content creation and how to build content that performs well in social media, including a focus on social analytics, social media campaigns, and other contemporary public relations practices. Students engage in analysis and critique of various public relations practices in historical and contemporary moments.

**COMM 137. Public Relations Case Studies. 4 Units.**
In this course students learn theoretical and practical approaches to the analysis and delivery of public relations campaigns. Students explore and practice public relations processes including: research, preparation, content creation, media writing, delivery methods, and analytics for specific clients.

**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 142. Strategic Communication: Brand Management & Integrated Marketing. 4 Units.**
Every day, we engage with countless brands and organizations through a variety of channels – whether we want to or not. The rapid ascent of digital media has fundamentally altered our experiences with these organizations and radically changed the landscape for the umbrella of terms (advertising, marketing, promotion, public relations, etc.) that encompass brand management. Brand Management is part of a social communication process that has evolved over time with changes in culture, technology, business strategies, and constantly converging media. This course is designed to introduce students to brand management strategies and practices through strategic communication theory and experiential applications vital to success in advertising, marketing, and public relations. The course's overriding objective is to help students develop a knowledge base of strategic communication and brand management from a pluralistic viewpoint. As a survey course, it addresses a wide range of organizations and brands including: Burger King, Lego, Lynx, Maserati, HSBC, and Popeye's. Prerequisites: COMM 31.

**COMM 143. Intercultural Communication. 4 Units.**
This course analyzes the major variables affecting communication between persons of different cultural backgrounds, explores essential intercultural communication theories that allow access to explanations and descriptions of cultural norms and values, and identifies guidelines for achieving intercultural communication competence. This course fulfills the diversity requirement. **(DVSY, ETHC, GE1C, GEDI, GESO)**

**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. Capstone in Communication. 4 Units.**
This senior level capstone seminar is devoted to expanding and applying the communication concepts that students have learned in the communication major to contemporary communication issues. Students undertake research projects and employ a variety of communication methodologies, including surveys, focus groups, content analysis, media productions, in order to study the social, historical and communicative implications of their chosen area of interest. This course is designed to offer Communication majors the opportunity to incorporate the content from their Communication theory and practice courses into their final papers and projects. This course is required for Communication majors. Pre-requisites: 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 156. Public Relations Campaigns. 4 Units.**
Building on the skills acquired in previous public relations courses, this course is designed to help students continue to develop and refine their critical and creative thinking in an applied context. Students will research, plan, and design public relations strategies and tactics in the development of a public relations campaign for a real-world client. Prerequisite: COMM 135.

**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 191. Independent Study. 2-4 Units.**

**COMM 197. Independent Research. 1-4 Units.**
This is an independent study course that is designed in consultation with the professor leading this student's research.

**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 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 contineing 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 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 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 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 287. Graduate Internship. 1-4 Units.**
Students in the graduate program in Communication are required to do an internship for their Master's degree.

**COMM 289. Graduate Practicum. 2 or 4 Units.**

**COMM 291. Graduate Independent Study. 1-4 Units.**

**COMM 297. Graduate Research. 1-4 Units.**

**COMM 298. Non-Traditional Thesis. 4 Units.**
After completing coursework and comprehensive examinations, students work in the Communication Graduate Program culminates with enrollment in COMM 298: Non-Traditional Thesis a three-part project that includes: a written Proposal for the non-traditional thesis, a written document that summarizes the non-traditional thesis, and a formal presentation and oral examination in which the student presents the completed work to his or her committee. The non-traditional thesis involves a study around an issue or challenge facing an organization or business with a media or public relations focus. It emphasizes both scholarly and practical application in line with the professional orientation of the Pacific Communication Department. The subject of the non-traditional thesis may be the student's employer. Students complete the non-traditional thesis under the direction of a full-time faculty member, who serves as chairperson of the student's non-traditional thesis committee. Two additional faculty members and/or industry professionals join the chairperson on the committee. A non-traditional thesis may take many forms, though all must be noteworthy for substance and artistic or professional quality. Non-traditional theses could include: documentary films and videos, slide programs, photo essays, feature or investigative article series, handbooks for professionals (e.g., the result of synthesizing and translating scholarly research), or magazine design and layout projects. The non-traditional thesis could be a well conceptualized magazine article series (for example, three 2.500-word stories) targeted to a specific publication. Such non-traditional theses must show both greater depth and breadth (conceptually, stylistically and in terms of quality of research) than any single assignment completed in a graduate level class. Prerequisites: Completion of 28 units and instructor permission.

**COMM 299. Thesis. 2 or 4 Units.**

## Hlth, Exercise Sprt Sci Courses

**HESP 110. Health and Exercise Science Law. 4 Units.**
This course examines legal issues and responsibilities relevant to health and exercise science professionals. This course is divided into two parts. Part I introduces basic concepts of the legal system and reviews general legal principles of tort and contract law. Part II focuses upon specific topics to which legal principles and risk management strategies apply. This course is taught combining lecture, class discussions, and experientially based assignments designed to develop the ability to practically apply circumstance to the law and risk management planning. In-class oral arguments using relevant case law, review of local facilities and programs, and legal observations in San Joaquin County courtrooms will supplement course content and offer students “hands on” learning opportunities.

**HESP 131. Assessment and Evaluation. 4 Units.**
This course is the development of competencies of Health, Exericse 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 148. Research in Health and Exercise Science. 4 Units.**
The purpose of this course is to gather, analyze and publish findings in health and exercise science. It is a practical course that focuses on collection of scientific information, appropriate analyses of data, and formulating conclusions that fit or modify existing paradigms. Students must have completed training in research methods and statistics and be capable of effective review of scholarly literature. At the conclusion of the course students are expected to submit their findings for peer review and publication. Prerequisites: HESP 180.

**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 154. Stress Physiology. 4 Units.**
In this course you will examine what stress is and how your body tolerates, adapts, and allows you to flourish with stresses.

**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 160. Principles of Coaching. 3 Units.**
This course is designed as an introduction to the principles of athletic coaching for modern day athletes. Emphasis is on a holistic approach to the theories, knowledge, and practices of coaching sport as prescribed by the National Standards for Sport Coaches. This course will explore coaching at various levels. Topics will include developing a coaching philosophy, evaluating theories in student-athlete motivation, understanding team dynamics, leadership, administration responsibilities, and improving player performance.

**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 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 180. Epidemiology. 4 Units.**
This course is an introduction to the principles and practice of epidemiology. It explores the history, concepts, and methods of epidemiologic investigation. The statistical models taught in this class include the receiver operating characteristic curve, chi-square test, t-test, binary logistic regression, and linear regression. Students will learn to develop research designs that employ these tests and will be able to conduct them to evaluate patient care, quantify risk, and understand the patterns of illness and disease in populations.

**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. Prerequisite: HESP 129.

**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 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 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 200. Advanced Health and Exercise Science Law. 4 Units.**
This course examines legal issues and responsibilities relevant to health and exercise science professionals. This course is divided into two parts. Part I introduce basic concepts of the legal system and reviews general legal principles of tort and contract law. Part II focuses upon specific topics to which legal principles and risk management strategies apply. This course is taught combining lecture, class discussion, a written research project, and experientially based assignments designed to develop the ability to practically apply specific circumstances and facts to the law and risk management planning. In-class oral arguments using relevant case law, review of local facilities and programs, and legal observations in San Joaquin County courtrooms will supplement course content and offer students "hands on" learning opportunities.

**HESP 257. The Clinician in Health and Exercise Science. 4 Units.**
This course offers students an opportunity to integrate academic, experiential, and career interests. Each student will: (1) observe at least one carefully selected clinical site throughout the term that is relevant to individual professional/educational interests or research reports that address career options in HESP (if observation sites are unavailable) and (2) research a narrowly defined issue relevant to HES. This course is intended to enhance professional development through experiential learning, continue the development of research skills, advance academic knowledge, and address educational priorities. Students should complete the course with a better understanding of at least one career option within the broad field of health and exercise science and its related research issues.

## Psychology Courses

**PSYC 115. Advanced Lab in Cognitive Psychology. 4 Units.**
This advanced lab will focus on more in-depth exploration of a specific topic area within the field of Cognitive Psychology. The course will include strong research/applied component that will help students get more hands on feel for research and/or application of the concepts within the field. Possible topics include Memory, Thinking Fast and Slow, or other topics. Prerequisites: PSYC 015 and PSYC 050, both with a C- or higher.

**PSYC 117. Advanced Lab in Clinical Psychology. 4 Units.**
This course is intended to give students a broad overview of the field of clinical psychology as well as experience grappling with some of the current controversies in the field. This course covers several topics, including: foundations and early history; current research and practice; major theoretical orientations; diagnoses and the DSM, ethical standards; differences between the doctoral degree in clinical psychology and a master's degree in counseling, social work, or marriage and family therapy, and current controversies in these fields. Prerequisites: PSYC 017, PSYC 053, and PSYC 050, all with a C- or higher.

**PSYC 118. Advanced Lab in Child Clinical Psychology. 4 Units.**
This lab is a more in depth look at topics within the field of clinical child psychology. Each time the course is taught, a specific topic of study such as parenting, child mental health, etc. will be the focus. The course relies heavily on becoming aware of the available research within the field of Clinical Child Psychology as well as more effectively accessing and understanding research in general. Experiential opportunities will be included. Prerequisites: PSYC 017 and PSYC 050, both with a "C-" or higher.

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

**PSYC 129. Advanced Lab in Developmental Psychology. 4 Units.**
This advanced lab will focus on a more in-depth exploration of a specific topic area within the field of Developmental Psychology. The course will include a strong research/ applied component that will help students get a more hands on fells for research and/ or application of the concepts within the field. Possible topics include The Study of Infants, Psychology of Aging, Cognitive Aging, or other topics. Prerequisites: PSYC 029, PSYC 050 with a C- or better. **(ETHC)**

**PSYC 150. Advanced Research Methods in Psychology. 5 Units.**
The purpose of this course is to teach students how understanding research methods can help them become better consumers of information and better professionals, no matter their career. This course includes a lab component to facilitate hands-on learning. The goals for this course align with the psychology department's program learning outcome of scientific literacy and critical thinking. They also align with the university-wide core competencies of critical thinking, information literacy, quantitative reasoning, and written communication. Upon completion of this sequence, students will be able to: Discuss the role of research in advancing our knowledge of psychological phenomena, read and evaluate psychological research, identify the ethical issues surrounding the conduct of psychological research, distinguish scientific sources from pseudoscientific sources, state the basic research designs and the types of data analyses for conducting sound psychological research, write research reports using APA style. Prerequisites: Psychology major and a Grade of C- or higher in PSYC 050 and a Grade of C- or higher in one of the following: MATH 035, MATH 037, or PSYC 035.

**PSYC 153. Advanced Lab in Behavioral Psychology. 4 Units.**
This advanced lab will focus more in-depth exploration of a specific topic area within the field of Behavioral Psychology. The course will include a strong research/ applied component that will help students get a more hands on feel for research and/or application of the concepts within the field. Possible topics may include Behavioral Economics, Behavioral Approaches to Common Childhood Problems, the Power of Habit, or other topics. Prerequisites: PSYC 053 and PSYC 050, both with a C- or higher.

**PSYC 169. Advanced Lab in Social Psychology. 4 Units.**
This advanced lab will focus on a more in-depth exploration of a specific topic area within the field of Social Psychology. The course will include a strong research/applied component that will help students get a more hands on feel for research and/ or application of the concepts within the field. Possible topics may include Social Influence, Conformity, or other topics. Prerequisites: PSYC 069 and PSYC 050, both with a C- or higher.

**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. 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 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. Prerequisite: Open only to graduate students in the psychology major.

**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 262. Ethical Behavior. 4 Units.**
This course will cover professional conduct and ethical behavior with the broad discipline of psychology, as well as the specific ethical and professional guidelines for the Behavior Analysis Certificate (BACB®). This course addresses ethical decision-making, regulatory standards, and professional behavior in assessment, treatment, and research, in a variety of settings. Although this course will encompass a variety of disciplines and settings within psychology, primary attention will be given to those disciplines intersecting with the practice of applied behavior analysis and on those settings in which behavior analysts in practice are most likely to operate. Topics include accountability, confidentiality and informed consent, quality of services, quality of life, emergency management, research and academic settings, professional collaborations, boundaries, cultural competence, and ethical safeguards. Prerequisites: Psychology major and graduate student status.

**PSYC 278. Controversial Treatments in Applied Settings. 4 Units.**
This graduate seminar covers the varieties and consequences of pseudoscience in the helping professions and how to avoid being influenced by them. The helping professions comprise a significant industry in the United States. This includes medicine, psychology (including behavior analysis), psychiatry, social work, and other forms of counseling. It includes community mental health centers, and other venues such as mental hospitals, crisis centers, and schools. Each profession has a code of ethics that calls on professionals to help clients, to avoid harm, to honor informed consent requirements and promote independence. Professional codes of ethics call on professionals to draw on practice-related research findings. What do we find if we look closely at their everyday behavior? To what extent do professionals and researchers honor obligations described in such codes of ethics? Although this course will encompass a variety of disciplines and settings, primary attention will be given to those disciplines intersecting the practice of applied behavior analysis and on those settings in which behavior analysts in practice are most likely to operate. Prerequisites: Psychology major and graduate student status.

**PSYC 283. Research Design. 4 Units.**
Students learn the design and analysis of research using single subject and group designs.

**PSYC 285E. Personnel Supervision and Management I. 1 or 2 Unit.**
This course focuses on personnel supervision and management. Students will learn how to train others to design and implement behavioral assessments and interventions and oversee the implementation of behavioral programs by others. Students will also attend behavioral program planning meetings and review program-relevant literature. Prerequisites: Instructor permission.

**PSYC 285F. Personnel Supervision and Management II. 1 or 2 Unit.**
This course focuses on personnel supervision and management. Students will learn how to train others to design and implement behavioral assessments and interventions and oversee the implementation of behavioral programs by others. Students will also attend behavioral program planning meetings and review program-relevant literature. Prerequisites: Instructor permission.

**PSYC 287. Graduate Internship. 1-4 Units.**

**PSYC 289. Practium. 1-4 Units.**

**PSYC 291. Graduate Independent Study. 1-4 Units.**

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

**PSYC 299. Thesis. 2 or 4 Units.**
This course requires students, under the guidance and supervision of a designated faculty research advisor, to independently plan, organize, conduct, evaluate and write-up an original research project as partial fulfillment of the MA degree. Permission of instructor. Pass/No Credit grading only.