298. **Group Study (1-5)**
Independent study—1-5 hours. Prerequisite: consent of instructor. —F, W, S; F, W, S, J

299. **Individual Study (1-12)**
Prerequisite: consent of instructor. —F, W, S, F, W, S, J

299D. **Dissertation Research (1-12)**
Prerequisite: consent of instructor and Advancement to Candidacy. May be repeated for credit. —F, W, S; F, W, S, J

**Pharmacology and Toxicology**

See Medical Pharmacology and Toxicology (PHA), on page 443; Molecular Biosciences (VMB), on page 582; and Pharmacology and Toxicology (A Graduate Group), on page 496.

**Pharmacology and Toxicology (A Graduate Group)**

Kermitt L. Carraway, Chairperson of the Group

**Group Office.** 4117 Meyer Hall (Department of Environmental Toxicology) 530-752-4516; http://ptx.ucdavis.edu/

**Faculty.** The more than 90 faculty in the graduate group represent at least 25 academic departments and organized research units within the College of Agricultural and Environmental Sciences, the College of Biological Sciences, the School of Medicine and the School of Veterinary Medicine.

**Graduate Study.** The program, which offers both the M.S. and Ph.D. degree, emphasizes an interdisciplinary approach that combines coursework and experimental training in modern approaches to pharmacological and toxicological problems. Areas of research span fundamental and translational research in a broad spectrum of areas within pharmacology and toxicology, including cardiovascular pharmacology, cancer therapeutics, neuropharmacology, drug discovery and design, neurotoxicology, pulmonary toxicology and environmental toxicology. Students complete core courses in pharmacology and toxicology and carry out research rotations during their first year of study. All Ph.D. students receive financial support. For detailed information on the program, contact the Group office, graduate advisers, or the Group chairperson.

**Graduate Advisers.** K. Carraway (Biochemistry & Molecular Medicine), A. Gelli (Pharmacology), R. Harper (Pulmonary Medicine), P. Henderson (Hematology & Oncology), Mary Hone (Pharmacology), H. Knych (Molecular Biosciences), J.A. Last (Pulmonary Medicine), F. Lin (Molecular Biosciences), L. Miller (Anatomy, Physiology & Cell Biology), K. Pinkerton (Center for Health and Environment), B. Puschner (Molecular Biosciences), H. Wullf (Pharmacology)

Courses in Pharmacology and Toxicology (PTX)

Additional courses that satisfy the breadth and depth requirements of the program are taught among departments of faculty in the group.

**Graduate 201. Principles of Pharmacology and Toxicology I (1)**
Lecture—5 hours. Prerequisite: Biological Sciences 102 and Neurobiology, Physiology, and Behavior 101. First of three courses presenting fundamental principles of pharmacology and toxicology. Introduction to basic concepts in pharmacology/toxicology, followed by in-depth blocks on fate processes of chemicals in the body, fate processes in tissue selective responses, selective toxicity employed therapeutically. —F (F, W) Puschner, Knyst

202. **Principles of Pharmacology and Toxicology II (4)**
Lecture—4 hours. Prerequisite: course 201. The second of three courses presenting fundamental principles of pharmacology and toxicology. Principles of pharmacodynamics and mechanisms of drug/toxicant actions. —W (W) Angelastro, Eisched

203. **Principles of Pharmacology and Toxicology III (4)**
Lecture—4 hours. Prerequisite: courses 201 and 202. Integrated physiological systems, cardiovascular and nervous systems and how drugs and toxicants act to perturb function. —S (S) Berman, Gelli

215. **Electrophysiology Techniques and Applications (3)**
Lecture—1.5 hours; discussion—1.5 hours. Broad scope of topics in electrophysiology techniques and applications. [Same course as Molecular, Cellular and Integrative Physiology 215J] —S (S) Chen

230. **Advanced Topics in Pharmacology and Toxicology (1-3)**
Lecture/discussion/seminar—1 hour each [course format can vary at option of instructor]. Prerequisite: course 201 and consent of instructor. In-depth coverage of selected topics for graduate students in Pharmacology-Toxicology and related disciplines. Topics determined by instructor in charge for each quarter. —F, W, S (F, W, S)

277. **Molecular Mechanisms in Cancer and other Diseases (3)**
Lecture/discussion—2 hours; project. Prerequisite: undergraduate or graduate introductory course in cell biology (such as Biological Sciences 104), and general biochemistry (Molecular & Cellular Biology 121 or 122) required; course 202 recommended. Restricted to graduate standing or consent of instructor. Exploration of cutting edge investigations on the underlying mechanisms of cancer biology, cancer therapy and other diseases. Current medical research in cancer and other diseases, as it spans the bench to bedside. —S (S) Goldkorn

290. **Seminar (1)**
Current topics in pharmacology and toxicology. [S/U grading only.]—F, W, S (F, W, S)

290C. **Advanced Research Conference (1)**
Lecture/discussion. Provide credit for participation in and attendance at research conferences. May be repeated three times for credit. [S/U grading only.]—F, W, S (F, W, S) Puschner

299. **Research (1-12)**
[S/U grading only]

**Pharmacy**

[College of Letters and Science]

James Griesemer, Ph.D., Chairperson of the Department

**Department Office.** 101 Young Hall philadvising@ucdavis.edu; http://philosophy.ucdavis.edu

**Faculty.**

David Copp, Ph.D., Distinguished Professor
Zoe Drayson, Ph.D., Assistant Professor
Cody Gilmore, Ph.D., Associate Professor
James R. Griesemer, Ph.D., Professor
Elaine M. Landry, Ph.D., Professor
Hannah Lin, Ph.D., Assistant Professor
George J. Moyett II, Ph.D., Professor
Robert May, Ph.D., Professor
Robert Mittleman, Ph.D., Professor
Bernard Molyneux, Ph.D., Associate Professor
Alyssa Nee, Ph.D., Associate Professor
Marina A. L. Oshana, Ph.D., Professor
Christina Rulli, Ph.D., Assistant Professor
Adam Sennett, Ph.D., Associate Professor
Jan Szall, Ph.D., Professor

**Emeriti Faculty.**

William H. Bossart, Ph.D., Professor Emeritus
Robert C. Cummins, Ph.D., Professor Emeritus
Gerald Dworkin, Ph.D., Distinguished Professor Emeritus
Joel J. Friedman, Ph.D., Professor Emeritus
Neal W. Gilbert, Ph.D., Professor Emeritus
Michael Joubin, Ph.D., Professor Emeritus
John F. Malcolm, Ph.D., Professor Emeritus
Paul Teller, Ph.D., Professor Emeritus
Michael V. Wedin, Ph.D., Professor Emeritus
George Wilson, Ph.D., Professor Emeritus

**The Major Program.**

Philosophy addresses problems and questions that arise in all areas of human thought and experience and in all disciplines. Requiring questions about the nature of value, the good life, right conduct, knowledge, truth, language, mind, and reality are central to philosophical study. Philosophy also investigates the methodologies and assumptions of the major disciplines in the university in order to deepen our understanding of the sciences, of mathematics, art, literature, and history, and of religion and morality. It leads us to address issues about the nature of these subjects, about the methods of reasoning characteristic of them, and about the role they make to our understanding of ourselves and our world. Philosophy contributes to the liberal education of its students. The department emphasizes an analytic approach to philosophical questions, which trains students to understand and evaluate arguments and to think and write precisely and clearly. These skills are of immense value in a variety of careers.

**The Program.** The Department of Philosophy offers its majors a choice among three options. The General Emphasis provides a broad view of the field of philosophy. It includes a breadth requirement at the lower division level while providing students with a strong foundation in advanced courses. The Pre-Law and Pre-Med Emphases include courses that provide philosophical perspective on law and medicine respectively and that also provide important preparation for professional school.

The Department offers courses in most areas of contemporary analytic philosophy including the theory of knowledge, metaphysics, logic, ethics, and political philosophy. In addition, upper division courses are offered in moral and political philosophy, and aesthetics, and in the philosophy of religion, of mind, of language, of mathematics, of law, and of the physical, biological and social sciences. The problems of philosophy have important roots in past. The history of philosophy is important not only as part of the heritage of educated persons, but also because it is relevant to contemporary issues. For these reasons, the department places great emphasis
on the history of philosophy, providing courses on the major figures and traditions of western philosophy.

Career Alternatives. Students of philosophy learn to understand and evaluate arguments and to think and write precisely and clearly. These analytical skills are assets in any career. Many of our majors have gone on to graduate study in philosophy and have become philosophers in their own right. Others have pursued academic careers in related disciplines in the humanities and social sciences. Philosophy majors are well prepared for law, business, or other professional schools and have found careers in computer programming, government service, teaching, the ministry, and social work. Those wishing to attend law school or medical school should consider obtaining the Pre-Law and Pre-Med emphases, respectively.

A.B. Major Requirements:

General Emphasis

Preparatory Subject Matter ............................................... 16
One course from any of the following areas: ................................ 12
(a) General Philosophy: Philosophy 1
(b) Ancient/Modern Philosophy: Philosophy 21
(c) Early Modern Philosophy: Philosophy 22
(d) Philosophy of Mind: Philosophy 13G
(e) Ethics: Philosophy 14, 15 or 24
(f) Philosophy of Science: Philosophy 30, 31, 32 or 38
(g) Philosophy of Language: Philosophy 17
(h) Metaphysics: Philosophy 101
(i) Theory of Knowledge: Philosophy 102

PhD Subj ect Matter ................................................... 36
Upper division units in Philosophy ........................................ 36
Note: Philosophy 101 and 102 may not be counted toward both preparatory and depth subject matter units.

Total Units for the Major ............................................. 52

Pre-Law Emphasis

Preparatory Subject Matter ............................................... 16
One course from any of the following three: ................................ 4
Philosophy 14, 15, or 16
Philosophy 5
Philosophy 12
Philosophy 24

PhD Subj ect Matter ................................................... 36
Any three courses from the following six: .................................... 12
Philosophy 102, 116, 118, 128, 189C, or 189F
Philosophy 112 ..................................................... 4
Philosophy 119 ..................................................... 4
Additional upper division elective units in philosophy ..................... 16

Total Units for the Major ............................................. 52

Pre-Med Emphasis

Preparatory Subject Matter ............................................... 16
One course from any of the following four: ................................ 4
Philosophy 24, 30, 31, or 32
Philosophy 12
Philosophy 14
Philosophy 15
Philosophy 38

PhD Subj ect Matter ................................................... 36
One course from any of the following four: ................................. 4
Philosophy 107, 108, 128, 189I
Philosophy 112 ..................................................... 4
Philosophy 121 ..................................................... 4
Additional upper division elective units in philosophy ..................... 24

Total Units for the Major ............................................. 52

Note: Admission to medical schools requires additional coursework not included in the Pre-Med Emphasis.

Major Advisers. G.J. Mathey, M. Oshana

Advising Office. 101 Young Hall

Minor Program Requirements:

Students wishing to minor in Philosophy may choose a general minor or a minor specializing in logic. There are no specific courses required for the general minor, so students may create a program to suit their own interests. The range of choice in the logic specialization is limited to the courses listed.

Philosophy—General .................................................. 20
Twenty upper division units in philosophy.

Philosophy—Logic ..................................................... 20
Philosophy 12 or Mathematics 108 ................................ 4
Philosophy 112 ..................................................... 4
Select units from Philosophy 113, 131, 134, 135, 138, 139, 189K ..................................................... 12
Minor Advisers. G.J. Mathey, M. Oshana

Honors Program. The department offers an honors program, which gives qualifying majors the opportunity to work closely with faculty and graduate students.

Courses for Non-Majors. Students majoring in most disciplines in the university will find courses relevant to their educational or career goals. Philosophy 1 is the introductory course for non-majors.

Critical Reasoning (4)
Lecture—3 hours; discussion—1 hour. Topics include the nature of reason and argument form. GE credit: ArtHum|AH, DD.

Introduction to Symbolic Logic (4)
Lecture—3 hours; discussion—1 hour. Syntax and semantics of the symbolic language sentence logic. GE credit: SciEng|SE, SL. —F. (F.) Molyneux

Ethical and Social Problems in Contemporary Philosophy (4)
Lecture—3 hours; discussion—1 hour. Philosophical issues and positions involved in contemporary moral and social problems. Possible topics include civil disobedience and revolution, discrimination, environment, population control, technology and human values, sexual morality, freedom in society. GE credit: ArtHum, Div, Wrt|AH, WE.

Philosophical Perspectives on Sexuality (3)
Lecture—3 hours. Philosophical issues related to sexuality, including, but not limited to, ethical and social issues regarding sexual practice, orientation, classification and identity. GE credit: ArtHum|AH, DD. —W. (W.) Semnet

Philosophical Perspectives on Sexuality (3)
Web virtual lecture—1.5 hours; discussion—1 hour. Topics include the nature of reason and argument form. GE credit: ArtHum|AH, DD.

Introduction to Cognitive Science (4)
Lecture/discussion—4 hours. Introduction to the interdisciplinary cognitive science approach to the study of mind, drawing concepts and methods from psychology, philosophy, linguistics, artificial intelligence, and other disciplines. GE credit: SciEng|SE, SL. —F. (F.) Molyneux

Asian Philosophy (4)
Lecture—3 hours; discussion—1 hour. Survey of the main philosophical systems of south and east Asia: Hinduism, Buddhism, Confucianism, and Taoism. Topics include the nature of reality, including God, the universe and the human self, human knowledge, and the proper conduct of human life. Offered in alternate years. GE credit: ArtHum, Div, Wrt|AH, WE.

Mind, Brains, and Computers (3)
Lecture—3 hours. Computational theories of the nature of the mind. The mind as a computer process. The possibility of machine intelligence, consciousness, and mentality. Not open for credit to students who have completed course 13G for four units. GE credit: SciEng or SocSci|SE or SS, SL. —S. (S.) Molyneux

Minds, Brains, and Computers with Discussion (4)
Lecture—3 hours; discussion—1 hour. Computational theories of the nature of the mind. The mind as a computer process. The possibility of machine intelligence, consciousness, and mentality. Not open for credit to students who have completed course 13G for four units. GE credit: SciEng or SocSci|SE or SS, SL. —S. (S.) Molyneux

Ethical and Social Problems in Contemporary Philosophy (4)
Lecture—3 hours; discussion—1 hour. Philosophical issues and positions involved in contemporary moral and social problems. Possible topics include civil disobedience and revolution, discrimination, environment, population control, technology and human values, sexual morality, freedom in society. GE credit: ArtHum, Div, Wrt|AH, WE.
15. Introduction to Bioethics (4) Lecture—3 hours; discussion—1 hour. Critical analysis of normative issues raised by contemporary medicine and biomedical research. Topics include euthanasia, abortion, reproductive technologies, genetic engineering, practitioner/patient relationship, allocation of medical resources, experimentation. Evaluation of scientific explanations of human nature. GE credit: ArtHum, Wrt | AH, SE, SL, WE.—F. Copp

16. Philosophical Foundations of American Democracy (4) Lecture—3 hours; discussion—1 hour. The philosophical underpinnings of democratic government and the tension between the goals of providing security and of preserving democracy and civil liberties. Illustration of the tension through focus on issues related to war and terrorism. GE credit: ACGH, AH, WE.—F. Copp

17. Language, Thought, and World (4) Lecture—3 hours; discussion—1 hour. Puzzles in the philosophy of language, such as what language is, how language conveys thoughts, whether we each speak our own private language, and what we can learn about the world by studying language. GE credit: SocSci, Wrt | SS, WE.—S. (S.) Mattey

21. History of Philosophy: Ancient (4) Lecture—3 hours; discussion—1 hour. Survey of Greek philosophy with special attention to the Pre-Socratics, Plato, and Aristotle. GE credit: ArtHum, Wrt | WE—Szaif

22. History of Philosophy: Early Modern (4) Lecture—3 hours; discussion—1 hour. Survey of major figures in philosophy of the seventeenth and eighteenth centuries, with emphasis on Descartes, Hume, and Kant. GE credit: ArtHum, Wrt | WE.—Szaif

24. Introduction to Ethics (4) Lecture—3 hours; discussion—1 hour. Reading of historical and contemporary philosophical works in ethics. Topics include the nature of morality, the justification of moral claims, and major ethical theories, such as consequentialist, deontological, and virtue theories. GE credit: ArtHum, Wrt | AH, WE.—S. (S.) Mattey, Oshana

30. Introduction to Philosophy of Science (4) Lecture—3 hours; discussion—1 hour. Basic problems in the philosophy of science, common to the physical, biological, and social sciences. Analysis of explanation, confirmation theory, observation and conceptual and theoretical terms, the nature of theories, operationalism and behaviorism, realism, reduction. Not open for credit to students who have taken course 104. GE credit: ArtHum, Wrt | AH, Wrt | ScEn | AH or SE, SL, WE.—Landry, Millstein

31. Appraising Scientific Reasoning (4) Lecture—3 hours; discussion—1 hour. Introduction to scientific hypotheses and the kinds of reasoning used to justify such hypotheses. Emphasis on standard logic, justification, criteria, and strategies for distinguishing scientific from pseudoscientific theories. Concrete historical and contemporary cases. GE credit: ArtHum or ScEn | AH or SE, SL, WE.—Griesemer

32. Understanding Scientific Change (4) Lecture—3 hours; discussion—1 hour. Concepts of scientific change in historical and philosophical perspective. Survey of models of growth of knowledge, 17th century to present. Relationship between logic of theories and theory change. Kuhn’s revolution model. Examples from various sciences. GE credit: ArtHum or ScEn, Wrt | AH or SE, WE.—Griesemer

38. Introduction to Philosophy of Biology (4) Lecture—3 hours; discussion—1 hour. Non-technical introduction to philosophical, social, and scientific ideas, methods and technologies in contemporary biology. Topics such as evolution, genetics, molecular biology, ecology, behavior. Philosophical consideration of determinism, reductionism, explanation, theory, modeling, observation, experimentation. Evaluation of scientific explanations of human nature. GE credit: ArtHum, Wrt | AH or SE, SL, WE.—R. (R.) Gillmore

98. Directed Group Study (1-5) Prerequisite: consent of instructor. [P/NP grading only.]

99. Special Study for Undergraduates (1-5) Prerequisite: consent of instructor. [P/NP grading only.]

Upper Division

101. Metaphysics (4) Lecture—3 hours; discussion—1 hour. Prerequisite: one course in philosophy recommended. Theories of being. Such topics as reality, substance, universals, space, time, causality, becoming, body, experience, persons, freedom, and determinism. Views of the nature and method of metaphysics. Anti-metaphysical arguments. GE credit: ArtHum, Wrt | AH, WE.—Gillmore


103. Philosophy of Mind (4) Lecture/discussion—3 hours; term paper. The relation between mind and body, our knowledge of other minds, and the explanation of mental acts. Discussion of such concepts as action, intention, and causation. GE credit: ArtHum, Wrt | AH, WE.—Molynex

104. The Evolution of Mind (4) Lecture/discussion—3 hours; term paper. Prerequisite: one course in Philosophy recommended. The interpretation of human thought and behavior through evolutionary theory. Topics include the nature/nurture debate concerning cognitive and other mental capacities and traits, and the interaction between brain, learning and development. GE credit: SocSci | SS, WE.—S. (S.) Mattey

105. Philosophy of Religion (4) Lecture—3 hours; discussion—1 hour. Prerequisite: one course in philosophy recommended. Logical, metaphysical, epistemological, and existential aspects of selected topics and problems. GE credit: ArtHum, Wrt | AH, WE.—Gillmore, Szaif

107. Philosophy of the Physical Sciences (4) Lecture—3 hours; discussion—1 hour. Prerequisite: one philosophy course or a science background recommended. Nature of testability and confirmation of scientific hypotheses; nature of scientific laws, theories, explanations, and models. Problems of causality, determinism, induction, and probability, the structure of theories and their development. GE credit: SocSci | SS, WE.—S. (S.) Mattey

108. Philosophy of the Biological Sciences (4) Lecture—3 hours; discussion—1 hour. Prerequisite: one course in philosophy or one course in philosophy recommended. Nature of biological theories, explanations, and models. Problems of evolutionary theory, ecology, genetics, and sociobiology. Science and human values. GE credit: ArtHum or ScEn, Wrt | AH or SE, WE.—Landry, Molynex

109. Philosophy of the Social Sciences (4) Lecture—3 hours; discussion—1 hour. Prerequisite: one course in philosophy or one social science recommended. The nature of the social sciences, their subject matter and methods. Simultaneous re-evaluation of the nature of natural and life sciences. Predicting and explaining human behavior. Behaviorism, reductionism, holism, and individualism. Related moral issues. The social sciences and philosophy. GE credit: ArtHum or SocSci, Wrt | AH or SS, WE.
120. Environmental Ethics (4) Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in Philosophy recommended. Conceptual and ethical issues concerning the environment. Extension of ethical theory to animals, all life, and ecosystem wholes. Topics may include contemporary issues such as global warming, sustainability and biodiversity. Not open for credit to students who have completed course 115 prior to Fall 2011. GE credit: ArtHum | AH, WE.—Millstein

121. Bioethics (4) Lecture/discussion—3 hours; extensive writing. Prerequisite: course 15 recommended. In-depth coverage of topics in bioethics including resource allocation, medical truth and disease/sability, public health, and ethical issues related to research on human subjects and emerging technologies. GE credit: AH, WE.—Kulli

123. Aesthetics (4) Lecture/discussion—3 hours; term paper. Prerequisite: one course in Philosophy recommended. Nature of art, of artistic creation, of the work of art, and of aesthetic experience; nature and validity of criticism; the role of art in its environment. GE credit: AH, WE.—Kulli

125. Theory of Action (4) Lecture—3 hours; extensive writing or discussion—1 hour. Prerequisite: one course in Philosophy recommended. Survey of prominent contemporary approaches to the major problems in action theory. Problems include issues about the nature of intentional action and the conceptual and structural elements in intentional action. Topics include the nature of the agent’s reasons, GE credit: ArtHum, Wrt | AH, WE.—Oshima

128. Rationality (4) Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in Philosophy recommended. Philosophical issues concerning rationality in its various forms. Focus is on the theoretical and practical reasoning and conditions for rational belief, choice, and action. Possible additional topics include rationality and human limitations; paradoxes of rationality; varieties of irrationality; rationality and objectivity. GE credit: AH.—Lin

129. Knowledge and the A Priori (4) Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in Philosophy recommended. Self-evidence, intuition, [in]fallibility and [in]defeasibility of a priori methods. Analytic, formalist and Kantian accounts of how knowledge can be acquired through reasoning and intuition alone, without recourse to empirical methods. Offered in alternate years. GE credit: AH, WE.—S. Molyneux

131. Philosophy of Logic and Mathematics (4) Lecture/discussion—3 hours; term paper. Prerequisite: course 12 or one course for credit in mathematics or philosophy. Nature of formal systems and mathematical theories. Selected topics include logical and semantic paradoxes; foundations of mathematics; set theory, type theory, and intuitionistic logic; philosophy of geometry; philosophical implications of Gödel’s incompleteness results. GE credit: AH, WE.—Landy

134. Modal Logic (4) Lecture/discussion—4 hours. Prerequisite: course 12 or Mathematics 108 or the equivalent. Survey of the main systems of modal logic, including Lewis systems S4 and S5. “Possible worlds” semantics and formal proofs. Applications to epistemology, ethics, or temporality. GE credit: AH.—Antoniell

135. Alternative Logics (4) Lecture/discussion—4 hours. Prerequisite: course 12, Mathematics 108, or the equivalent. Alternatives to standard truth-functional logic, including many-valued logics, modal logics, relevance logics, and non-monotonic logics. GE credit: AH.—Antoniell


137A. Philosophy of Language: Theory of Reference (4) Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in Philosophy or linguistics recommended. Survey of issues and views concerning reference, or how words refer to things. Topics include names and descriptions, the distinction between sense and reference, the puzzle of non-referring terms, candidates for reference, and possibility and necessity. Only two units of credit for students who have completed course 137. GE credit: AH, WE.—May, Sennett

137B. Philosophy of Language: Truth and Meaning (4) Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in Philosophy or linguistics recommended. Comparative treatment of theories about the relation between meaning and truth. Topics include: the identification of meaning with truth conditions, the nature of propositions, theories of linguistic understanding, the roles of mind and world in determining meaning. Only two units of credit for students who have completed course 137. GE credit: AH, WE.—May, Sennett

137C. Philosophy of Language: Semantics and Pragmatics (4) Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in Philosophy or linguistics recommended. Philosophical issues and positions concerning the meaning and use of language. Topics include the distinction between meaning and implication, the roles of context and convention in language use, speaker meaning versus linguistic meaning and speech act theory. Only two units of credit for students who have completed course 137. GE credit: AH, WE.—May, Sennett

141. Socrates and the Socratic Dialogue (4) Lecture/discussion—3 hours; term paper. Prerequisite: course 21 recommended. The philosophy of Socrates as found in the Socratic dialogues of Plato. Topics include the Socratic practice of refutation, its method, epistemological foundation, and moral purpose, Socratic euthymia and Socratic virtue theory; the paradoxes of Socratic intellectualism. GE credit: AH, WE.—Szaif

143. Hellenistic Philosophy (4) Lecture/discussion—3 hours; term paper. Prerequisite: course 21 recommended. Positions and arguments of the major schools of the Hellenistic period: Stoicism, Epicureanism, and Scepticism. Focus is on an ethical, epistemological and metaphysical questions and their interconnectedness. GE credit: AH, WE.—Szaif

145. Medieval Philosophy (4) Lecture/discussion—4 hours. Prerequisite: course 21 recommended. Major philosophers in the medieval Christian, Islamic, and Jewish traditions. Offered in alternate years. GE credit: AH, WC.—Szaif


156. Contemporary Analytic Philosophy (4) Lecture/discussion—3 hours; term paper. Prerequisite: one course in philosophy recommended. Consideration of current issues such as meaning/ reference, analytic/synthetic, reductionism, formal and ordinary language, essential properties, ontological commitment, possible worlds semantics; influential works by philosophers such as Russell, Moore, Wittgenstein, Austin, Carnap, Quine, Putnam, Kripke, van Fraassen. GE credit: AH, WE.

157. Twentieth Century European Philosophy (4) Lecture/discussion—4 hours. Prerequisite: one course in philosophy recommended. Survey of the main movements in twentieth century philosophy on the European continent, including phenomenology, existentialism, post-structuralism and postmodernism. Philosophers covered are Husserl, Heidegger, Sartre, Foucault, Derrida, GE credit: ArtHum | AH, WE.—Mattey

160. Pre-Socratics (4) Lecture/discussion—3 hours; term paper. Prerequisite: course 21 recommended. Study of the metaphysical views of such pre-Socratic figures as the Milesians, the Pythagoreans, Heraclitus, Parmenides, Empedocles, Anaxagoras, and the atomists. GE credit: AH, WE.—Szaif

161. Plato (4) Lecture/discussion—3 hours; term paper. Prerequisite: course 21 recommended. Examines Plato’s most important contributions in metaphysics, epistemology, psychology, cosmology, ethics and political philosophy. Dialogues will be selected from Plato’s middle and later writings. Offered in alternate years. GE credit: AH, WE.—Szaif

162. Aristotle (4) Lecture/discussion—3 hours; term paper. Prerequisite: course 21 recommended. An overview of Aristotle’s most central and influential writings. Topics selected from fields such as metaphysics, physics, ethics, logic, and psychology. GE credit: AH, WE.—Szaif

168. Descartes (4) Lecture/discussion—4 hours. Prerequisite: course 22 recommended. The philosophical writings of René Descartes. Topics include the relation between the nature and existence of mind and body, the existence of God, and the foundations of science. Offered irregularly. GE credit: AH, WE.—Mattey

172. Spinoza and Leibniz (4) Lecture/discussion—4 hours. Prerequisite: course 22 recommended. Seventeenth-century philosophical writings of Spinoza and Leibniz. Topics drawn from both philosophers include: the nature and existence of God, the nature of mind and body, human freedom, metaphysical monism vs. pluralism. Offered in alternate years. GE credit: ArtHum | AH, WE.—F. Mattey

174. Locke and Berkeley (4) Lecture/discussion—4 hours. Prerequisite: course 22 recommended. Principal metaphysical works of John Locke and George Berkeley. Topics include abstract ideas, existence of matter, primary and secondary qualities, essence, substance, and the relation between mind and body, human freedom, metaphysical monism vs. pluralism. Offered irregularly. GE credit: AH, WE.—W. (W.)

175. Kant (4) Lecture/discussion—4 hours. Prerequisite: course 22 recommended. Immanuel Kant’s Critique of Pure Reason and related writings. Topics include the nature of human cognition, space and time, a priori concepts, substance, causality, human freedom, and the existence of God. Offered irregularly. GE credit: AH, WE.—S. (S.) Mattey

178. Frege (4) Lecture/discussion—3 hours; extensive writing. Prerequisite: one upper-division course in philosophy recommended; consent of instructor. Development of Gottlob Frege’s views about language and logic. Formulation of his grand project known as logicism and how it led to the philosophy of language. GE credit: AH, WE.—May

Fall 2011 and on Revised General Education (GE) AH—Arts and Humanities; SC—Science and Engineering; SS—Social Sciences; OL—oral Skills; QL—Quantitative; SL—Scientific; VL—Visual; WC—World Cultures; WR—Writing Experience

Pre-Fall 2011 General Education (GE) AH—Arts and Humanities; SC—Science and Engineering; SS—Social Sciences; DL—Diverse; WH—Writing Experience

Quarter Offered: F=Fall, W=Winter, S=Spring, Su=Summer; 2017/2018 offering in parentheses
189A. Special Topics in Philosophy; History of Philosophy (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic recommended. Special topics in History of Philosophy. May be repeated up to eight units of credit. GE credit: ArtHum | AH, WE. —Mattey, Szafir

1988. Special Topics in Philosophy (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic recommended. Special topics in History of Philosophy. May be repeated up to eight units of credit. GE credit: ArtHum | AH, WE. —Gilmore or W.

189C. Special Topics in Philosophy; Theory of Knowledge (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic recommended. Special topics in Theory of Knowledge. May be repeated up to eight units of credit. GE credit: WE. —S. (S.) Mattey, Molyneux

189D. Special Topics in Philosophy; Ethics (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic recommended. Special topics in Ethics. May be repeated up to eight units of credit. GE credit: ArtHum | AH, WE. —Oshana

189E. Special Topics in Philosophy; Political Philosophy (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic recommended. Special topics in Political Philosophy. May be repeated up to eight units of credit. GE credit: ArtHum | AH, WE. —Oshana

189F. Special Topics in Philosophy; Philosophy of Mind (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic recommended. Special topics in Philosophy of Mind. May be repeated up to eight units of credit. GE credit: ArtHum | AH, WE. —Molyneux

189G. Special Topics in Philosophy; Aesthetics (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic recommended. Special topics in Aesthetics. May be repeated up to eight units of credit. GE credit: ArtHum | AH, WE. —Mattey

189H. Special Topics in Philosophy; Philosophy of Science (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic recommended. Special topics in Philosophy of Science. May be repeated up to eight units of credit. GE credit: ArtHum or SocSci | AH or SE, WE. —Griesemer, Landry, Millstein

189J. Special Topics in Philosophy; Philosophy of Language (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic recommended. Special topics in Philosophy of Language. May be repeated up to eight units of credit. GE credit: ArtHum | AH, WE. —Molyneux

189K. Special Topics in Philosophy; Logic (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic recommended. Special topics in Logic. May be repeated up to eight units of credit. GE credit: ArtHum | AH, WE. —S. (S.) Mattey

194HA. Honors Research Project (4)
Tutoring—3 hours; term paper. Prerequisite: consent of instructor; open only to students who are members of the honors program in Philosophy. Completion of honors research project under direction of an instructor. Consult departmental major adviser for list of instructors available in a given quarter. —F, W, S. (F, W, S.)

194HB. Honors Research Project (4)
Tutoring—3 hours; term paper. Prerequisite: consent of instructor; open only to students who are members of the honors program in Philosophy. Completion of honors research project under direction of an instructor. Consult departmental major adviser for list of instructors available in a given quarter. —F, W, S. (F, W, S.)

198. Directed Group Study (1-5)
(P/NP grading only)
199. Special Study for Advanced Undergraduates (1-5)
Prerequisite: consent of instructor. (P/NP grading only)

Graduate

200A. Proseminar I (4)
Seminar—3 hours; term paper. Prerequisite: consent of instructor. Open only to students in their first quarter of the Philosophy Ph.D. program. Intensive study of core works in a selected area of philosophy. Intensive experience in philosophical writing, discussion, and presentation of written work. —F. (F.)

200B. Proseminar II (4)
Seminar—3 hours; term paper. Prerequisite: consent of instructor. Limited enrollment. Open only for students in their first quarter of Philosophy Ph.D. program. Intensive study of core works in a selected area of philosophy. Intensive experience in philosophical writing, discussion, and presentation of written work. —F. (F.)

201. Metaphysics (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Topics vary from quarter to quarter and may include the following: What are things? Do names refer to things? Is there a natural world? What is the nature of necessity? May be repeated for credit when topic differs and with consent of instructor. —Gilmore

202. Theory of Knowledge (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Topics vary from quarter to quarter and may include the following: What are things? Do names refer to things? Is there a natural world? What is the nature of necessity? May be repeated for credit when topic differs and with consent of instructor. —Gilmore

203. Philosophy of Mind (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Topics in the philosophy of mind such as the mind-body problem, mental representation, consciousness, intentionality. May be repeated for credit with consent of instructor. —Molyneux

203P. Philosophy of Mind Practicum (4)
Practicum—12 hours. Prerequisite: consent of instructor. Specific research conducted and prepared for publication by advanced students in a team setting. Topics include knowledge representation and learning in neural networks, the nature and formal properties of mental representations. May be repeated for credit when topic differs and with consent of instructor. —S. (S.) Mattey

207. Philosophy of Physics (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Intensive treatment of one or more topic(s) in the philosophy of physics, such as foundations of space-time theories, the interpretation of quantum mechanics, or foundations of special relativity. May be repeated for credit when topic differs and with consent of instructor. —S. (S.) Mattey

208. Philosophy of Biology (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Intensive treatment of one or more topic(s) in the philosophy of biology, such as foundations of evolutionary theory, reductionism in biology, sociobiology and cultural evolution. May be repeated for credit when topic differs and with consent of instructor. —Griseemer, Millstein

210. Philosophy of Science (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Treatment of one or more general topics of current interest in philosophy of science. Topics may include explanation, theories of confirmation, scientific realism, reduction in physics and biology. May be repeated for credit when topic differs and with consent of instructor. —Griseemer, Landry, Millstein

212. Philosophy of Logic and Mathematics (4)
Seminar—3 hours; term paper. Prerequisite: course 112 or 113 or Mathematics 108 or 125 or the equivalent. Philosophical issues in logic and mathematics. Topics may include nature of logical and mathematical truth or knowledge, correctness of logical systems, foundations of mathematics, metaphysical and epistemological presuppositions, applications to philosophical problems and formalization of philosophical theories. May be repeated for credit when topic differs and with consent of instructor. —Antonelli, Landry

213. Advanced Logic for Graduate Students (4)
Lecture/discussion—3 hours; extensive problem solving. Prerequisite: graduate standing in Philosophy. Enrollment in the Philosophy Ph.D. program. Intensive study of advanced logic, including set theory, metatheory of predicate logic, and modal logic. May be repeated two times for credit when topic differs. —F. (F.) Antonelli, Mattey

214. Ethics (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing in philosophy or consent of instructor. Topics may include morality and motivation, objectivity in ethics, the relationship between the factual and the moral. Topics vary from quarter to quarter. May be repeated for credit when topic differs and with consent of instructor. —Copp, Oshana

217. Political Philosophy (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Advanced studies in political philosophy. Topics vary but may include distributive justice, enforcement of morality by the state, equality, obligation to obey the law, social contract theory. May be repeated for credit when topic differs and with consent of instructor. —Copp, Oshana

220. Environmental Ethics (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Intensive treatment of one or more topic(s) in environmental ethics, such as biodiversity, sustainability, composition of the moral community, invasive species, applications of ethical theories to contemporary environmental issues. —Millstein

227. Philosophy of Language (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Study of philosophical issues raised by language, such as the nature of semantic content, proper semantics for verbs of propositional attitude, feasibility and limitations of formal semantics and pragmatics for natural languages. May be repeated for credit when topic differs and with consent of instructor. —May, Sennet

228. Philosophy of Language Workshop (4)
Seminar—3 hours; extensive writing. Open to graduate students only. Discussion of recently published, unpublished and in-progress research in philosophy of language, including work on the relation of language and mind, of language and logic, and linguistic theory. May be repeated for credit when topic differs. —May

261. Plato (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Advanced seminar designed for analysis of arguments, doctrines, and texts from Plato’s works. Methods of argumenta-
Physical Education

[College of Letters and Sciences]
Barbara Jahn, M.S., Program Director

Program Office, 264 Hickey Gymnasium
530-752-1111

Committee in Charge
Keith Baar, Ph.D.
(Neurobiology, Physiology, and Behavior)
Sue Bodine, Ph.D.
(Neurobiology, Physiology, and Behavior)
Barbara A. Jahn, M.S. (Physical Education)
Susan Kauzlarich, Ph.D. (Chemistry)
Academic Senate Distinguished Graduate Mentoring Award
Tonya Kuhl, Ph.D. (Chemical Engineering and Materials Science)
Ronald Manara, M.S. (Physical Education)
Dwayne Shaffer, M.A. (Physical Education/Intercollegiate Athletics)

Faculty
Barbara A. Jahn, M.S., Supervisor

Affiliated Faculty
Lloyd Acosta, M.Ed, Lecturer/Coach
Carissa Adams, Ph.D., Lecturer
Alex Antipa, B.S., Lecturer
Erin Bridges-Thorpe, M.B.A., Lecturer/Coach
Stephen T. Bronzan, M.S., Lecturer/Assistant Director
Greg Chapla, B.A., Lecturer
Daniel Connors B.A., Lecturer/Coach
Rozanne DeWeese, M.A., Lecturer
Steven Doten, Ph.D., Lecturer
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Ron Gould, B.A. Lecturer/Coach
Yaim Graves, B.S., Lecturer
Jennifer Gross, M.A., Lecturer/Coach
Rick Henderson, B.S., Lecturer
Sara Jackson, M.S., Lecturer/Coach
Mark Johnson, M.S., Lecturer
Twila Kaufman, M.A., Lecturer/Coach
Andrea Khoo, B.S., Lecturer
Christine Kilroe, B.S., Lecturer/Coach
Theresa Ladouceur, B.S., Lecturer/Coach

John Lavallée, M.Ed, Lecturer/Coach
Daryl Lee, M.S., Lecturer
James Les, B.S., Lecturer/Coach
Daniel Leyson, M.A., Lecturer/Coach
Ron Manara, M.S., Lecturer
Bill Magee, M.B.A., Lecturer/Coach
Peter Mokelina, M.A., Lecturer/Coach
Kevin Nosek, M.S., Lecturer/Coach
Maryclaire Robinson, M.S., Lecturer
Dwayne Shaffer, M.A., Lecturer/Coach
Sandy Simpson, M.S., Lecturer
Eric Steidmayer, J.D., Lecturer/Coach
Anna Temple, B.A., Lecturer/Coach
Lisa Varmus, B.S., Athletic Trainer/Lecturer
Matt Vaughn, H.A., Lecturer/Coach
Cy Williams, M.A.T., Lecturer
James Wright, J.D., Lecturer/Coach
Karen Yoder, M.A., Lecturer/Coach
Karen Zubeltz, Ph.D., Lecturer

The Program
The Program in Physical Education facilitates the development and offering of non-major courses related to physical activities and education, fitness and health, athletic training, teacher education, and organized sport. The Program is available as part of a student’s general educational experience to enhance and broaden the understanding of personal, physical, and social skills. The PE 1 activity courses are instructional in nature, designed to introduce new skills to beginners or to improve existing skills. Physical Education 6 is offered for students participating in intramural athletics. Additional lower division courses include those in special skill areas, such as life-saving and water safety, health and fitness, and athletic training. Upper division courses include advanced classes in coaching, sociology of sports, and a series of courses that meet the mandatory requirements for students pursuing teacher preparation and certification.

Courses in Physical Education (PHE)

Lower Division
1. Physical Activities (0.5)
   Laboratory—2 hours.
   Physical Education Activities classes offered in the following areas: aquatics, personal fitness, martial arts, individual sports, and team sports. These academic classes are instructional in nature, and students are expected to improve activity specific skills and knowledge. May be repeated, along with course 6, for a combined total of 6 units. Credit limited to 6 units in combination with course 6. (P/NP grading only)—F, W; S, F, W, S.

6. Preparation and Participation in ICA Competition (1)
   Practice—3 hours per week.
   Prerequisite: consent of instructor (head coach). Classes offered in all UC Davis intercollegiate athletic sports and are restricted to student-athletes who are members. May be repeated, along with course 1, for a combined total of 6 units. (P/NP grading only)—F, W, S, F, W, S.

7. Professional Physical Education Activities: Men and Women (1)
   Lecture—1 hour; laboratory—2 hours.
   Prerequisite: consent of instructor (head coach) for (a) coaching competitive athletics; (b) classroom teaching and coaching, and (c) classroom teaching and officiating. May be repeated for a total of six units. (P/NP grading only)—F, W, S.

8. Student-Athlete Life Skills (1)
   Lecture—1 hour. Prerequisite: consent of instructor. Open to intercollegiate student-athletes only. For intercollegiate student-athletes only. For intercollegiate student-athletes only. Balancing academic and athletic demands. Academic, psychological, and sociocultural issues which influence success as a college student-athlete. (P/NP grading only)—F, W, W.

15. Administration of Intramural Sports (2)
   Lecture—2 hours. Planning and administering intramural sports programs at the high school and college level.

25. Theory of Lifesaving and Water Safety (2)
   Lecture—1 hour; laboratory—2 hours. Prerequisite: sound physical condition, and no physical handicap that would render student unable to perform the required skills and ability to pass preliminary swimming test. Provides the student with the knowledge, organizational procedures, and skill development necessary to provide for water safety and save his/her own life or the life of another in an aquatic emergency. (American Red Cross Advanced Lifesaving Certificate awarded upon successful completion of necessary requirements).—S, S.

40. Drugs and Society (2)
   Lecture—2 hours; film-viewing—5 hours total. Pharmacology, methods of use, and effects of use of psychoactive and performance-enhancing drugs. Historical overview of drug use. Identification of behavior of “at-risk” and “user” populations. (P/NP grading only)—F, W, S, S.

44. Principles of Healthful Living (2)
   Lecture—2 hours. Application of scientific and empirical knowledge to personal, family, and community health problems. (P/NP grading only)—F, W, S, S.

92. Physical Education Internship (1-5)
   Internship—3-15 hours; written project and evaluation. Prerequisite: consent of instructor; enrollment dependent on availability of intern positions, with priority given to Exercise Biology majors. Work experience in the application of physical activity programs to teaching, recreational, clinical or research situations under department faculty supervision. May be repeated for credit once but no internship units will be counted toward Exercise Biology major. (P/NP grading only)—F, W, S, S, S.

97T. Tutoring in the Community (1-5)
   Tutorial—1.5 hours. Prerequisite: lower division standing and consent of Program Director. Tutoring of students in lower division physical activity courses. Weekly meetings with instructor in charge of courses. Written report required. May be repeated one time for credit. (P/NP grading only)—F, W, S, S, S.