

PEDIATRICS AND HUMAN DEVELOPMENT

608*. **Pediatric Pulmonary Disease Clerkship**
 Fall, Spring, Summer. 6 to 12 credits in increments of 6 credits. May reenroll for a maximum of 12 credits.
 P: PHD 600. R: Open only to graduate-professional students in College of Human Medicine.
 Inpatient and outpatient clinical experiences in evaluating and managing pediatric patients with pulmonary problems. Diagnostic procedures, clinically relevant physiology, current research.

PEDIATRICS PED

580*. **Health Professionals' Role in the Treatment of Substance Abuse**
 Spring. 1(01-00)
 R: Open only to graduate and graduate-professional students in the colleges of Human Medicine, Nursing, and Osteopathic Medicine or approval of department.
 Practical knowledge base for recognizing and dealing with individuals affected by substance abuse.
 QA: PED 580

590*. **Special Problems in Pediatrics**
 Fall, Spring, Summer. 1 to 8 credits.
 May reenroll for a maximum of 8 credits.
 R: Open only to graduate-professional students in the College of Osteopathic Medicine. Approval of department.
 Experimental, theoretical, or applied problems under faculty direction.
 QA: PED 590

600*. **Pediatrics Clerkship**
 Fall, Spring, Summer. 6 to 12 credits in increments of 6 credits.
 R: Open only to graduate-professional students in the colleges of Osteopathic and Human Medicine. 2 years of medical school; approval of department.
 Practical clinical exposure in the area of pediatrics.
 QA: PED 600

620*. **Directed Studies**
 Fall, Spring, Summer. 2 to 24 credits.
 May reenroll for a maximum of 48 credits.
 P: PED 600. R: Open only to graduate-professional students in the College of Osteopathic Medicine. Approval of department.
 Study in general or specialty pediatrics.
 QA: PED 620

PHARMACOLOGY AND TOXICOLOGY PHM

350*. **Introductory Human Pharmacology**
 Fall, Spring. 3(3-0)
 P: PSL 240; PSL 241 or concurrently R: Sophomores or higher
 General principles, CNS and autonomic nervous system, cardiovascular and renal drugs; chemotherapy; other selected basic pharmacology topics.
 QA: PHM 350

430*. **Drug Abuse**
 Fall of odd-numbered years. 3(3-0)
 R: Juniors and above; Lower classes-approval of Dept.
 Fundamentals of pharmacology, physiology and neuroscience for a basic understanding of the pharmacodynamics of drugs of abuse; survey of other aspects of drugs of abuse.
 QA: PHM 430

450*. **Introduction to Chemical Toxicology**
 Spring. 3(3-0)
 P: BS 210, 211 and 212; CEM 242 R: Juniors and above
 Basic concepts of mammalian toxicology, including disposition of chemicals in the body, detoxication, elimination, and mechanisms of toxicity in major organ systems. Selected toxic agents discussed.
 QA: PHM 450

480*. **special problems**
 Fall, Spring, Summer. 1 to 3 credits.
 May reenroll for a maximum of 9 credits.
 P: Approval of individual faculty member each term.
 Limited amounts of individual work on selected research problems for undergraduate students.
 QP: PHM 350 PHM 430 QA: PHM 480

554*. **Veterinary Pharmacology and Toxicology I**
 Fall. 3(3-0)
 P: Completion of Year 1 of the College of Veterinary Medicine. R: Year 2 College of Veterinary Medicine Veterinary Medicine none
 Drug absorption, distribution, biotransformation, elimination, receptor theory and pharmacogenetics; chemical toxicity; autonomic nervous system, cardiovascular and renal pharmacology.
 QA: PHM 554

555*. **Veterinary Pharmacology and Toxicology II**
 Spring. 3(3-0)
 P: Completion of Year 1 of the College of Veterinary Medicine. R: Year 2 College of Veterinary Medicine Veterinary Medicine none
 Endocrine, antacid and central nervous system pharmacology; chemotherapy; antimicrobials, anti-helminthics, antineoplastics.
 QA: PHM 555

556*. **Veterinary Pharmacology**
 Fall. 5(5-0)
 P: Admission to the College of Veterinary Medicine. R: College of Veterinary Medicine Veterinary Medicine none
 General principles of pharmacology (drug absorption, disposition, biotransformation, excretion, pharmacokinetics), pharmacologic agents of the autonomic nervous, cardiovascular, renal, central nervous, endocrine and gastrointestinal systems.

557*. **Veterinary Toxicology**
 Spring. 2(2-0)
 P: Admission to the College of Veterinary Medicine. R: College of Veterinary Medicine Veterinary Medicine none
 Principles of toxicology (determinants of toxic responses, analytical toxicology, genetic toxicology, toxin management); diagnosis, prevention, and treatment of common toxicoses.

563. **Medical Pharmacology**
 Summer. 3(3-0)
 R: Graduate-professional students in colleges of Human and Osteopathic Medicine.
 General principles of pharmacology and selected drugs. Rational drug therapy.

594*. **Veterinary Toxicology**
 Spring. 3(3-0)
 P: Completion of Year 2 of the College of Veterinary Medicine. R: Year 3 College of Veterinary Medicine Veterinary Medicine none
 Pharmacological basis and pathological features of diseases of animals caused by common toxic chemicals with emphasis on clinical manifestations, diagnosis, prevention and treatment.

810*. **Synaptic Transmission**
 Spring of odd-numbered years. 3(03-00)
 R: Approval of Department
 Major and electrical aspects of nerve impulse transmission at synaptic and neuroeffector junctions. Influence of drugs on these processes.
 QA: PHM 810

813*. **Cardiac Pharmacology**
 Spring of even-numbered years. 3(03-00)
 P: PHM 819, PHM 820 R: Graduate Students Approval of Department
 Effects of drugs on normal physiological and biochemical processes in cardiac cells
 QA: PHM 813

814*. **Advanced principles of Toxicology**
 Spring of even-numbered years. 3(03-00)
 P: PHM 819 or equivalent
 Biochemical, molecular and physiological mechanisms of toxicology; responses of major organ systems to chemical insult; mechanisms of mutagenesis and carcinogenesis.
 QA: PHM 814

815*. **Concepts in Tumorigenesis**
 Spring of odd-numbered years. 2(02-00)
 P: BCH 451, 452 and 453 or equivalent; PSL 431 432 and 433 or equivalent;
 R: Approval of department
 Examination and discussion of literature for each topic in tumorigenesis.
 QP: PSL 433 BCH 453 QA: PHM 815

819*. **Principle of Drug-Tissue Interactions**
 Summer. 5(05-00)
 R: Graduate Students Approval of department
 Comprehensive overview of the important general principles necessary to understand the interaction of chemicals with biological systems.
 QA: PHM 819

820*. **Drug Actions, Effects and Uses**
 Fall. 5(05-00)
 P: PHM 819 R: Graduate Students Approval of Department
 Comprehensive presentation of the major principles of how the major drugs act physiologically and biochemically.
 QA: PHM 821

827*. **Advanced Neurobiology**
 Fall. 4(04-00) Interdepartmental with the Department(s) of Zoology, Physiology.
 R: Graduate students Approval of department
 Function of nervous system at cellular level: membrane biophysics and potentials, synaptic transmission.
 QA: PHM 827

839*. **Systems Neuroscience**
 Spring of odd-numbered years. 4(04-00) Interdepartmental with the Department(s) of Anatomy, Physiology.
 R: Graduate students
 Anatomy, pharmacology, and physiology of multicellular neural systems, including major sensory, motor, autonomic and chemo-regulatory systems in brain of vertebrates.
 QA: PHM 839

PHARMACOLOGY AND TOXICOLOGY

841*. **Advanced Endocrine Physiology and Pharmacology**
 Fall of odd-numbered years. 4(04-00)
 Interdepartmental with the Department(s) of Physiology, Psychology.
 P: PSL 431, PSL 432, BCH 451, BCH 452

R: Graduate Students
 Basic and advanced concepts of endocrine and reproductive physiology and pharmacology
 QA: PHM841

870*. **Problems**
 Fall, Spring, Summer. 2 to 4 credits.
 May reenroll for a maximum of 12 credits.
 R: Graduate Students Approval of department

Limited amounts of individual work on selected research problems for first-year graduate students in the Dept of PHM/TOX
 QA: PHM 870

899*. **Master's Thesis Research**
 Fall, Spring, Summer. 1 to 3 credits.
 May reenroll for a maximum of 6 credits.
 R: Graduate Students Pharmacology and Toxicology Approval of Department

QA: PHM 899

910*. **Seminar**
 Fall, Spring. 1(01-00) May reenroll for a maximum of 3 credits.
 R: Graduate students Approval of Department

Discussion of recent topics in pharmacology and toxicology by department or invited outside speakers, or reporting on research by department students
 QA: PHM 910

980*. **Problems**
 Fall, Spring, Summer. 2 to 5 credits.
 May reenroll for a maximum of 20 credits.
 R: Graduate students Approval of department

Limited work in selected research projects
 QA: PHM 980

999*. **Doctoral Dissertation Research**
 Fall, Spring, Summer. 1 to 24 credits.
 May reenroll for a maximum of 99 credits.
 R: Graduate Students Pharmacology and Toxicology Approval of department

Individual work on research problems for the doctoral degree in pharmacology
 QA: PHM 999

PHILOSOPHY PHL

130. **Logic and Reasoning**
 Fall, Spring, Summer. 3(3-0)
 R: Not open to students with credit in PHL

330.
 Deductive and inductive reasoning. Topics such as rational argumentation, fallacies, definition, meaning, truth and evidence. Techniques for critical reading and thinking.
 QA: PHL 103

200. **Introduction to Philosophy**
 Fall, Spring. 3(3-0)

Theories of knowledge, values, and reality. Topics such as objectivity, relativism and cultural diversity, moral responsibility, aesthetic values, the self, existence of God, free will, minds and machines.
 QA: PHL 101 PHL 102 PHL 300

210. **History of Western Philosophy: Ancient and Medieval**
 Fall. 3(3-0)

Greek philosophy with emphasis on Plato and Aristotle; Roman philosophy; and medieval philosophy.
 QA: PHL 211

211. **History of Western Philosophy: Modern**
 Spring. 3(3-0)
 P: PHL 210 recommended.

Philosophy from the Renaissance through the nineteenth century, with emphasis on such philosophers as Descartes, Spinoza, Locke, Hume, Kant, Hegel, Kierkegaard and Nietzsche.
 QA: PHL 213

312*. **Chinese Philosophy**
 Spring. 3(3-0)
 R: Not open to freshmen and sophomores.

Central traditions in the history of Chinese philosophy: Confucianism, Taoism, Chan Buddhism, Neo-Confucianism.
 QA: PHL312

320*. **Existentialism**
 Fall. 3(3-0)
 P: One PHL course.

Husserl, Jaspers, Kierkegaard, Marcel, Nietzsche, Sartre, and de Beauvoir. Topics such as hope, anxiety, bad faith, subjectivity, freedom, social being, phenomenological method.
 QA: PHL323

330*. **Formal Reasoning I**
 Fall, Spring. 4(4-0)

Formal methods in deductive reasoning. Logic of connectives and quantifiers, including identity, functions, and descriptions.
 QA: PHL337 PHL338

331*. **Formal Reasoning II**
 Fall, Spring. 4(4-0)
 P: PHL 330. Axiomatic method. Informal axiomatizations of set theory and probability theory. Metatheory of elementary logic.
 QP: PHL337 QA: PHL338

340*. **Ethics**
 Fall, Spring. 3(3-0)
 P: One PHL course.

Inquiry through the writings of some important theorists, their critics and their contemporary followers. Aristotle, Hume, Kant, Mill, Sidgwick.
 QA: PHL330 PHL431

344*. **Ethical Issues in Health Care**
 Fall, Spring. 4(4-0)
 R: Not open to freshmen and sophomores.

Termination of treatment, truth-telling, informed consent, human experimentation, reproductive issues, allocation of scarce resources, justice and the health care system.
 QA: PHL340

345*. **Business Ethics**
 Fall. 4(4-0) Interdepartmental with the Department(s) of General Business and Business Law.
 R: Juniors and above.

Ethical dimensions of the relationships between a business and employees, consumers, other businesses, society, government, and the law. Readings from philosophical and business sources.
 QA: PHL345

347*. **Aesthetics**
 Fall. 3(3-0)

General introduction to theories of aesthetic value, the nature of art, and the works of such aestheticians as Plato, Hume, Kant, Hegel, Tolstoy, Santayana, Wittgenstein, Iserberg, Langer, Murdoch.
 QA: PHL350

350*. **Moral and Political Issues**
 Fall. 3(3-0)
 P: One PHL course.

Justice, rights and responsibilities. Topics such as equality of opportunity, justice for the aged and future generations, and abortion.
 QA: PHL460

354*. **Philosophy of Law**
 Fall, Spring. 3(3-0)
 P: One PHL course or two PLS courses.

Legal concepts such as punishment, responsibility, rights and duties, and judicial decisions. Legal theories such as natural law, positivism and realism.
 QA: PHL360

356*. **Philosophical Aspects of Feminism**
 Fall, Spring. 4(4-0)

Conceptual and normative issues in feminist theory, such as sexism, oppression, coercion, control, power, equality, personhood, respect and self-respect, rape, separatism, community, intimacy and autonomy.
 QA: PHL341

357*. **Philosophy of Karl Marx**
 Spring. 3(3-0)
 P: One PHL course.

Marx's philosophical thought and its bearing on science, religion, art and politics.
 QA: PHL366

360*. **Philosophy of Language**
 Spring. 3(3-0)
 P: One course in Philosophy.

Elementary topics in semantics, linguistic pragmatics, and philosophy of language. Meaning, denotation, speech acts, and linguistic relativity.
 QA: PHL370

380*. **Nature of Science**
 Fall, Spring. 3(3-0)
 P: One course in the biological, physical, or mathematical sciences.

Conflicting views about science and values. Such topics as scientific methodology, the objectivity and value neutrality of science, the presuppositions, goals, and limits of science; science and decision making.
 QA: PHL380

410*. **Plato**
 Fall. 4(4-0)
 P: PHL 210 or two other Philosophy courses.

Development of Platonic philosophy from the early Socratic Academy. Emphasis on the middle dialogues, especially the 'Republic'.
 QP: PHL211 QA: PHLA10

411*. **Aristotle**
 Spring. 4(4-0)
 P: PHL 210 or PHL 410 or two other Philosophy courses. R: Not open to freshmen and sophomores.

Aristotle's, major works and his major contributions to the sciences, metaphysics, ethics, and politics.
 QP: PHL 211 ORPHL 410 QA: PHLA11 PHLA12

412*. **Medieval Philosophy**
 Fall of even-numbered years. 3(3-0)
 P: PHL 210 or two other Philosophy courses. R: Not open to freshmen and sophomores.

Medieval philosophy from the fourth to the sixteenth centuries, emphasizing the contributions of Augustine and Aquinas.
 QP: PHL211 ORPHL212ORPHL411 QA: PHLA14

413*. **Continental Rationalism**
 Fall of odd-numbered years. 4(4-0)
 P: PHL 211 or two other Philosophy courses.

The rationalists of the seventeenth century, with emphasis on Descartes, Spinoza and Leibniz.
 QP: PHL212 QA: PHLA13