

**Descriptions—Pediatrics and Human Development
of
Courses**

**601. Human Development and
Pediatric Sub-specialties**

Fall, Spring, Summer. 6 to 24 credits. A student may earn a maximum of 24 credits in all enrollments for this course. P: PHD 600. R: Open only to graduate-professional students in College of Human Medicine.

Experience in clinical, behavioral, and basic sciences related to pediatrics and human development.

602. Ambulatory Pediatrics

Fall, Spring, Summer. 6 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P: PHD 600. R: Open only to graduate-professional students in College of Human Medicine.

Clinical experience in outpatient and community setting involving ongoing child health care.

**603. Pediatric Infectious Diseases
Clerkship**

Fall, Spring, Summer. 6 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P: PHD 600. R: Open only to graduate-professional students in College of Human Medicine.

Office, clinic, and inpatient experiences in evaluating and managing pediatric patients with infectious diseases.

604. Neonatology

Fall, Spring, Summer. 6 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P: PHD 600. R: Open only to graduate-professional students in College of Human Medicine.

Clinical experiences: modern neonatal techniques and care patterns for neonates including follow up.

605. Pediatric Cardiology Clerkship

Fall, Spring, Summer. 6 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P: PHD 600. R: Open only to graduate-professional students in College of Human Medicine.

Office, clinic, and hospital experience in diagnostic and therapeutic pediatric cardiology including special diagnostic procedures.

**606. Pediatric Endocrinology and
Metabolism Clerkship**

Fall, Spring, Summer. 6 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P: PHD 600. R: Open only to graduate-professional students in College of Human Medicine.

Clinic and hospital experience in evaluating patients with endocrine and metabolic disorders.

**607. Pediatric Hematology and
Oncology**

Fall, Spring, Summer. 6 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P: PHD 600. R: Open only to graduate professional students in College of Human Medicine.

Clinical experience in evaluating and managing pediatric patients with common hematologic and oncologic disorders

**608. Pediatric Pulmonary Disease
Clerkship**

Fall, Spring, Summer. 6 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. 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.

633. Extended Clinical Experience

Fall, Spring, Summer. 6(6-0) P: (PHD 600)

Based in community hospitals and ambulatory sites, this is a 4 week clinical experience emphasizing interviewing skills, history, physical exam, problem solving and therapy.

635. Core Competencies I

Fall. 2 credits. A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Human Medicine; Family Practice; and Medicine. Administered by Human Medicine. P: FMP 602. R: Open only to graduate-professional students in College of Human Medicine.

A weekly seminar addressing core knowledge and skills from an interdisciplinary perspective.

637. Core Competencies III

Spring, Summer. 2 credits. A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Human Medicine; Family Practice; Medicine; Obstetrics, Gynecology and Reproductive Biology; and Surgery. Administered by Human Medicine. P: FMP 602. R: Open only to graduate-professional students in College of Human Medicine.

A weekly seminar addressing core knowledge and skills from an interdisciplinary perspective.

**PHARMACOLOGY
AND TOXICOLOGY PHM**

**Department of Pharmacology
and Toxicology
College of Human Medicine
College of Osteopathic Medicine
College of Veterinary Medicine**

**350. Introductory Human
Pharmacology**

Fall, Spring. 3(3-0) P: PSL 250. R: Not open to freshmen.

General principles of pharmacology. Central and autonomic nervous systems. Cardiovascular and renal drugs. Chemotherapy. Anti-infective drugs and endocrine agents.

430. Drug Abuse

Fall of odd years. 3(3-0) R: Not open to freshmen and sophomores.

Pharmacology, physiology, and neuroscience related to the pharmacodynamics of drugs of abuse.

**450. Introduction to Chemical
Toxicology**

Spring. 3(3-0) P: BS 110, BS 111, CEM 251. R: Not open to freshmen and sophomores.

Mammalian toxicology. Disposition of chemicals in the body, detoxication, elimination, and mechanisms of toxicity in major organ systems. Selected toxic agents.

480. Special Problems

Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 9 credits in all enrollments for this course. R: Approval of department. Not open to students with credit in PHM 350 or PHM 430.

Individual work on selected research problems.

556. Veterinary Pharmacology

Fall. 5(5-0) R: Completion of 2 semesters of the graduate-professional program in the College of Veterinary Medicine. Not open to students with credit in PHM 554 or PHM 555.

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) R: Completion of 3 semesters of the graduate-professional program in the College of Veterinary Medicine. Not open to students with credit in PHM 594.

Determinants of toxic responses, analytical toxicology, genetic toxicology, and 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.

**658. Research Problems in
Pharmacology and Toxicology**

Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Completion of 4 semesters of the graduate-professional program in the College of Veterinary Medicine. Approval of department.

Selected research problems in pharmacology or toxicology.

810. Synaptic Transmission

Spring of odd years. 3(3-0) R: Approval of department.

Chemical and electrical aspects of nerve impulse transmission at synaptic and neuroeffector junctions. Influence of drugs.

813. Cardiovascular Pharmacology

Spring of even years. 3(3-0) R: Approval of department.

Cardiovascular signal transduction and control in normal and pathophysiologic states.

**814. Advanced Principles of
Toxicology**

Spring of even years. 3(3-0) P: PHM 819.

Biochemical, molecular and physiological mechanisms of toxicology. Responses of major organ systems to chemical insult. Mechanisms of mutagenesis and carcinogenesis.

815. Concepts in Tumorigenesis
Spring of odd years. 2(2-0) P: BCH 462, PSL 432, PSL 460. R: Approval of department.
Examination and discussion of literature in tumorigenesis.

819. Principles of Drug-Tissue Interactions
Spring. 3(3-0) R: Approval of department. Not open to students with credit in PHM 820.
General principles relevant to the interaction of chemicals with biological systems.

820. Cellular and Molecular Mechanisms in Pharmacology and Toxicology
Summer. 3(3-0) P: (BCH 801 and BCH 802 and PHM 819) R: Approval of department.
Comprehensive overview of the cellular and molecular mechanisms of drug and chemical actions in biological systems.

821. Principles of Systemic and Integrated Pharmacology and Toxicology
Fall. 5(5-0) P: (PHM 820) R: Approval of department.
Comprehensive overview of drug and chemical actions on the major organ systems of intact humans and other mammals.

827. Advanced Neurobiology
Fall. 4(4-0) Interdepartmental with Physiology; and Zoology.
Nervous system function at the cellular level: membrane biophysics and potentials, synaptic transmission.

839. Systems Neuroscience
Spring of odd years. 4(4-0) Interdepartmental with Anatomy; and Physiology. Administered by Anatomy. R: Open only to graduate students in the Colleges of Human Medicine, Osteopathic Medicine, Agriculture and Natural Resources, Natural Science, and Veterinary Medicine.
Anatomy, pharmacology, and physiology of multicellular neural systems. Sensory, motor, autonomic, and chemo-regulatory systems in vertebrate brains.

841. Advanced Endocrine Physiology and Pharmacology
Fall. 4(4-0) Interdepartmental with Physiology; Animal Science; and Psychology. Administered by Physiology. P: BCH 461, PSL 432. R: Open only to graduate students in the Colleges of Human Medicine, Osteopathic Medicine, Veterinary Medicine, Natural Science, and Agriculture and Natural Resources.
Basic and advanced concepts of endocrine and reproductive physiology and pharmacology.

870. Research Rotation
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Open only to first year graduate students in Pharmacology and Toxicology. Approval of department.
Individual work on selected research problems.

899. Master's Thesis Research
Fall, Spring, Summer. 1 to 8 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Open only to graduate students in Pharmacology and Toxicology. Approval of department.

910. Seminar
Fall, Spring. 1(1-0) A student may earn a maximum of 3 credits in all enrollments for this course. R: Open only to graduate students. Approval of department.
Discussion of recent topics in pharmacology and toxicology by faculty or invited outside speakers. Students research reports.

980. Problems
Fall, Spring, Summer. 2 to 5 credits. A student may earn a maximum of 20 credits in all enrollments for this course. R: Open only to graduate students. Approval of department.
Limited work in selected research projects.

999. Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 36 credits in all enrollments for this course. R: Open only to graduate students in Pharmacology and Toxicology. Approval of department.

PHILOSOPHY **PHL**
Department of Philosophy
College of Arts and Letters

130. Logic and Reasoning
Fall, Spring. 3(3-0) 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.

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.

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.

211. History of Western Philosophy: Modern
Spring. 3(3-0) P: (PHL 210)
Philosophy from the Renaissance through the nineteenth century, with emphasis on such philosophers as Descartes, Spinoza, Locke, Hume, Kant, Hegel, Kierkegaard and Nietzsche.

312. Chinese Philosophy
Spring. 3(3-0) R: Not open to freshmen or sophomores.
Central traditions in the history of Chinese philosophy: Confucianism, Taoism, Chan Buddhism, Neo-Confucianism.

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.

330. Formal Reasoning I
Fall, Spring. 4(4-0)
Formal methods in deductive reasoning. Logic of connectives and quantifiers, including identity, functions, and descriptions.

331. Formal Reasoning II
Spring. 4(4-0) P: (PHL 330)
Axiomatic method. Informal axiomatizations of set theory and probability theory. Metatheory of elementary logic.

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.

344. Ethical Issues in Health Care
Fall, Spring. 4(4-0) R: Not open to freshmen or sophomores.
Termination of treatment, truth-telling, informed consent, human experimentation, reproductive issues, allocation of scarce resources, justice and the health care system.

345. Business Ethics
Fall. 4(4-0) R: Not open to freshmen or sophomores.
Ethical dimensions of the relationships between a business and employees, consumers, other businesses, society, government, and the law.

347. Aesthetics
Fall. 3(3-0) P: One course in art or literature or music or philosophy.
Theories of aesthetic value and the nature of art. Works of such aestheticians as Plato, Hume, Kant, Hegel, Tolstoy, Santayana, Wittgenstein, Isenberg, Langer, Murdoch.

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.

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.

355. Philosophy of Technology
Spring. 4(4-0) Interdepartmental with Lyman Briggs School. Administered by Lyman Briggs School. P: Completion of Tier I writing requirement. R: Open only to sophomores or juniors or seniors in Lyman Briggs School or the Department of Philosophy.
Examination of the desirability of technology, its social forms, and its alternatives. Conventional productivist, ecological progressive, and radical humanist outlooks.

356. Philosophical Aspects of Feminism
Fall, Spring. 4(4-0) P: One PHL course.
Conceptual and normative issues in feminist theory. Topics such as sexism, oppression, coercion, control, power, equality, personhood, respect and self-respect, rape, separatism, community, intimacy, and autonomy.