851. Advanced General Pathology
Fall of even-numbered years. 3(3-0)
P: PTH 852 concurrently. R: Approval of department. Fundamental concepts of cell injury, inflammation, and oncogenesis. Mechanisms of disease. QA: PTH 806

852. Advanced General Pathology Laboratory
Fall of even-numbered years. 1(0-2)
P: PTH 851 concurrently. Histo-pathologic and ultrastructural study of general morphologic patterns of inflammation cell injury and neoplasms. QA: PTH 806L

853. Advanced Systemic Pathology
Spring of even-numbered years. 4(3-2)
P: Approval of department. Pathological aspects of the nervous, endocrine, cardiovascular, respiratory, urinary, genital, musculoskeletal, intestinal and special sense systems. QA: PTH 802, PTH 869, PTH 807

854. Advanced Clinical Pathology
Spring of odd-numbered years. 3(0-3)
P: PTH 540, PTH 552, PTH 609, PTH 651. R: Approval of department. Hemostasis including anemias, leukocyte responses and hemostasis. Clinical chemistry including tests to evaluate organs. QA: PTH 865

555. Proseminar
Fall of odd-numbered years. 2(2-0)
P: Approval of department. Preparation, editing, and review of research manuscripts and grant applications. Critique of oral presentations. Illustrations of research data and thesis preparation. QA: PTH 905

556. Pathoanatomy
Summer of even-numbered years. 3(0-3)
P: Approval of department. Changes in tissues of animals used in toxicologic studies. Clinical pathologic assessments. Gross, histologic, and ultrastructural changes in organ systems. QA: PTH 518

557. Correlative Diagnostic Pathology
Fall, Spring, Summer. 3(0-6)
P: Approval of department. Diagnosis of animal diseases by necropsy, biopsy, or clinical pathology. Correlation of diagnostic test results with history, laboratory data and morphologic findings. Compiled and formal presentation of findings. QA: PTH 808, PTH 810

399. Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 96 credits in all enrollments for this course. R: Admission to doctoral program in Pathology. QA: PTH 999

PEDIATRICS AND HUMAN DEVELOPMENT

PHD

Department of Pediatrics and Human Development
College of Human Medicine

523. Genetics for Medical Practice
Summer. 1(1-0) Interdepartmental with Biochemistry.
R: Graduate-professional students in College of Human and Osteopathic Medicine. Basic principles of genetics for medical students.

524. Genetics Clinic
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: PHD 523 R: Graduate-professional students in College of Human and Osteopathic Medicine. Role of genetics in health care delivery under the direction of a faculty member.

591. Special Problems in Human Development
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Graduate-professional students in College of Human and Osteopathic Medicine. Work under the direction of a faculty member on an experimental, theoretical, or applied problem.

600. Pediatric Specialty Clerkship
Fall, Spring, Summer. 12 credits. R: Open only to graduate-professional students in College of Human Medicine. Clinical experience in outpatient, inpatient, and community setting involving ongoing child health care.

601. Human Development and Pediatric Sub-specialties
Fall, Spring, Summer. 6 to 12 credits. A student may earn a maximum of 24 credits in all enrollments for this course. R: PHD 600. R: Open only to graduate-professional students in College of Human Medicine.

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. R: PHD 600. R: Open only to graduate-professional students in College of Human Medicine.

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. R: PHD 600. R: Open only to graduate-professional students in College of Human Medicine. Combines office, clinic, and inpatient experiences in evaluation and managing pediatric patients with infectious diseases. QA: PHD 611

PEDIATRICS

Department of Pediatrics
College of Osteopathic Medicine

589. Health Professionals' Role in the Treatment of Substance Abuse
Spring. 1(1-0) 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

604. Neonatology
Fall, Spring, Summer. 6 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: 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. QA: PHD 600

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. R: PHD 600. R: Open only to graduate-professional students in College of Human Medicine. Office, clinic, and hospital experiences in diagnostic and therapeutic pediatric cardiology including special diagnostic procedures.

606. Pediatric Endocrinology and Metabolism
Fall, Spring, Summer. 6 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: PHD 600. R: Grad professional students in College of Human Medicine. Clinical experience in evaluating and managing pediatric 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. R: Open only to graduate-professional students in the colleges of Human Medicine, Nursing, and Osteopathic Medicine. Inpatient and outpatient clinical experience in evaluating and managing pediatric patients with 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. R: Open only to graduate-professional students in College of Human Medicine. Inpatient and outpatient clinical experience in evaluating and managing pediatric patients with pulmonary problems. Diagnostic procedures, clinically relevant physiology, current research.

PEDiatrics—Descriptions of Courses
650. Introductory Human Pharmacology
Fall, Spring. 3(3-0)
P: PSL 252. R: Not open to freshmen.
QA: PHM 450

450. Introduction to Chemical Toxicology
Spring, 3(3-0)
P: RS 110, RS 117, CRM 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.
QA: PHM 450

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 480.
Individual work on selected research problems.
QA: PHM 350, PHM 480 QA: PHM 480

554. Veterinary Pharmacology and Toxicology I
Fall. 3(3-0)
R: Completion of the first year of the graduate-professional program in the College of Veterinary Medicine. Not open to students with credit in PHM 556.
Temporary approval effective from Fall Semester 1992 through Spring Semester 1993.
QA: PHM 554

555. Veterinary Pharmacology and Toxicology II
Spring, 4(4-0)
R: Completion of the first year of the graduate-professional program in the College of Veterinary Medicine. Not open to students with credit in PHM 556.
Endocrine, autonomic and central nervous system pharmacology. Chemotherapy. Antimicrobials, antihelminitics, and antineoplastics.
Temporary approval effective from Fall Semester 1992 through Spring Semester 1993.
QA: PHM 555

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 2 semesters of the graduate-professional program in the College of Veterinary Medicine. Not open to students with credit in PHM 554.
Deterreants of toxic responses, analytical toxicology, genetic toxicology, and toxima management. Diagnosis, prevention, and treatment of common toxicoses.
QA: PHM 594

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.

655. 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: Approval of department. Selected research problems in pharmacology or toxicology.
QA: PHM 554, PHM 555, PHM 594

810. Synaptic Transmission
Spring, of even-numbered years. 3(3-0)
R: Approval of department.
Chemical and electrical aspects of nerve impulse transmission at synaptic and neurotransmitter junctions. Influence of drugs.
QA: PHM 810

815. Cardiac Pharmacology
Spring, of odd-numbered years. 3(3-0)
P: PHM 820. R: Open only to graduate students. Approval of department.
Evaluations of normal physiological and biochemical processes in cardiac cells.
QA: PHM 813

814. Advanced Principles of Toxicology
Spring, of odd-numbered years. 3(3-0)
P: PHM 554, PHM 819.
Biochemical, molecular and physiological mechanisms of toxicity. Properties of major organ systems to chemical insult. Mechanisms of mutagenesis and carcinogenesis.
QA: PHM 814

815. Concepts in Tumorigenesis
Spring, of even-numbered years. 2(2-0)
P: BCH 462, PSL 452, PSL 460. R: Approval of department.
Examination and discussion of literature in tumorigenesis.
QA: PSL 433, BCH 453 QQA: PHM 815

819. Principle of Drug-Tissue Interaction
Summer, 6(6-0)
R: Open only to graduate students. Approval of department.
General principles relevant to the interaction of chemicals with biological systems.
QA: PHM 819

820. Drug Actions, Effects and Uses
Fall, 5(5-0)
P: PHM 819. R: Open only to graduate students. Approval of department.
Major principles of physiological and biochemical actions of major drugs.
QA: PHM 820, PHM 821

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.
QA: PHM 870

889. 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. Approval of department.
Discussion of recent topics in pharmacology and toxicology by faculty or invited outside speakers. Student research reports.
QA: PHM 889

910. Seminar
Fall, Spring, 3(3-0) 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. Student research reports.
QA: PHM 910

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.
QA: PHM 999

PHILOSOPHY

PHL

Department of Philosophy
College of Arts and Letters

130. Logic and Reasoning
Fall, Spring. 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 163

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, aesthetics, the self, existence of God, free will, minds and machines.
QA: PHL 101, PHL 102, PHL 330

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