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 and Molecular Biology. R: Graduate-professional students in colleges of Human and Osteopathic Medicine. SA: BCH 523
Basic principles of genetics for medical students.

526 Molecular Biology and Medical Genetics
Fall. 2 credits. Interdepartmental with Biochemistry and Molecular Biology. Administered by Department of Biochemistry and Molecular Biology. R: Restricted to students enrolled in the M.D. (CHM) or D.O. (COM) programs. SA: BCH 526 Not open to students with credit in PHD 523.
Basic principles of human medical genetics; storage and expression of genetic information; transmission of genetic information to progeny.

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 colleges 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. 6 to 24 credits. A student may earn a maximum of 24 credits in all enrollments for this course. R: Open only to graduate-professional students in College of Human Medicine. Completion of preclinical CHM curriculum.
Multidisciplinary approach to children and their families in a health care setting. Integrated biological, behavioral, and clinical sciences in assessing and planning children's health care needs.

601 Human Development and Pediatric Subspecialties
Fall, Spring, Summer. 6 to 24 credits. A student may earn a maximum of 24 credits in all enrollments for this course. RB: (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. RB: (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. RB: (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. RB: (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. RB: (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. RB: (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. Fall: Kazoo, Flint, GR, Saginaw, UP, Lansing. Spring: Same as above. Summer: Same as above. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (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. RB: (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) Fall: All six(6) campuses. Spring: All six(6) campuses. Summer: All six(6) campuses. P:M: (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, Spring, Summer. 2(2-0) Fall: Flint-GR-Saginaw-Lansing-Kalamazoo-UP. Spring: same as above. Summer: save as above. A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Human Medicine; Family Practice; Medicine. Administered by College of Human Medicine. R: Open only to graduate-professional students in College of Human Medicine.
Core knowledge and skills from an interdisciplinary perspective.

637 Core Competencies III
Fall, Spring, Summer. 2(2-0) Fall: same as below. Spring: Flint-Saginaw-GR-Lansing-Kalamazoo-UP. Summer: Flint-Saginaw-GR-Lansing-Kalamazoo-UP. 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; Surgery. Administered by College of Human Medicine. R: Open only to graduate-professional students in College of Human Medicine.
Core knowledge and skills from an interdisciplinary perspective.

PHARMACOLOGY AND TOXICOLOGY PHM

Department of Pharmacology and Toxicology
College of Veterinary Medicine

350 Introductory Human Pharmacology
Spring. 3(3-0) P: (PSL 250) or (PSL 431 and PSL 432) 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.

450 Introduction to Chemical Toxicology
Spring. 3(3-0) P: (BS 110 or LBS 144) and (BS 111 or LBS 145) and (CEM 251) R: Not open to freshmen or 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.
Individual work on selected research problems.

556 Veterinary Pharmacology
Fall. 5(5-0) R: Completion of semester 2 of the graduate professional program in the College of Veterinary Medicine.
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 semester 3 of the graduate professional program in the College of Veterinary Medicine.
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 Semester 4 of the graduate-professional program in the College of Veterinary Medicine. Approval of department.
Selected research problems in pharmacology or toxicology.

804 Molecular and Developmental Neurobiology
Fall. 3(3-0) Interdepartmental with Neuroscience; Psychology; Pathology; Zoology. Administered by Program in Neuroscience. RB: Bachelor's degree in a Biological Science or Psychology. R: Open only to graduate students in the Neuroscience major.
Nervous system specific gene transcription and translation. Maturation, degeneration, plasticity and repair in the nervous system.

806 Advanced Neuroscience Techniques Laboratory
Spring. 3(0-9) Interdepartmental with Neuroscience; Psychology; Radiology; Physical Medicine and Rehabilitation. Administered by Program in Neuroscience. RB: (PHM 827) R: Open only to doctoral students in the Neuroscience major.
Methods and underlying principles of neuroscience research.

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) RB: (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) RB: (BMB 462 and PSL 432 and PSL 460) R: Approval of department.
Examination and discussion of literature in tumorigenesis.

819 Principles of Drug-Tissue Interactions
Summer. 1 to 2 credits. R: Approval of department.
General principles relevant to the interaction of chemicals with biological systems. Topics include pharmacokinetics and/or pharmacodynamics.

820 Cellular and Molecular Mechanisms in Pharmacology and Toxicology
Fall. 1 to 3 credits. P:M: (BMB 801 and BMB 802) 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
Spring. 2(2-0) RB: (PSL 828) or equivalent background in physiology R: Approval of department.
Comprehensive overview of drug and chemical actions on the major organ systems of humans and other mammals.

827 Physiology and Pharmacology of Excitable Cells
Fall. 4(4-0) Interdepartmental with Physiology; Zoology; Neuroscience. RB: (PSL 431 or PSL 432 or BMB 401 or BMB 461 or ZOL 402)
Function of neurons and muscle at the cellular level: membrane biophysics and potentials, synaptic transmission, sensory nervous system function.

839 Systems Neuroscience
Spring. 4(4-0) Interdepartmental with Neuroscience; Human Anatomy; Physiology; Psychology; Zoology. Administered by Program in Neuroscience. R: Open only to graduate students in the Colleges of Human Medicine, Osteopathic Medicine, Agriculture and Natural Resources, Natural Science, Social Science, and Veterinary Medicine. SA: ANT 839
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; Psychology. Administered by Department of Physiology. RB: (BMB 461 and 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.
Master's thesis research.

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 50 credits in all enrollments for this course. R: Open only to graduate students in the Department of Pharmacology and Toxicology. Approval of department.
Doctoral dissertation research.

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 Ancient Greek Philosophy
Fall. 3(3-0)
Philosophical problems of existence, knowledge, and action as addressed in selected readings from the Presocratics, Plato, Aristotle, and Hellenistic philosophers.

211 Modern Philosophy
Spring. 3(3-0) RB: (PHL 210)
Philosophy from the Renaissance through the nineteenth century, including Descartes, Spinoza, Locke, Hume, Kant, Hegel, Kierkegaard and Nietzsche.

320 Existentialism
Fall. 3(3-0) RB: 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
Fall, Spring. 4(4-0)
Formal methods in deductive reasoning. Logic of connectives and quantifiers including identity, functions, and descriptions.

340 Ethics
Fall, Spring. 3(3-0) RB: One PHL course.
Inquiry through the writings of some important theorists, their critics and their contemporary followers. Aristotle, Hume, Kant, Mill, Sidgwick.