PHR 614. Drug Discovery and Development. 3 Hours.
The course will provide an overview of the drug discovery and development process. Topics will include (among others): Target identification and validation, High-Throughput Screening, Hit discovery, Lead optimization, Preclinical testing, Safety requirements, Clinical trials, IND, NDA, Patents, and Federal regulations. The course will highlight multidisciplinary nature of drug discovery and the roles of biologists, medicinal chemists, pharmacologists, regulatory agencies, and investors in the process. Real-life case studies highlighting successful and unsuccessful drug development examples will be introduced for discussions, as well as some current examples of early stage biotech startups.

PHR 615. Pharmacokinetics and Biopharmaceutics. 3 Hours.
Pharmacokinetics is the study of the time-course of drugs in physiological systems. This includes the fate of administered drugs in relation to time starting with absorption, through distribution, and elimination. Pharmacokinetics is fundamental to the understanding of observed drug effects and responses. This course is divided into three sections that are assessed independently. The first section explores the mathematical principles of pharmacokinetics using the compartmental and noncompartmental models of analysis. The second section evaluates the roles of biopharmaceutical factors in the pharmacokinetics of drugs. The last section introduces the students to hands-on pharmacokinetics analysis and modeling using an industry-standard software package.

PHR 616. Cancer Physiology and Pharmacology. 3 Hours.
This course will introduce different types or classes of chemotherapeutic agents currently used in the clinic for the treatment of cancer. These include classic chemotherapeutic agents and newer targeted agents. Students will learn the latest cancer chemotherapy and treatment strategy. Students will also learn historical aspects of cancer treatment and of drug development for this disease. Team projects will prepare students to participate in literature reviews, presentation preparation and skills, and approaches to preparing for scientific discussions and Q&A sessions.

PHR 696. Special Topics. 1-3 Hour.
Special Topics in Pharmacology.

PHR 701. Adv Prin Pharm-Sys&Pharmacok 1. 3 Hours.

PHR 702. Adv Prin Pharm-Sys&Pharmacok 2. 3 Hours.

PHR 706. Special Topics in Pharmacology. 3 Hours.

PHR 715. Pharmacokinetics and Biopharmaceutics. 3 Hours.
Pharmacokinetics is the study of the time-course of drugs in physiological systems. This includes the fate of administered drugs in relation to time starting with absorption, through distribution, and elimination. Pharmacokinetics is fundamental to the understanding of observed drug effects and responses. This course is divided into three sections that are assessed independently. The first section explores the principles of pharmacokinetics using the compartmental and noncompartmental models of analysis. The second section evaluates the roles of biopharmaceutical factors in the pharmacokinetics of drugs. The last section introduces the students to hands-on pharmacokinetics analysis and modeling using an industry-standard software package.

PHR 720. Laboratory Rotation in Pharmacology. 1-12 Hour.

PHR 735. Nucleotide Metabolism and Chemotherapy. 3 Hours.
Principles, characteristics and therapeutics of nucleotide metabolism. This course is designed for second year and above graduate students.

PHR 744. Protein Mass Spectrometry. 3 Hours.

PHR 752. Pharmacokinetic Analysis. 1 Hour.
The course will provide a detailed introduction to the analysis of pharmacokinetic data preferably generated as part of the student’s research. Descriptions of the use of appropriate analytical programs and the interpretation of pharmacokinetic data will be the major focus of this course.

PHR 754. Model Sys for Drug Discovery. 2 Hours.
This course will focus on the use of different genetically tractable model systems and their roles in drug discovery and drug development. The course will discuss the properties, benefits and deficiencies of major model systems used in drug discovery including yeast, zebrafish, xenographs, and genetically modified mouse strains.
PHR 755. Translational Pharmacology and Drug Development. 2 Hours.
Translational pharmacology covers the principles and practice of drug development from the laboratory (bench) to the patient (bedside). This course provides an overview of the processes involved in drug development. It familiarizes the student with the drug discovery and development process including types of clinical trials, regulatory requirements and results interpretations.

PHR 790. Pharmacology Journal Club. 1 Hour.
Pharmacology Journal Club.

PHR 798. Doctoral Level Non-Dissertation Research. 1-12 Hour.

PHR 799. Doctoral Level Dissertation Research. 1-12 Hour.
Prerequisites: GAC Z