PHARMACY AND NUTRITION GRADUATE COURSES OFFERED IN 2022-23

Term 1:

PHAR 871.3: Molecular Pharmacology – Course Coordinator: Dr. Robert Laprairie

Students will learn to identify, evaluate, and analyze molecular pharmacology data in order to gain insight into drug mechanism(s) of action, pharmacodynamics, pharmacokinetics, and drug-drug interactions. Learning will utilize real-world data and primary literature to help students learn drug mechanism(s) of action in conjunction with pathophysiological processes of the major body systems. Using knowledge from previous foundational sciences courses, students will learn to integrate knowledge to assess and critique data, information, and pharmacological principles.

PHAR 854.3: Metabolic Transformations of Xenobiotics – Course Coordinator: Dr. Ed Krol

An advanced study of the basic principles of the metabolic transformation of foreign compounds in mammals, metabolism studies and factors influencing xenobiotic metabolism. The xenobiotics covered will include drugs, food additives, agricultural chemicals and industrial chemicals. The detoxification and toxicological implications of metabolism are emphasized.

Term 2:

PHAR 848.3: Advanced Pharmacokinetics and Pharmacodynamics – Course Coordinator: Dr. Jane Alcorn

Qualitative and quantitative aspects of drug absorption, disposition, metabolism and excretion, and drug pharmacodynamics. The course emphasizes the use of pharmacokinetic/pharmacodynamic equations and the analysis of the data.

PHAR 833.3: Synchrotron Techniques in Nanomedicine – Course Coordinator: Dr. Ildiko Badea

The course is designed to offer instructor-directed readings and discussion. The students will gain fundamental knowledge of various applications of nanoparticles. Novel drug delivery development and strategies to improve drug safety and efficacy will be explored. Synchrotron techniques will be discussed in depth.

PHAR 870.3: Research Methods in Pharmacy Practice (course only open for pharmacy Graduate students with instructor permission) – Course Coordinator: Dr. David Blackburn

Research methods and outcomes in pharmacy practice settings will be studied. The principles of qualitative and quantitative research are discussed in the context of patient education, adherence, disease state management and quality of life. Issues relating to primary data collection in health care settings and administrative databases will be considered.

PHAR 865.3: Analytical Mass Spectrometry – Course Coordinator: Dr. Anas El-Aneed

This course will cover modern state-of-the-art mass spectrometry techniques and their usefulness in research and discovery. Instrumentation-related topics will be discussed, namely ionization sources, mass analyzers and hybrid tandem mass spectrometers. The advantages of each technique will be highlighted and discussed. A second portion of the course will focus on mass spectra interpretation and the various applications of applied mass spectrometry for small molecule analysis, namely structural elucidation, quantification, analytical method validation, metabolomics and related biomedical and environmental applications. The course will also include lab demonstration of the use of tandem mass spectrometry.

PHAR 832.3: Drug Design – Course Coordinator: Dr. Meena Sakharkar

Consideration is given to the way in which new drugs are developed and the importance of drug latentiation is stressed. Some of the chemical, physicochemical and biochemical parameters affecting bioactivity are outlined.

PHAR 898: Advanced Pharmaceutics – Course Coordinator: Dr. Azita Haddadi

TBD