Pharmacy (PHAR)

pharmacy.uconn.edu

5215. Pharmaceutical Biotechnology

Three credits. Prerequisite: Instructor consent.

A survey of medicinal chemistry and pharmaceutics of pharmaceutical products derived from modern methods of molecular biology. Considers products in use or in clinical trials to emphasize the conceptual basis, design, and synthesis of biotech products in the context of current practical applications.

5216. Dosage Forms I

Three credits.

Introduces the student to the principles of thermodynamics, ionic equilibrium, chemical kinetics and diffusion. Application of these principles to formulation, stability and dissolution of a drug product, and release from the dosage form for optimum therapeutic outcome. Required of entering graduate students in Pharmaceutics who do not have a PharSmacy background as well as those who do not pass the qualifying examination within the first year of the program.

5217. Dosage Forms II

Three credits.

Covers the basic principles of the surface and colloid chemistry and rheology, as these relate to the performance of dispersed system dosage forms including colloids, suspensions, emulsions, suppositories, aerosols, ointments, and transdermals. Required of entering graduate students in Pharmaceutics who do not have a Pharmacy background, and those who do not pass the qualifying examination within the first year of the program.

5219. Biopharmaceutics and Pharmacokinetics

Three credits.

Basic principles of biopharmaceutics, bioavailability, and pharmacokinetics, including their application to the rational design of both dosage forms and maximally effective dosing regimens. Intended for graduate students who may not have sufficient previous exposure to biopharmaceutics and pharmacokinetics.

5239. Current Literature in Pharmaceutics

One credit. May be repeated for a total of three credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Designed to familiarize students with current pharmaceutics literature and to educate students in critical peer review in the pharmaceutics literature.

5240. Drug Discovery and Development

Two credits. Prerequisite: Instructor consent.

The processes of new drug development; target identification, drug discovery process, drug candidate evaluation, preclinical toxicity assessment, drug formulation and delivery, clinical trials for safety and efficacy, and FDA regulation on new drug application.

5293. Seminar in Pharmaceutics

One credit. May be repeated for a total of two credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Reports and discussions.

5295. Special Problems in Pharmaceutics

Variable (1-4) credits. Prerequisite: Instructor consent.

Individualized for students desiring research experience in any of the areas of pharmacy other than the area chosen by the student for thesis research.

5297. Special Topics in Pharmaceutics

Variable (1-6) credits. Prerequisite: Instructor consent. May be repeated for credit.

Includes topics not presently covered in courses which are pertinent to current departmental research and areas of recent development in the literature.

5301. Macromolecules in Drug Design

Two credits. Prerequisite: Instructor consent.

A cooperative presentation of the fundamentals of medicinal chemistry.

5302. Chemical Biology and Drug Design

Two credits.

Introduction to the emerging field of chemical biology with a particular focus on the role it plays in understanding cellular signaling, drug design, and drug development.

5303. Small Molecule Structure and Function

Two credits.

Small organic molecules continue to be the preeminent form of therapeutic agents. The small molecules that constitute clinically used agents are developed through a highly interdisciplinary process involving chemists, biologists and healthcare workers in a process commonly referred to as drug discovery. The purpose of this course is to provide the student with a broad view of drug properties, drug function and the drug discovery process.

5308. Structure and Function of Biological Membranes

Three credits.

Overview of cell membrane structure and function based on a foundation of physical and biochemistry principles. Topics include lipid bilayers, vesicles and liposomes, cholesterol, membrane protein structure and function, transport, membrane fusion, receptors, drug/membrane interactions and membranes in cell regulation.

5393. Seminar in Medicinal Chemistry

One credit. May be repeated for a total of 10 credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Reports and discussions.

5395. Special Problems in Medicinal Chemistry

Variable (1-4) credits. Prerequisite: Instructor consent. May be repeated for a total of 12 credits.

Individualized course for students desiring research experience in any of the areas of medicinal chemistry other than the area chosen by the student for thesis research.

5397. Special Topics in Medicinal Chemistry

Variable (1-6) credits. Prerequisite: Instructor consent. May be repeated for a total of 12 credits.

Current developments in Medicinal Chemistry. For students who need exposure to topics not covered in other department offerings.

5403. Current Literature in Pharmaceutical Sciences

One credit. May be repeated for a total of two credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Designed to familiarize students with current pharmaceutical sciences literature and to educate students in critical peer review of this literature.

5454. Principles of Safety Evaluation

One credit.

Introduction to toxicologic risk assessment. Fundamentals of dose-response relationships and risk characterization, and their application in the establishment of permissible exposure limits for drugs and other chemicals in the environment or workplace.

5471. Advanced Pharmacology I: Basic Principles

Three credits. Prerequisite: Instructor consent.

Molecular mechanisms of drug action including occupation and rate theories. Characterization of receptors in-situ and in-vitro.

5472. Advanced Pharmacology II: Drug Disposition

Two credits.

Drug absorption, distribution, excretion, metabolism, interaction, allergy, resistance, tolerance, idiosyncrasy and toxicity.

5475. Toxicology Scholars Colloquium

One credit. May be repeated for a total of five credits.

Reviews, discussions and seminars focused on the research of scientists who have made significant contributions to the science of toxicology.

5493. Seminar in Pharmacology and Toxicology

One credit. May be repeated for a total of two credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Reports and discussions on journal and review articles and presentation of personal research results.

5494. Seminar in Immunology

One credit. May be repeated for a total of two credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Reports and discussions.

5495. Special Problems in Pharmacology I

Variable (1-4) credits. Prerequisite: Instructor consent. May be repeated for a total of six credits.

Individualized for students desiring research experience in any of the areas of pharmacology.

5496. Special Problems in Toxicology

Variable (1-4) credits. Prerequisite: Instructor consent. May be repeated for a total of six credits.

Individualized course for students desiring research experience in any of the areas of toxicology.

5497. Special Topics in Pharmacology

Variable (1-6) credits. Prerequisite: Instructor consent. May be repeated for credit.

Includes topics not presently covered in courses, which are pertinent to current departmental research and areas of recent development in the literature.

5498. Special Topics in Toxicology

Variable (1-6) credits. Prerequisite: Instructor consent. Instructor consent required. May be repeated for credit.

Basic principles of toxicology as emphasized by recent developments in the biochemical toxicology literature.

5746. Introduction to Managed Care Pharmacy

Three credits. Prerequisite: Instructor consent.

A study of managed care pharmacy within the United States health care system, with emphasis on managed care organization and control, pharmacy benefits design and management, outcomes measurement, pharmacoeconomics, health care provider and client education, benefits plan financing and marketing, and legal issues of managed care pharmacy.

5764. Advanced Pharmacy Administration

Three credits. Prerequisite: Instructor consent.

A study of modern management techniques applicable in terminal drug distribution. Special emphasis is placed upon quantitative methods and the utilization of electronic data processing.

5797. Special Topics in Pharmacy Administration

Variable (1-6) credits. Prerequisite: Instructor consent.

Current developments in Pharmacy Administration. A course for students needing exposure to topics not covered in other Department of Pharmacy Practice offerings.

6234. Advanced Biopharmaceutics

Three credits.

Overview of physico-chemical, biopharmaceutic, and physiologic factors controlling the delivery of drug and their sites of action.

6241. Advanced Kinetics and Mechanisms of Drug Degradation

Two credits. Prerequisite: PHAR 6288; instructor consent required.

An advanced treatment of the physical organic chemistry critical to the characterization and understanding of stability in pharmaceutical products.

6242. Freeze Drying of Pharmaceuticals

Two credits. Prerequisite: Instructor consent.

The science and technology of freeze drying, including fundamentals of heat and mass transfer gas systems, process design considerations, and formulation strategies with emphasis on stabilization of therapeutic proteins.

6285. Complex Equilibria

Three credits.

A study of the physico-chemical and mathematical treatment in pharmaceutical systems. Topics center on thermodynamics, activity coefficients, acids and bases, solubility, complexation solubilization and protein binding.

6286. Transport Processes

Three credits. Prerequisite: Instructor consent.

Emphasis is on the application of the laws of diffusion to dissolution, membrane transport and release of drugs from dosage forms.

6288. Kinetics and Mechanisms of Drug Degradation and Stability

Three credits. Prerequisite: Instructor consent.

A study of the kinetics and mechanisms of drug degradation in the solid and liquid states and drug stabilization.

6289. Pharmacokinetics

Three credits. Prerequisite: Instructor consent.

A discussion of absorption, distribution, and clearance mechanisms, and their impact on concentration-time profiles and drug response.

6290. Colloid Chemistry and Interfacial Phenomena

Three credits. Prerequisite: Instructor consent.

Interfacial phenomena, colloid chemistry.

6452. Toxicology of the Respiratory System

Two credits. Prerequisite: PHAR 6455; instructor consent required.

Anatomic and functional aspects of toxic injury to the respiratory tract with an emphasis on biochemical and physiologic mechanisms of toxic pulmonary injury. Lectures and student presentations.

6455. Advanced Toxicology

Four credits.

A study of the harmful effects of toxic chemicals on biological systems. Emphasis is on mechanisms of toxicant action and on practical applications of modern techniques to assess toxicity and hazard.

6459. Immunotoxicology

Two credits. Prerequisite: Instructor consent.

Demonstrates the detrimental effects on the immune system and/or inflammatory response, by a variety of physical and chemical xenobiotics. Emphasis is placed on the mechanisms of chemical and drug-induced immunosuppression, autoimmune response, and allergic response.

6475. Mechanistic Toxicology I

Two credits. Prerequisite: Departmental consent.

Mechanistic toxicology describes the processes of how chemicals exert their toxic effects in biological systems. Therefore, understanding of the underlying mechanisms of toxicity, together with exposure estimates, provides key information that links the toxic hazard of a chemical with the actual human health risk. This first course explores some fundamental cellular and molecular mechanisms of toxicity and integrates them into a larger picture; reactive intermediates, oxidative and nitrative stress, and mitochondria-mediated toxicity will be covered. The basic concepts will be illustrated with specific examples (drugs and environmental chemicals).

6484. Cutaneous Differentiation: Molecular Mechanisms and Cellular Processes

Two credits. Prerequisite: Instructor consent.

Examines mammalian skin structure, keratinocyte, immune and pigment cells, mechanisms of mesenchymal-epithelial induction, replication- and cytoskeletal-based diseases, stem cell identification and plasticity, and transcriptional regulation of differentiation-dependent gene expression.