

Pharmaceutical Sciences (PSCI)

PSCI 367. Pharmaceutical Calculations. 1 Credit.

Qualitative and quantitative principles encompassing calculations performed by pharmacists in traditional and specialized practice settings. Scope includes computations related to prescriptions and medication orders. Restricted to students in the professional Pharmacy program.

PSCI 368. Pharmaceutics I. 3 Credits.

Quantitative and theoretical principles of science applied to the design, preparation, evaluation, use, and therapeutic limitations of various pharmaceutical dosage forms. Biological and physiochemical principles that govern the absorption, distribution, metabolism, and excretion of drug dosage forms in humans. Prereq: Admission to professional program.

PSCI 369. Pharmaceutics II. 2 Credits.

Quantitative and theoretical principles of science applied to the design, preparation, evaluation, use, and therapeutic limitations of various pharmaceutical dosage forms. Biological and physiochemical principles that govern the absorption of drug dosage forms. Prereq: Admission to professional program.

PSCI 400. Vaccinology Research Experience. 1 Credit.

Research-based course covering the principles and techniques involved in development, production and evaluation of vaccines. 1 three-hour laboratory. Prereq: MICR 471.

PSCI 410. Pharmaceutical Biotechnology. 2 Credits.

Current and future biotechnologies in drug discovery, design, and production. Diagnostic technologies for individualized patient therapies. Prereq: admission to PharmD program. {Also offered for graduate credit - see PSCI 610.}.

PSCI 411. Principles of Pharmacokinetics and Pharmacodynamics. 3 Credits.

Basic chemical, biochemical and pharmacological principles applied to the study of therapeutic agents; pharmacologic properties of drugs that affect their ADME and therapeutic effects. Prereq: BIOC 460, BIOC 461, CHEM 341, CHEM 342. {Also offered for graduate credit - see PSCI 611.}.

PSCI 412. Chemotherapeutic/Infectious Disease Pharmacodynamics. 3 Credits.

Pharmacologic and therapeutic properties of chemotherapeutic agents and anti-infective drugs. Prereq: PSCI 411. {Also offered for graduate credit - see PSCI 612.}.

PSCI 413. Endocrine/Respiratory/GI Pharmacodynamics. 3 Credits.

The pharmacological properties and therapeutic uses of therapeutic agents for the treatment of disorders of the endocrine and GI systems, autonomic nervous system, and anti-inflammation agents, will be covered in this course. Prereq: PHRM 340, PHRM 341, PSCI 411 all with a grade of C or higher. {Also offered for graduate credit - see PSCI 613.}.

PSCI 414. Cardiovascular Pharmacodynamics. 3 Credits.

Pharmacologic properties of drugs used in the treatment of cardiovascular disorders. Prereq: PHRM 340 and PSCI 411 both with a grade of C or higher. {Also offered for graduate credit - see PSCI 614.}.

PSCI 415. Neuropsychiatry Pharmacodynamics. 3 Credits.

Pharmacological properties of therapeutic agents used in the treatment of central nervous system disorders. Prereq: PHRM 341 and PSCI 411 both with a grade of C or higher. {Also offered for graduate credit - see PSCI 615.}.

PSCI 417. Pharmacogenomics. 2 Credits.

This course provides students with a broad perspective on the emergence of pharmacogenomics as a new field and the potential role of pharmacogenomics in future clinical therapeutics and drug design. Prereq: Admission to PharmD/graduate PSCI program. {Also offered for graduate credit - see PSCI 617.}.

PSCI 443. Toxicology. 2 Credits.

Poisons, their mode of action, detoxification, and treatment. Prereq: PSCI 412.

PSCI 470. Pharmacokinetics. 3 Credits.

Concepts and mathematical techniques for describing the time course of drugs in biological systems. Prereq: PSCI 411 with a grade of C or higher. {Also offered for graduate credit - see PSCI 670.}.

PSCI 545. Clinical Toxicology. 2 Credits.

Toxic potential of various poisonous substances including mechanism of toxicity, toxic doses, clinical presentation, clinical and laboratory monitoring and their specific treatment. Prereq: PSCI 411.

PSCI 610. Pharmaceutical Biotechnology. 2 Credits.

Current and future biotechnologies in drug discovery, design, and production. Diagnostic technologies for individualized patient therapies. Prereq: admission to PharmD program. {Also offered for undergraduate credit - see PSCI 410.}.

PSCI 611. Principles of Pharmacokinetics and Pharmacodynamics. 3 Credits.

Basic chemical, biochemical and pharmacological principles applied to the study of therapeutic agents; pharmacologic properties of drugs that affect their ADME and therapeutic effects. {Also offered for undergraduate credit - see PSCI 411.}.

PSCI 612. Chemotherapeutic/Infectious Disease Pharmacodynamics. 3 Credits.

Pharmacologic and therapeutic properties of chemotherapeutic agents and anti-infective drugs. {Also offered for undergraduate credit - see PSCI 412.}.

PSCI 613. Endocrine/Respiratory/GI Pharmacodynamics. 3 Credits.

The pharmacological properties and therapeutic uses of therapeutic agents for the treatment of disorders of the endocrine and GI systems, autonomic nervous system, and anti-inflammation agents, will be covered in this course. {Also offered for undergraduate credit - see PSCI 413.}.

PSCI 614. Cardiovascular Pharmacodynamics. 3 Credits.

Pharmacologic properties of drugs used in the treatment of cardiovascular disorders. {Also offered for undergraduate credit - see PSCI 414.}.

PSCI 615. Neuropsychiatry Pharmacodynamics. 3 Credits.

Pharmacological properties of therapeutic agents used in the treatment of central nervous system disorders. {Also offered for undergraduate credit - see PSCI 415.}.

PSCI 617. Pharmacogenomics. 2 Credits.

This course provides students with a broad perspective on the emergence of pharmacogenomics as a new field and the potential role of pharmacogenomics in future clinical therapeutics and drug design. Prereq: Admission to PharmD/graduate PSCI program. {Also offered for undergraduate credit - see PSCI 417.}.

PSCI 670. Pharmacokinetics. 3 Credits.

Concepts and mathematical techniques for describing the time course of drugs in biological systems. Prereq: PSCI 411 with a grade of C or higher. {Also offered for undergraduate credit - see PSCI 470.}.

PSCI 701. Quantative Drug Design. 2 Credits.

Modeling of drug disposition and receptor binding with focus on rational development of new drugs and elucidation of action mechanisms.

PSCI 703. Drug Metabolism. 2 Credits.

Drug biotransformations and their effects on drug properties such as duration of action, potency, toxicity, and specificity. Prereq: BIOC 702.

PSCI 718. Techiques in Pharmaceutical Research. 3 Credits.

Application of modern instrumental techniques in the pharmaceutical sciences; qualitative and quantitative determination of physiologically and pharmacologically important substance.

PSCI 746. Neuropharmacology. 3 Credits.

Study of action mechanisms of drugs affecting the central and peripheral nervous systems.

PSCI 747. Cardiovascular Pharmacology. 3 Credits.

Study of action mechanisms of drugs affecting the circulatory systems, including their pathology.

PSCI 762. Advanced Biopharmaceutics. 2 Credits.

Stability and kinetic factors involved in absorption, distribution, metabolism, and excretion of drug products.

PSCI 765. Cancer Cell Biology. 2 Credits.

This course covers the principles of modern cancer cell biology, including topics on oncogenes, tumor suppressor genes, growth factors, signal transduction, cell cycle, apoptosis, angiogenesis, and mechanism of tumor metastasis.