

# Biomedical and Pharmaceutical Sciences (PSCI)

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## Courses

### ***PSCI 2205 Drugs in Society: 2 semester hours.***

Survey of the response of people to drugs and chemicals. This course is for non-pharmacy majors. F, S

### ***PSCI 3301 Introduction to Pharmacology: 3 semester hours.***

Overview of basic pharmacological principles and drug classes emphasizing organ systems and mechanisms of action. PREREQ: BIOL 1102, CHEM 1112, and CHEM 1112L. F

### ***PSCI 3308 Drug Discovery: 2 semester hours.***

Overview of the new drug discovery process including drug screening and the development of targeted therapies. PREREQ: PSCI 3301 or permission of instructor. S

### ***PSCI 3318 Basic and Applied Pharmacology for Physical Therapists: 2 semester hours.***

Introduction to the basic concepts of pharmacology. Discussion of pharmacologic therapy of problems affecting the musculoskeletal and connective tissues, including pain management. PREREQ: Admitted to Physical Therapy program. S

### ***PSCI 3353 Introduction to Methods in Pharmaceutical Sciences: 2 semester hours.***

Review of in vitro and in vivo methodology for the study of various aspects of pharmaceutical sciences. PREREQ: BIOL 1102, CHEM 1112, and CHEM 1112L. S

### ***PSCI 3368 Introduction to Toxicology: 3 semester hours.***

Review of environmental and clinical poisons with emphasis on mechanisms of toxicity, causes, detection and treatment. PREREQ: PSCI 3301 or permission of instructor. F

### ***PSCI 4401 Drug Abuse: 2 semester hours.***

A discussion of pharmacological and societal aspects of drugs of abuse. PREREQ: PSCI 3301 or permission of instructor. S

### ***PSCI 4402 Immunopharmacology: 2 semester hours.***

Examination of drugs affecting the immune system. PREREQ: PSCI 3301 or permission of instructor. S

### ***PSCI 4403 Infectious Diseases and Natural Products: 3 semester hours.***

Review of antimicrobial drugs including antibiotics, antifungal and antiviral drugs. Review of pharmacology and medicinal chemistry of drugs derived from environmental sources. PREREQ: PSCI 3301 or permission of instructor. S

### ***PSCI 4404 Pulmonary and Cardiac Pharmacology: 3 semester hours.***

Review of the pulmonary and cardiovascular systems including major drug classes affecting these systems. PREREQ: PSCI 3301. F

### ***PSCI 4405 Behavioral Pharmacology: 2 semester hours.***

Review of drugs effecting behavioral processes including emotion, learning, memory, and cognition. PREREQ: PSCI 3301. Permission of instructor. S

### ***PSCI 4406 Introduction to Endocrinology: 2 semester hours.***

Review of the endocrine systems and drugs used for endocrine based disorders. PREREQ: PSCI 3301 or permission of instructor. S

### ***PSCI 4407 Pharmacogenomics: 2 semester hours.***

Review of contemporary genetic approaches in the understanding of disease and the development of pharmacological agents to treat disease. PREREQ: PSCI 3301 or permission of instructor. S

### ***PSCI 4408 Medicinal Chemistry: 3 semester hours.***

A study of the general chemistry, chemical properties and relationships between chemical structures and pharmacological activities of organic and inorganic medicinal agents PREREQ: PSCI 3301 or permission of instructor. F

### ***PSCI 4430 Psychopharmacology: 3 semester hours.***

This course will cover the mechanisms of action of psychoactive drugs, including drugs used in the treatment of psychopathological disorders and drugs of abuse. PREREQ: Permission of instructor. F

### ***PSCI 4431 Cancer Biology: 3 semester hours.***

Study of growth control, carcinogenesis, receptors, oncogenes, signal transduction pathways in cancer, metastasis, angiogenesis, invasion and tumor markers. PREREQ: Permission of instructor. F

### ***PSCI 4432 Anti-cancer Drugs: 3 semester hours.***

Introduction to conventional chemotherapeutic drugs, novel chemotherapeutic drugs in clinical trials and cancer drug discovery. PREREQ: Permission of instructor. F

### ***PSCI 4433 Physical Pharmaceutics: 3 semester hours.***

Illustrates the basic concepts of physical pharmaceutics, including physicochemical and biopharmaceutical principles applicable to formulation design, drug disposition and calculations. PREREQ: Permission of instructor. S

### ***PSCI 4434 Pharmacokinetics: 3 semester hours.***

Illustrates the principles of pharmacokinetics and dosing regimen design. PREREQ: Permission of instructor. F

### ***PSCI 4435 Drug Delivery Systems: 3 semester hours.***

Illustrates principles, processes, and techniques applied to drug delivery systems, preparation, use and assessment of pharmaceutical dosage forms and emphasizes formulation design, dose regimens, and specific compounding techniques. PREREQ: Permission of instructor. S

### ***PSCI 4436 Special Topics in Oncology: 1 semester hour.***

Study of current topics in cancer research and novel approaches to understand and treat cancer. PREREQ: Permission of instructor. S

### ***PSCI 4437 Nuclear Pharmacy: 2 semester hours.***

Basic principles of radiation physics, preparation of radiopharmaceuticals, operator safety, quality control, laboratory design, radiation monitoring equipment, clinical aspects, therapeutic and diagnostic applications of radiopharmaceuticals and diagnostic agents in pharmacy practice. PREREQ: Permission of instructor. F

### ***PSCI 4438 Pharmaceutical Science Research: 2 semester hours.***

Hands on research experience under the direction of pharmaceutical science faculty including the completion of experiments and analyses of data. May be repeated up to 4 times. PREREQ: Permission of instructor. F, S

### ***PSCI 4439 Drug Delivery in the 21st Century: 2 semester hours.***

State-of-the-art information on the science and technology of novel drug delivery systems, controlled release formulations and pharmaceutical proteins, vaccines and anti-sense drugs. PREREQ: Permission of instructor. F

### ***PSCI 4440 Fundamentals of Nanoscience: 3 semester hours.***

Introduction to the fundamental properties of nanomaterials. Emphasis on the application of nanomaterials in biological systems and their impact on society, and understanding nanomaterials for their future in medicine. PREREQ: Permission of instructor. F

***PSCI 4441 Diabetes for Health Sciences: 2 semester hours.***

Discussion of diabetes: types, development, monitoring and patient related issues. Topics include basic science and patient applications. Discussions based on student interest and background. PREREQ: Permission of instructor. S

***PSCI 4455 Medicinal Chemistry: 3 semester hours.***

A study of the general chemistry, chemical properties and relationships between chemical structures and pharmacological activities of organic and inorganic medicinal agents. PREREQ: Permission of instructor. F

***PSCI 4457 Clinical Chemistry: 2 semester hours.***

The influence of disease states on the results of laboratory diagnostic procedures; the effects of drug therapy on diagnostic tests. PREREQ: Second year professional status in Pharm. D. program. F

***PSCI 4462 Neuropharmacology: 3 semester hours.***

The molecular basis of drug action in the central nervous system including nerve excitation, molecular properties of ion channels, neuropharmacological methods, pharmacology of ethanol and the mechanisms in tolerance and physical dependence. PREREQ: PSCI 3301 or permission of instructor. S

***PSCI 4480 Health Issues of Drug Abuse: 2 semester hours.***

In-depth discussion of pharmacological and societal aspects of drug abuse, including the risk for harm from both legal and illegal substances. Emphasis on treatment options. D.

***PSCI 4482 Special Topics in Pharmaceutical Sciences: 1-3 semester hours.***

An examination of selected topics in the pharmaceutical sciences. May be repeated up to 4 times. PREREQ: Permission of instructor. F, S

***PSCI 4499 Experimental Course: 1-6 semester hours.***

The content of this course is not described in the catalog. Title and number of credits are -announced in the Class Schedule. Experimental courses may be offered no more than three times with the same title and content. May be repeated.

***PSCI 9937 Professional Student Seminar in Pharmaceutical Sciences: 1 semester hour.***

Review of current research and literature in the fields of pharmacy. Oral and written reports are required. May be repeated. Restricted to Pharm.D. program. S

***PSCI 9938 Independent Problems in Pharmaceutical Sciences: 1-4 semester hours.***

Advanced students are assigned special laboratory studies on the basis of interest and previous preparation. May be repeated. Restricted to PHARM.D. program. F, S

***PSCI 9992 Topics in Pharmaceutical Sciences: 1-4 semester hours.***

An examination of selected topics in pharmaceutical sciences. Restricted to PHARM.D. program. D