



UCI Pharmaceutical Sciences Course Descriptions

The Department of Pharmaceutical Sciences offers undergraduate and graduate students unparalleled training for future careers in medicine, biomedical research and pharmacy. Our innovative, rigorous curriculum integrates concepts from biology, chemistry, chemical engineering, pharmacology and physiology. Alumni pursue exciting and meaningful professional opportunities that improve our society's health and well-being.

PHRMSCI 1:
New Student Seminar

Weekly meetings consisting of presentations by faculty, professional staff, and Peer Academic Advisors provide information about the Pharmaceutical Sciences major, campus resources, learning skills, and special programs and opportunities.

PHRMSCI 42:
Life 101

Covers the latest scientific work on the impact of nutrition, exercise, and lifestyle choices on mental and physical health. The course will motivate students to make positive changes by fostering personal growth. Course may be offered online.

PHRMSCI 76:
Ethics Conduct
of Research

Covers the ethical responsibilities of biomedical scientists. Topics include, as discussions and case studies, the high standards of science, the responsible conduct of research, animal experimentation, and clinical trials as they relate to pharmaceutical sciences.

PHRMSCI 90:
Speaking about Science

Students will learn to effectively prepare and present public speeches and slide presentations. Included are storytelling, informative, commemorative, and persuasive speeches, and scientific presentation. Evaluating speeches and strategies to reduce speaker apprehension will also be covered.

UCI Pharmaceutical Sciences

**PHRMSCI 120:**

Human Physiology

Course covers the function of the human body. All major organ systems are discussed. The class is designed to prepare students for any healthcare career, such as medicine, pharmacy, dentistry, etc., and for research careers which require basic knowledge of how the human body functions.

PHRMSCI 120L:

Human Physiology Lab

Course is designed to complement PHRMSCI 120. Computer based lab simulations will be used to study the function of the human body. Class will physically meet for review sessions and exams.

PHRMSCI 170A:

Molecular Pharmacology I

Molecular basis of drug-receptor action at the molecular and cellular levels. Structure-function of drug targets emphasizing enzymes, ion channels, and membrane transport proteins. Understanding how the drugs' mechanisms of action contribute to the development of more efficacious and safer drugs. Course may be offered online.

PHRMSCI 170B:

Molecular Pharmacology II

Introductory survey covering the molecular mechanisms of drugs that target the nervous system, such as anxiolytics, antidepressants, antipsychotics, hypnotics, muscle relaxants and recreational drugs, drugs related to the immune system, including antibiotics, antihistamines, and immunosuppressants, and drugs used to treat cancer.

PHRMSCI 171:

Physical Biochemistry

Thermodynamics and kinetic fundamentals as applied to problems relevant to pharmaceutical sciences such as receptor/enzyme-ligand interactions. Fundamentals of biophysical methods used in pharmaceutical sciences including structure determination and biomolecular spectroscopy.

PHRMSCI 172:

Topics in
Pharmaceutical Sciences

Presents information about various fields of research, study, careers, and graduate school opportunities in pharmaceutical sciences. Taught by guest lecturers from various disciplines including 199 research course faculty. Helps students select electives appropriate to their future goals.

PHRMSCI 173:

Pharmacotherapy

An exploration of the clinical application of medications to selected disease states. Focus is on an understanding of underlying principles of pharmacology and how this knowledge can be applied to treatment of diseases.

PHRMSCI 174:

Biopharmaceutics
& Nanomedicine

Introduces theories and tools of new drug formulations. Particularly new novel therapeutics based on biological materials, pathological characteristics utilized to achieve the maximum efficacy and specificity, and drug delivery systems based on emerging nanotechnology are extensively discussed.

PHRMSCI 174L:

Biopharmaceutics &
Nanomedicine Lab

Introduction to cancer drug screening using cellular models and confirmation of comprehensive therapeutic efficacy using a live animal model. Includes basic cell culture, cytotoxicity assays, cell analysis, drug circulation test, and tumor eradication and imaging experiments.

PHRMSCI 177:

Medicinal Chemistry

An introduction of the basics of drug activity and mechanisms. Strategies used to identify lead compounds such as natural product chemistry, combinatorial chemistry, molecular modeling, and highthrough put screening. Relationship of molecular structure to pharmacological activity.

PHRMSCI 177L:

Medicinal Chemistry Lab

An introduction of the basics of drug activity and mechanisms. Strategies used to identify lead compounds such as natural product chemistry, combinatorial chemistry, molecular modeling, and highthrough put screening. Relationship of molecular structure to pharmacological activity.