PHARMACOLOGY (PHCL)

PHCL 2020: Envir. Hlth Perspectives
Biomolecular Sciences
A survey course emphasizing environmental health issues, such as overpopulation, resource management, environmental degradation, and pollution. The course is designed for nonpharmacy majors. Prerequisite requirements for this course may also be satisfied by equivalent course work as approved by the department.
3 credits
Prerequisites
min grade of C in BISC 1020 and BISC 1040.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 3400: Animal Cells: Testing New Drug
Biomolecular Sciences
The aim of this course is to provide an introduction to the multiple biochemical and molecular approaches that explain how cell reacts to foreign organic agents without introducing the names of too many specific drugs. It is intended to develop the subject from the point of view of pharmacologists who are working at the molecular level and trying to understand the problems of drug-cell interactions. Parts of the discussion will be a repetition for some students. However, lectures are concentrated on key theories and novel approaches that hone in on a variety of contemporary interdisciplinary fields, which define pharmacology.
1 credit
Prerequisites
24 Earned Credits.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 3411: Human Pathophysiology I
Biomolecular Sciences
The students will understand the consequences of disease on normal physiology. An in-depth study of the pathophysiology condition will equip the students to assess multi-organ system dysfunction. These basic understandings will enable the students to progress through the curriculum with a knowledge and analytical base necessary to excel during their practice experiences.
3 credits
Prerequisites
24 Earned Credits.
Potentially offered with the following Instruction Type(s):
Lecture/Lab
Course Fees:
$85.00

PHCL 3412: Human Pathophysiology II
Biomolecular Sciences
The students will understand the consequences of disease on normal physiology. An in-depth study of the pathophysiology condition will equip the students to assess multi-organ system dysfunction. These basic understandings will enable the students to progress through the curriculum with a knowledge and analytical base necessary to excel during their practice experiences.
3 credits
Prerequisites
min grade of C in PHCL 3411 and 24 Earned Credits.
Potentially offered with the following Instruction Type(s):
Lecture/Lab
Course Fees:
$75.00

PHCL 3450: Nutritional Pharmacology
Biomolecular Sciences
Nutritional issues of concern to pharmacists, including the popular use of nutritional supplements for physiological enhancement and disease prevention, drug-nutrient interactions, therapeutic implications for nutritional pharmacology, and product availability.
3 credits
Prerequisites
24 Earned Credits.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 3460: Immunological Basis for Tx.
Biomolecular Sciences
This course will provide students with an overview of how immune system works and its involvement in health and disease.
3 credits
Prerequisites
min grade of C in BISC 1620 and BISC 1630 and 24 Earned Credits.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 3470: Intro. to Envir. Toxicology
Biomolecular Sciences
Introduction to chemical nature and reactions of toxic substances; their origins and uses; and the aspects of exposure, transformation, and elimination. The course is designed for biology, chemistry, and pharmacy majors. Prerequisite requirements for this course may also be satisfied by equivalent course work as approved by the department.
2 credits
Prerequisites
min grade of C in BISC 1600 and BISC 1620 and CHEM 2210 and CHEM 2220 and 24 Earned Credits.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 3480: Principles of Life Sci. Res.
Biomolecular Sciences
This course addresses a broad spectrum of activities associated with the conduct of life science research. Students should gain a thorough understanding of the requirements, expectations and responsibilities of life science researchers.
1 credit
Prerequisites
24 Earned Credits.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 3510: Drugs and Human Performance
Biomolecular Sciences
This course encompasses an analysis of the pharmacological, historical, religious, ethical, legal, and administrative considerations related to the use of drugs or supplements for the nontherapeutic purpose of enhancing cognitive, sexual, or physical performance. The primary goal of the course is to develop an in-depth appreciation of the factors associated with the nontherapeutic (off-label) use of substances to enhance human performance. More specifically, the course will enable a better understanding of the pharmacological as well as onpharmacological factors associated with such use. This course, unlike a typical "drug abuse" course, will not consider the use of substances to produce a "high" or altered state of consciousness, e.g., a positive or negative euphoria. Rather, the emphasis will be on the use of substances (including some controlled drugs) to improve human performance. Z grade.
2 credits
Prerequisites
24 Earned Credits.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 3520: Case Studies in Immunology
Biomolecular Sciences
The designed elective course will provide students with an overview of the diseases of the immune system, particularly of genetically inherited primary immune deficiency diseases and an insight into the functioning of the normal immune system. Moreover, this course will also illustrate the interdisciplinary mechanisms of immunity, its clinical context, and describe the immunological problems often seen in the clinics. The course is designed for two kinds of students: those specializing in other areas and want to learn enough immunology to gain access to the experimental literature and those with a particular interest in immunology as preparation for an advanced immunology course.
2 credits
Prerequisites
24 Earned Credits.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 3810: Introduction to Toxicology
Biomolecular Sciences
3 credits
Prerequisites
min grade of C in CHEM 2220 and CHEM 2221 and 24 Earned Credits.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 3820: Fundamentals of Cancer
Biomolecular Sciences
Discussions of fundamental, underlying biological changes from normal physiology to cancer. Will include discussions of the cell cycle, cancer genetics, regulation of expression, carcinogenesis, metastasis and more to encompass an understanding of all concerns when considering treatment options in subsequent courses.
2 credits
Prerequisites
24 Earned Credits.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 3999A: Spec.ized Top. in Environ. Hlt
Biomolecular Sciences
In this course we will have focused, in-depth discussion of timely issues related to environmental health. Students will be informed of the issues through reading scientific literature and will be expected to propose solutions through discussion and writing assignments. Topics will be dictated by current events but could include, for example, environmental lead exposure and toxicity, pharmaceuticals in the environment, consequences of climate change, contamination of the food supply, e-waste etc.
3 credits
Prerequisites
24 Earned Credits.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 4400: Physiologic Case Stdy for Tx.
Biomolecular Sciences
The course focuses on problems based physiologic study of organ function and an emphasis on human physiology. The structure and function of the major body systems will be explored including the musculoskeletal, cardiovascular, respiratory, renal, nervous, endocrine, and body fluids and electrolytes.
1 credit
Prerequisites
24 Earned Credits.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 4410: Pharm.: Nov. Drugs in Clin Tri
Biomolecular Sciences
An in-depth discussion of topics of current importance in pharmacology of commonly occurring diseases is emphasized. Students learn about medicines currently in clinical trials and therapies in development.
2 credits
Prerequisites
24 Earned Credits.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 4420: Clinical Toxicology
Biomolecular Sciences
This course is designed to apply basic pharmacological and toxicological principles to the management of poisoned patients. Several of the drugs commonly encountered in accidental or intentional poisoning are to be covered. The student should be able to recognize signs and symptoms of poisoning, characterize the type and extent of intoxication, and develop a specific management plan.
2 credits
Prerequisites
24 Earned Credits.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 4431: Basic and Clinical Pharm. I
Biomolecular Sciences
Basic principles of pharmacodynamics; pharmacology of drugs acting on the autonomic nervous system; other drug classes acting on autonomic-innervated organs.
4 credits
Prerequisites
min grade of C in PHCL 3411 and PHCL 3412 and 24 earned credits.
Potentially offered with the following Instruction Type(s):
Lecture
Course Fees:
$10.00

PHCL 4432: Basic and Clinical Pharm. II
Biomolecular Sciences
Continuation of 443; central nervous system drugs; hematopoietic, immunosuppressant, antineoplastic, and antiallergic drugs; basics of environmental and clinical toxicology.
4 credits
Prerequisites
min grade of C in PHCL 4431 and 24 earned credits.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 4450: Nutritional Pharmacology
Biomolecular Sciences
Discussions of how drugs, nutrients, and disease states interact and affect one another, how nutritional supplements influence drug therapy, nutritional status, and disease processes.
1 credit
Prerequisites
24 Earned Credits.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 5010: Principles of Life Sci. Res.
Biomolecular Sciences
This course consists of facilitated discussions of different topics. Students will be assigned as discussion facilitators for one or two topics. Student facilitators will be responsible for preparing a synopsis of the discussion for distribution to the class and for grading purposes. Grading will be 50 percent based on the discussion facilitation and write-up and 50 percent based on participation in other discussions.
1 credit
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 5031: Lab Meth in Pharm. & Tox. I
Biomolecular Sciences
Fundamental laboratory exercises designed to provide the student with hands-on experience with techniques basic to the disciplines of pharmacology and toxicology.
2 credits
Potentially offered with the following Instruction Type(s):
Laboratory

PHCL 5032: Lab Meth in Pharm. & Tox. II
Biomolecular Sciences
Fundamental laboratory exercises designed to provide the student with hands-on experience with techniques basic to the disciplines of pharmacology and toxicology.
2 credits
Prerequisites
min grade of C in PHCL 5031.
Potentially offered with the following Instruction Type(s):
Laboratory

PHCL 5050: Mod. Phcl: Nov. Drugs Clin. Tr
Biomolecular Sciences
An in-depth discussion of topics of current importance in pharmacology of commonly occurring diseases are emphasized.
2 credits
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 5131: Introductory Pharmacology I
Biomolecular Sciences
General principles of pharmacodynamics; drugs affecting the autonomic nervous system and those organs innervated by that system. Prerequisite requirements for this course may also be satisfied by equivalent course work as approved by the department or by consent of instructor.
4 credits
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 5132: Introductory Pharmacology II
Biomolecular Sciences
Continuation of 563; autonomic, cardiovascular, and renal drugs; endocrinological and chemotherapeutic agents. Prerequisite requirements for this course may also be satisfied by consent of instructor.
4 credits
Prerequisites
min grade of C in PHCL 5131.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 5190: Drug Abuse Education
Biomolecular Sciences
Pharmacological, legal, and socio-psychological aspects of drug abuse. Z grade
3 credits
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 5360: Receptors and Channels
Biomolecular Sciences
The course will cover aspects of cell signaling and membrane biophysics focused on inter and intracellular communication. Research techniques as well as classical and recent works will be discussed.
3 credits
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 5381: Introduction to Toxicology
Biomolecular Sciences
Course provides an introduction to the principles of toxicology.
3 credits
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 5410: Problems in Pharmacology
Biomolecular Sciences
Investigation of individual problems. (May be repeated for credit).
1 - 3 credits
Potentially offered with the following Instruction Type(s):
Independent Study

PHCL 5470: Intro. to Envir. Toxicology
Biomolecular Sciences
Introduction to chemical nature and reactions of toxic substances, their origins and uses; and aspects of exposure, transformation, and elimination.
2 credits
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 5510: Principles of Life Sci. Res.
Biomolecular Sciences
This course consists of facilitated discussions of different topics. Students will be assigned as discussion facilitators for one or two topics. Student facilitators will be responsible for preparing a synopsis of the discussion for distribution to the class and for grading purposes. Grading will be 50 percent based on the discussion facilitation and write-up and 50 percent based on participation in other discussions.
1 credit
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 5531: Lab Meth in Pharm. & Tox. I
Biomolecular Sciences
Fundamental laboratory exercises designed to provide the student with hands-on experience with techniques basic to the disciplines of pharmacology and toxicology.
2 credits
Potentially offered with the following Instruction Type(s):
Laboratory

PHCL 5532: Lab Meth in Pharm. & Tox. II
Biomolecular Sciences
Fundamental laboratory exercises designed to provide the student with hands-on experience with techniques basic to the disciplines of pharmacology and toxicology.
2 credits
Prerequisites
min grade of C in PHCL 5031.
Potentially offered with the following Instruction Type(s):
Laboratory

PHCL 5550: Mod. Phcl: Nov. Drugs Clin. Tr
Biomolecular Sciences
An in-depth discussion of topics of current importance in pharmacology of commonly occurring diseases are emphasized.
2 credits
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 5631: Introductory Pharmacology I
Biomolecular Sciences
General principles of pharmacodynamics; drugs affecting the autonomic nervous system and those organs innervated by that system. Prerequisite requirements for this course may also be satisfied by equivalent course work as approved by the department or by consent of instructor.
4 credits
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 5632: Introductory Pharmacology II
Biomolecular Sciences
Continuation of 563; autonomic, cardiovascular, and renal drugs; endocrinological and chemotherapeutic agents. Prerequisite requirements for this course may also be satisfied by consent of instructor.
4 credits
Prerequisites
min grade of B in PHCL 5631.
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 5690: Drug Abuse Education
Biomolecular Sciences
Pharmacological, legal, and socio-psychological aspects of drug abuse. Z grade
3 credits
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 5860: Receptors and Channels
Biomolecular Sciences
The course will cover aspects of cell signaling and membrane biophysics focused on inter and intracellular communication. Research techniques as well as classical and recent works will be discussed.
3 credits
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 5881: Introduction to Toxicology
Biomolecular Sciences
Course provides an introduction to the principles of toxicology.
3 credits
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 5910: Problems in Pharmacology
Biomolecular Sciences
Investigation of individual problems. (May be repeated for credit).
1 - 3 credits
Potentially offered with the following Instruction Type(s):
Independent Study

PHCL 5970: Intro. to Envir. Toxicology
Biomolecular Sciences
Introduction to chemical nature and reactions of toxic substances, their origins and uses; and aspects of exposure, transformation, and elimination.
2 credits
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 6110: Tching in Pharm. and Tox.
Biomolecular Sciences
Graduate students will be carefully monitored in their teaching activities in undergraduate pharmacy courses. Z grade
1 credit
Potentially offered with the following Instruction Type(s):
Seminar

PHCL 6120: Tching in Pharm. and Tox.
Biomolecular Sciences
Graduate students will be carefully mentored in their teaching activities in undergraduate pharmacy courses. Z grade
1 credit
Potentially offered with the following Instruction Type(s):
Seminar

PHCL 6410: Unif Lab in Pharm, Tox & Phys
Biomolecular Sciences
Unified laboratory in pharmacology, toxicology, and physiological chemistry. Fundamental experiments illustrating concepts common to the three disciplines; both in vivo and in vitro techniques will be utilized.
2 credits
Potentially offered with the following Instruction Type(s):
Laboratory

PHCL 6420: Unif Lab in Pharm, Tox & Phys
Biomolecular Sciences
Unified laboratory in pharmacology, toxicology, and physiological chemistry. Fundamental experiments illustrating concepts common to the three disciplines; both in vivo and in vitro techniques will be utilized.
2 credits
Potentially offered with the following Instruction Type(s):
Laboratory

PHCL 6430: Sem: Curr Top. in Pharm & Tox
Biomolecular Sciences
Z grade
1 credit
Potentially offered with the following Instruction Type(s):
Seminar

PHCL 6510: Directed St. in Pharm and Tox
Biomolecular Sciences
Research tutorials requiring individual conferences, literature assignments, and laboratory experiences with departmental faculty members.
1 credit
Potentially offered with the following Instruction Type(s):
Independent Study

PHCL 6520: Directed St. in Pharm and Tox
Biomolecular Sciences
Research tutorials requiring individual conferences, literature assignments, and laboratory experiences with departmental faculty members. Z grade
1 credit
Potentially offered with the following Instruction Type(s):
Independent Study

PHCL 6610: Advanced Physiology
Biomolecular Sciences
Physiology of those systems, organs, and physiological mechanisms of special significance to pharmacology, including a comparative cross-species emphasis for selected organ systems. Prerequisite requirements for this course may also be satisfied by consent of instructor.
4 credits
Potentially offered with the following Instruction Type(s):
Lecture/Lab

PHCL 6620: Advanced Physiology
Biomolecular Sciences
Physiology of those systems, organs, and physiological mechanisms of special significance to pharmacology, including a comparative cross-species emphasis for selected organ systems. Prerequisite requirements for this course may also be satisfied by consent of instructor.
4 credits
Potentially offered with the following Instruction Type(s):
Lecture/Lab

PHCL 6630: General Pharmacology I
Biomolecular Sciences
Fundamentals of pharmacokinetic, pharmacodynamic, and receptor selectivity of various classes of biologically active agents.
3 credits
Potentially offered with the following Instruction Type(s):
Lecture/Lab

PHCL 6650: Human Neurobiology
Biomolecular Sciences
Review of the neuroanatomical, neurophysiological, and neurochemical substances upon which centrally acting drugs and toxicants may act.
4 credits
Potentially offered with the following Instruction Type(s):
Lecture/Lab

PHCL 6680: Externship in Pharmacology
Biomolecular Sciences
Credit given for participation in pharmacological screening procedures carried out in the laboratories of a pharmaceutical manufacturer. Z grade
1 - 8 credits
Potentially offered with the following Instruction Type(s):
Internship

PHCL 6690: Physiological Chemistry
Biomolecular Sciences
Carbohydrate, protein, and nucleic acid structure and function, enzyme catalysis, intermediary metabolism, biochemical endocrinology, membrane structure, mechanisms of solute transport, and molecular genetics.
4 credits
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 6751: Gen Princ of Pharm. & Tox. I
Biomolecular Sciences
General principles of pharmacology and toxicology; biotransformation of toxicants; chemical carcinogenesis, mutagenesis, teratogenesis; receptors and signaling pathways. Prerequisite requirements for this course may also be satisfied by consent of instructor.
4 credits
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 6752: Gen Princ - Pharm. & Tox. II
Biomolecular Sciences
General principles of pharmacology and toxicology, drug toxicology, organ systems, risk assessment, environmental toxicants. Prerequisite requirements for this course may also be satisfied by consent of instructor.
4 credits
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 6790: Meth. in Pharm. and Toxicology
Biomolecular Sciences
Emphasis on the quantification of toxic responses of chemical origin. Use of toxicology in the regulatory process; principles and methods for acute and chronic toxicity; biochemical methods for reassessing organ function; reproductive toxicity testing; risk assessment of chemical hazards. (Lecture and laboratory).
4 credits
Potentially offered with the following Instruction Type(s):
Lecture/Lab

PHCL 6810: Sel Top. - Pharm. and Tox.
Biomolecular Sciences
Topics may include pharmacokinetic, pharmacodynamic, and receptor selectivity of biologically active agents, food additives, drug toxicity, toxicology of agricultural and industrial chemicals, clinical toxicology, toxicity of plastics; naturally occurring toxins.
2 credits
Potentially offered with the following Instruction Type(s):
Lecture

PHCL 6850: Externship in Toxicology
Biomolecular Sciences
Credit given for research performed in toxicology at other academic institutions or private industrial concerns. Z grade
1 - 8 credits
Potentially offered with the following Instruction Type(s):
Internship

PHCL 6999A: Advanced Topics
Biomolecular Sciences
Lectures, readings, and discussions of special areas of experimental pharmacology and allied subjects. (May be repeated for credit).
2 credits
Potentially offered with the following Instruction Type(s):
Independent Study