PHCO 702

Short title Principles of Pharmacology

Long title Principles of Pharmacology and Physiology

Effective term Spring

Course units/hours 3 credit hours M/W/F 9:05am-9:55am in 4007 Genetic Medicine Bldg.

Grading basis (GRAD – H,P,L, F)

Course Component (lecture or lab) lecture

Course Description

This is a graduate-level course that introduces students to the major areas of pharmacological and physiological principles of drug action and serves for a basis for advanced courses; registration is by permission of the instructor.

Short version:

Prerequisites include PHCO 701; CHEM 430; registration by instructor permission.

Course objectives (learning outcomes):

The objectives of this course are to provide graduate students in biomedical research programs familiarity with the pharmacologic principles involved in the drug therapy of disease. Students will increase critical thinking skills in the context of the specific topics listed in the syllabus which includes drug intervention for diseases of the major organ systems of the human body. By the end of this course students should be familiar with therapeutic approaches to the use of drugs to treat major diseases relating to the autonomic nervous system, cardiovascular and renal system, cancer, endocrine functions, bacterial infection and the central nervous system. Students should have working knowledge sufficient to apply those principles to new research topics and to propose appropriate strategies to solve relevant research questions.

Course Assignments

Reading assignments may be posted by the individual instructors and will be a combination of review articles, research papers of seminal importance to the field, and recent research articles of significant impact. There may be written assignments will be quizzes/homework and short essay-style exams designed to test both the assimilation of the readings and the application of principles to new scientific scenarios posted by individual instructors.

Assessments

Achievement of course objectives and individual student grades will be determined from a set of four exams given in class at regular intervals after each section of the course (I. Autonomic/autacoid/endocrine, II. CV/Renal III. Central Nervous System, IV. Chemotherapy). . By the end of the course, students should demonstrate a working vocabulary in the field and have a working knowledge of the application of pharmacologic principles to drug therapy.

1/10/2024	Wed	Fiordalisi	Introduction to the ANS	
1/12/2024	Fri	Herman	Parasymphathetic Pharmacology	4
1/15/2024	Mon	riointan	Martin Luther King Holiday	Melissa Herman
1/17/2024	Wed	Fiordalisi	Sympathetic Nervous System Pharmacology-Part 1	ANS Drugs
1/19/2024	Fri	Fiordalisi	Sympathetic Nervous System Pharmacology Part 2	
1/10/2024		Fiordalisi/		4
1/22/2024	Mon	Herman	Autonomic NS pharmacology: Summary and practice	
1/22/2024			Take Home Exam 1 sent out	
1/24/2024	Wed	Asrican	Central Nervous System Physiology	
1/26/2024	Fri	Coleman	Neuroimmunology in Drug Addiction	-
1/29/2024	Mon	Herman	pharmacotherapy of alcohol related disorders/ circuitry	4
1/31/2024	Wed	Roth	pharmacotherapy of drug abuse relegated circuitry	Block Leader
2/2/2024	Fri	Sona	Neurogenesis and its relevance to CNS therapeutics	Juan Song
2/5/2024	Mon	Walsh	Neural Circuit Mechanisms	
2/7/2024	Wed	Kash	circuitry-based therapeutics with highlight of anxiety and depression	CNS
2/9/2024	Fri	Kash	circuitry-based therapeutics with highlight of anxiety and depression	
2/12/2024	Mon.	Wel	l Being Dav	1
2/14/2024	Wed	Ritola	Neuro Tools	1
2/14/2024			Take Home Exam 2 sent out	
2/16/2024	Fri	Kenakin	CV Heart Failure	
2/19/2023	Mon	Kenakin	Cardiac Angina	1
2/21/2024	Wed	Duncan	Anti-Inflammatory Mechanisms for Drugs	Block Leader
2/23/2024	Fri	Duncan	Anti-Inflammatory Mechanisms for Drugs	Terry Kenakin
2/26/2024	Mon	Mackman	Antithrombotic drugs	
2/28/2024	Wed	Aleman	Recent concepts and Research in Hemophilia	Cardiovascular
3/1/2024	Fri	Graves	Antihypertensives	Anti-Inflammatory
3/4/2024	Mon	Kenakin	Respiratory / pulmonary pharmacology	1
3/6/2024	Wed	Kenakin	Renal Pharmacology	1
3/8/2024	Fri		Spring Break: No Classes	1
3/18/2024	Mon	Schisler	Cardiovascular Genomics	1
3/18/2024	Mon	Kenakin	Take Home Exam 3 Sent out	
3/20/2024	Wed	Fiordalisi	Introduction to antimicrobials: Mechanisms of action	Block Leaders
3/22/2024	Fri	Fiordalisi	Introduction to antimicrobials: Mechanisms of resistance	Fiordalisi/Nicholas
3/25/2024	Mon	Nicholas	Peptidoglycan synthesis/Inhibition by b-lactams	1
3/27/2024	Wed	Nicholas	Resistance mechanisms to b-lactam antibiotics	Antimicrobials
3/29/2024	Fri		Spring Holiday: No Classes	Antivirals
4/1/2024	Mon	Conlon	Antibiotic Tolerance	1
4/1/2024	Mon	Kenakin	Take Home Exam 4 Sent out	
4/3/2024	Wed	Der	Cancer Chemotherapy	
4/5/2024	Fri	Graves	Molecular Targeted therapeutics in cancer	Block Leader
4/8/2024	Mon	Emanuele	Targeting the ubiquitin system in cancer	Lee Graves
4/10/2024	Wed	Graves	advanced cancer therapy	Cancer / Inflammation
4/12/2024	Fri	Stalnecker	RAS as a therapeutic agent	
4/15/2024	Mon	Palmer	Combination Cancer Therapy	
4/15/2024	Mon		Take Home Exam5 Sent out	
4/17/2024	Wed	Kenakin	Drug Discovery, Agonism, Antagonism, Allosterism	
4/19/2023	Fri	Kenakin	Allosterism , Highthroughput screening	Block Leader
4/22/2024	Mon	Kenakin	Safety Pharmacology / clinical Trials/Drug approval(s)+	Terry Kenakin
4/24/2024	Wed	Hahn	Pharmacokinetics I	
4/26/2024	Fri	Hahn	Pharmacokinetics 2	Drug Discovery
4/29/2024	Mon	Hahn	Pharmacokinetics 3	Pharmacodynamics
4/29/2024	Mon		Take Home Exam 6 Sent out	Pharmacokinetics