

Pharmacology (PHAR)

PHAR 5000 Intro to Pharmacology 2 Credits

This mini-course presents an overview of some aspects of pharmacology. It begins with basic principles of pharmacodynamics and pharmacokinetics. Neuropharmacology, including the autonomic nervous system and the central nervous system, is then covered. Cardiovascular pharmacology and its central control are discussed. Finally, there is a specialized discussion of the role of voltage and ligand-gated channels in controlling cellular function.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

PHAR 6000 Principles of Pharmacology 4 Credits

Fundamental concepts in pharmacology such as drug-receptor interactions via radioligand binding, functional agonism, antagonism, allosteric modulation as well as drug metabolism and pharmacokinetics will be covered. The course also includes an overview of experimental design and statistical analyses of scientific data. Meets MW 3-5. Quizzes every day. Final at end. Recommended (but not required) text is: Rang and Dale's Pharmacology Either 6th or 7th ed (used 6th is cheap on Amazon) Syllabus on website: <http://pharmacology.georgetown.edu/courses/phar611.html>

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Equivalent to PHAR 6200, PHAR 6201

Course registration restrictions:

Enrollment limited to students in the MS-PHAR-SM or PHD-PHPH-SM programs.

Enrollment is limited to Graduate level students.

PHAR 6001 Graduate Pharmacology 8 Credits

This course includes both a broad survey of pharmacology and detailed discussions of experimental approaches used in pharmacological research. Discussions of primary literature articles related to the major lecture topics are included. PBIO501 and PHAR611 are prerequisites.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

PHAR 6200 Pharmacokinetics/dynamics 2 Credits

This course introduces students to the basic principles of pharmacokinetics and pharmacodynamics, and extends to quantitative aspects of both of these sub-disciplines. The course consists of a combination of lectures and problem solving workshops focused on application of these principles to both basic research and therapeutics.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

PHAR 6201 Excitable Membranes 2 Credits

This course introduces students to the basic principles of electrophysiology, and introduces the pharmacology of targets that modify excitable membranes

Level: Graduate

Grading: Main Campus (UGrad, Grad)

PHAR 6501 Neuropsychopharmacology 2 Credits

This course covers a number of common drugs that are psychoactive. The format of the course is interactive with students presenting much of the material. During the semester each student is required to prepare at one, or more, presentation on a specific drug. This course is given only when several students request it.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

PHAR 6503 Introduction to Toxicology 1 Credit

This course is designed to introduce students to the field of toxicology. It will cover the basic principles and mechanisms of toxicology including toxicokinetics, biotransformation of xenobiotics, genotoxicity, and carcinogenesis as well as provide an overview of target organ toxicity and toxic agents including metals, pesticides, solvents, radiation, and food. Practical applications of toxicology such as occupational, regulatory, clinical, and forensic toxicology will be covered. Students will also get the opportunity to do a risk assessment on a hazardous or potentially hazardous substance.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

PHAR 6504 Medicinal PlantsPharmacognosy 3 Credits

Plants have provided drug models for more than a quarter of pharmaceuticals in use today, including digoxin, warfarin, morphine, and Taxol. This course will cover the traditional and modern uses of medicinal plants, and compare the pharmacologic effects of herbal medicinal products and synthetic drugs. The risks and benefits of St. John's wort, echinacea, ginkgo, ginger, and other popular phytomedicines will be discussed.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

PHAR 6505 Advanced Topics in Nutrition 3 Credits

Description: This course examines a range of topics on human nutrition, including macronutrients, micronutrients, the effects of diet on health, and claims and evidence for use of megadoses of vitamins, minerals and amino acids for treating specific health conditions. The emphasis is on evidence-based nutritional information, utilizing the medical and epidemiological literature to analyze the impact of food, diets and nutritional supplements on human health. The class will also address food preparation and cooking to facilitate the adoption of nutritional principles into your diet. Special topics include breastfeeding, exercise nutrition and sports supplements, the nutrition of beverages, genetically modified foods, prebiotics & probiotics, , the science of dieting, the evolutionary origins of the human diet, and the endocrinology of adipose tissue and obesity. Grading is based on the performance of several assignments, a paper and a final exam.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

PHAR 6506 Human Nutrition Obesity 2 Credits

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

PHAR 6507 Dietary Supplements:Healthcare 1 Credit

This interactive and interdisciplinary course covers the use of botanical medicines, dietary supplements, and nutraceuticals within and outside of conventional medicine. The course combines faculty and guest expert presentations with class research projects on the regulation and marketing of herbs, vitamins, and nutraceuticals and their potential impact on public health and public policy.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

PHAR 6508 Topics in Epilepsy 1 Credit

Deciphering pathological synchronization and normal brain function:

The epilepsies are a diverse group of neurological disorders, characterized by recurrent seizures. In this course, we will examine the major types of epilepsy through the lens of animal models and neural circuits. Using a combination of classic papers in epilepsy and more recent literature, we will evaluate the validity and utility of common models of epilepsy, the state of our circuit-level understanding of the epilepsies, and use these circuit maps to deepen our understanding of normal brain functions. This course will be heavily (if not exclusively) discussion based.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

PHAR 6509 Redox Signal Free Rad Bio 2 Credits

The objective of this course is to provide basic knowledge of reactive oxygen species, antioxidants, and other redox compounds. As free radical and redox-regulated processes play vital roles in various pathophysiological conditions, knowledge gained in this course will help students to perform research concerning these processes in their fields.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

PHAR 6510 Drugs of Abuse and Addiction 1 Credit

Substance use disorders, commonly called addictions, were once viewed largely as a moral failing or character flaw. Over the past decades, however, a substantial body of research has transformed our understanding of substance use disorders, which are now understood to be chronic disorders characterized by significant changes in brain function. This course aims to introduce students to the neurobiology of substance use disorder and explains how addictive substances produce changes in brain structure and function that promote and sustain addiction and contribute to relapse.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the MS-PHAR, MS-PHAR-SM, MS-PHSL or MS-PHSL-SM programs.

PHAR 6511 Clinical Pharmacology Bootcamp 1 Credit

This course will be a deep dive of the principles of pharmacology within the context of clinical cases. Topics covered can include but are not limited to relevant drug interactions, mechanisms of actions, cellular and molecular targets, relevant signal transduction pathways, adverse drug reactions, toxicology pharmacokinetic and pharmacodynamic properties, pharmacogenetics, and other interesting clinical pharmacology issues that arise. Each student will be asked to participate in discussions regarding a faculty selected case and will be required to present a case(s) of interest of their own choosing (either from the medical literature or an experiential case study (if applicable) or writing a new case study of their own.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the MS-PHAR or MS-PHSL programs.

Enrollment is limited to Graduate level students.

PHAR 7800 SMP Grad Pharmacology 2 Credits

This graduate course will use lecture captures of medical pharmacology sessions for self-study, so students will come to class prepared for active learning (flipped) sessions to reinforce the material. The material will include learning about drugs that are used to treat cardiac, cardiovascular, respiratory, renal, GI, endocrine and reproductive conditions and diseases. Prerequisites: for SMP students only. Robert Yasuda, PhD, Course Director

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the MS-PHLG program.

Enrollment is limited to Graduate level students.

PHAR 7950 Pharmacology Research 2-6 Credits

Individualized research tutorial with laboratory component. Open only to MS students in the Pharmacology program. Graded.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

PHAR 7951 Pharmacology Research 2-7 Credits

Individualized research tutorial with laboratory component. Open only to MS students in the Pharmacology program. Requires permission of instructor. Graded.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

PHAR 8000 Readings in Grad Pharm Phys 2 Credits

This course includes both a broad survey of pharmacology and physiology and detailed discussions of experimental approaches used in pharmacological and physiological research. Discussions of primary literature articles related to the major lecture topics are included. PBIO501 and PHAR611 are prerequisites.

Level: Graduate

Prerequisites: (PBIO 501 or PHSL 6501) and (PHAR 611 or PHAR 6000)

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

PHAR 8002 Graduate Pharmacology for PSTP 1-5 Credits

This course covers the major pharmacology of the peripheral and central nervous system, cardiovascular system, endocrine system, immune system, and basic cancer pharmacology. Throughout the course, both normal function (covered previously in Physiology) and pathophysiology will be emphasized where appropriate. The course focuses on mechanisms of drug action above and beyond simple memorization of pharmacological agents. Throughout the semester, methods and models in pharmacology are emphasized to aid understanding of the drug development process.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

Enrollment limited to students in a Doctor of Philosophy degree.

PHAR 9001 Tutorial: Pharmacology 1-6 Credits

Individualized tutorials between students and faculty to address topics not covered by other courses.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

PHAR 9991 Continuous Registration

Continuing Registration is for students who have completed all requirements for the Ph.D. degree but who have not yet graduated. M.S. students can use this mechanism to maintain their student status while finishing needed requirements.

Level: Graduate, Undergraduate

Grading: No Grade

Course registration restrictions:

Enrollment is limited to Graduate level students.

PHAR 9992 Continuous Registration

Level: Graduate, Undergraduate

Grading: No Grade

Course registration restrictions:

Enrollment is limited to Graduate level students.

PHAR 9993 Continuous Registration

Level: Graduate, Undergraduate

Grading: No Grade

Course registration restrictions:

Enrollment is limited to Graduate level students.

PHAR 9994 Continuous Registration

Level: Graduate, Undergraduate

Grading: No Grade

Course registration restrictions:

Enrollment is limited to Graduate level students.