

PHARMACY (PHARMACY)

PHARMACY 125 – EXPLORING PHARMACY I

2 credits.

Provides opportunities to integrate and apply introductory concepts and content related to Pharmaceutical Sciences, Social Administrative Pharmacy, and Pharmacy Practice. Students also develop academic and interpersonal skills helpful for success in current and future courses.

Requisites: None

Repeatable for Credit: No

Last Taught: Fall 2023

PHARMACY 126 – EXPLORING PHARMACY II

1 credit.

Expands upon the learning foundations provided in PHARMACY 125. Additional opportunities to develop pre-professional plans, explore unique pharmacy career opportunities and learn about pharmacy student co-curricular and professional development experiences. Prepare students to successfully participate in the pharmacy admissions process.

Requisites: PHARMACY 125

Repeatable for Credit: No

Last Taught: Spring 2024

PHARMACY 225 – PHARMACY EXPLORATION SEMINAR

2 credits.

Provides opportunities to explore pharmacy career paths, develop pre-professional plans, learn about pharmacy student co-curricular and professional development experiences, and prepare to successfully participate in the pharmacy admissions process.

Requisites: Not open to students with credit for PHARMACY 125 or 126

Repeatable for Credit: No

Last Taught: Spring 2024

PHARMACY 423 – PHARMACY INTEGRATED LEARNING LABORATORY

1 credit.

Provides an interdivisional foundation for pharmacy students to understand many aspects of pharmacy through a wide variety of activities. Delivers a broad understanding of the pharmacist's public health and patient advocacy role with opportunities to practice basic calculations related to drug formulations in the context of safety, drug stability, and patient care. Fosters development of communication skills with peers and patients and be introduced to patient counseling principles. Includes active participation in a longitudinal group experience with an assigned senior in the community to apply course content.

Requisites: Declared in the Doctor of Pharmacy Program with first year standing only

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Fall 2023

PHARMACY 434 – PHARMACEUTICAL GENETICS AND IMMUNOLOGY

2 credits.

Facilitates the understanding and application of the principles of pharmaceutical genetics, immunology, and biotechnology.

Requisites: Declared in Doctor of Pharmacy program

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Spring 2024

PHARMACY 451 – MARGINALIZED POPULATIONS IN HEALTHCARE AND MEDIA

1 credit.

Provides opportunities for learning about healthcare barriers and facilitators: health disparities; and health outcomes using popular culture movies, and media that portray marginalized communities. Provides opportunities to discuss how their identities influence their view of the movie's theme and how bias may impact care provided in a healthcare setting.

Requisites: Declared in the Doctor of Pharmacy program

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Fall 2022

PHARMACY 490 – SELECTED TOPICS IN PHARMACY

1-2 credits.

Various topics related to the Pharmacy profession.

Requisites: Declared in Doctor of Pharmacy program

Repeatable for Credit: Yes, unlimited number of completions

Last Taught: Spring 2023

PHARMACY 563 – DRUG HISTORY: DANGEROUS DRUGS AND MAGIC BULLETS

2 credits.

A history of medicinal substances and dangerous drugs in wider context, with a focus on gender, race, class, business, and other analytical categories. "Medicines" and "drugs" change over time -- and concepts of risk, danger, legality, and even scientific evidence are elastic. Histories of laws, regulations, and key historical actors, as well as specific drug biographies, will be provided.

Requisites: Graduate/professional standing

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Fall 2023

PHARMACY 564 – PSYCHEDELIC HISTORY: SACRED PLANTS, SCIENCE & PSYCHOTHERAPY

3 credits.

A history of psychedelics in the U.S. and more globally. Read texts that were formative in the development of the history of psychopharmacology, pharmaceuticals, and the "war on drugs." Examine readings that represent different themes, subfields, or areas of research interest within the history of psychedelics (medicine science). Beyond biomedicine, types of analysis include: consumerism, class, ethnicity, gender, and military history. Histories of laws, regulations, and key historical actors, as well as specific drug biographies, will be provided.

Requisites: Declared in MS Pharmaceutical Sciences: Psychoactive Pharmaceutical Investigation

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Spring 2024

PHARMACY/ISYE 608 – SAFETY AND QUALITY IN THE MEDICATION USE SYSTEM

3 credits.

Addresses the problems of medication errors and quality in health care, problem resolutions, methods of assessment, and intervention implementation and quality management.

Requisites: Declared in Doctor of Pharmacy program with third year standing

Repeatable for Credit: No

Last Taught: Fall 2023

PHARMACY 612 – LEGAL STRUCTURES FOR CONTROLLED SUBSTANCES

1 credit.

Discusses federal statutes and regulations related to drug manufacturing, drug distribution, and drug use, with an emphasis on drug scheduling and controlled substances. Describes the governmental framework within which pharmaceutical development is regulated and practiced. Covers statutes and regulations protecting human subjects' privacy and autonomy in research.

Requisites: Declared in MS Pharmaceutical Sciences: Psychoactive Pharmaceutical Investigation or Capstone Certificate in Psychoactive Pharmaceutical Investigation

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Fall 2023

PHARMACY 621 – PHARMACOKINETICS

3 credits.

Introduction to pharmacokinetics. Fundamental principles and specific physical models are discussed. Absorption, distribution, metabolism, and excretion are thoroughly described including applications to pharmacotherapy mostly through a one body compartment model. Biopharmaceuticals and small molecule drugs are discussed based on their specific pharmacokinetics. All pharmacokinetics and pharmacodynamics principles and concepts are further described in depth in terms of their clinical applications with an emphasis on the role of the pharmacy professional.

Requisites: Declared in the Doctor of Pharmacy program

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Spring 2024

PHARMACY 630 – RURAL PHARMACY PRACTICE

2 credits.

Explore how public health intersects with healthcare delivery in rural settings through direct engagement with rural communities, practitioners, and themes in rural practice. Apply therapeutic knowledge to fulfill unmet community needs, and thereby enhance delivery of healthcare in rural communities. Create a pharmacy-driven service with the goal of enhancing healthcare delivery in a rural area based on a community assessment, exploration of contemporary rural health care trends, and discussion with current rural health practitioners.

Requisites: Declared in the Doctor of Pharmacy Program with third year standing

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Fall 2023

PHARMACY 632 – NEUROSCIENCE OF PSYCHEDELICS

3 credits.

Learn about psychiatric disorders and the profound effects of classical psychedelics on neural processes. Assess current hypotheses on their molecular actions and coupling to cellular, network, and behavioral effects, and how they might translate into therapeutic benefit. Explore the intersection of the actions of these agents with current models of the neural basis of perception, cognition, and consciousness.

Requisites: PSYCH/ZOOLOGY 523, PSYCH/NEURODPT/NTP 611 or PHARMACY 770. Not open to students with credit for NTP 632.

Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Advanced

L&S Credit - Counts as Liberal Arts and Science credit in L&S

Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Spring 2024

PHARMACY 640 – APPROPRIATE USE OF ABUSED DRUGS

2 credits.

Discusses the biological and pharmacological basis of dependence of substances of abuse. Teaches the skills required for best practices in prescribing agents of abuse. Drugs of abuse covered include opioids use for acute and chronic pain, in addition to other abused substances such as cannabinoids, psychedelics, amphetamines and related agents. Students will learn appropriate methods of therapeutic tapering and treatment of withdrawal, as well as the treatment of known and unknown agent overdose. Teaches skills in interpreting and responding to findings of urine drug tests and the prescription drug monitoring database.

Requisites: PHM SCI 521**Repeatable for Credit:** No**Last Taught:** Spring 2024**PHARMACY 645 – PHARMACEUTICAL BIOTECHNOLOGY AND PHARMACOGENOMICS**

2-3 credits.

Facilitates the understanding and application of the principles of pharmaceutical biotechnology and pharmacogenomics. The third, optional, elective credit, open only to Pharm.D. students, will consist of clinical case studies in biotechnology and pharmacogenomics, to apply theory to clinical pharmacy practice.

Requisites: PHM SCI 432 and Declared in the Doctor of Pharmacy program with third year standing**Repeatable for Credit:** No**Last Taught:** Fall 2023**PHARMACY 658 – SPECIALTY PHARMACY IN A MODERN HEALTHCARE SETTING**

2 credits.

Introduction to specialty pharmacy, a growing and important segment of the pharmaceutical marketplace. Importance of economic, business and management principles to develop, implement and evaluate specialty pharmacy services within health systems. Modern health system cases about implementation of specialty pharmacy services in clinic and in pharmacy departments to improve patient outcomes from specialty medications and increase volume of specialty medications dispensed.

Requisites: Declared in Doctor of Pharmacy program with third year standing**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement**Repeatable for Credit:** No**Last Taught:** Spring 2024**PHARMACY 671 – PSYCHEDELIC DRUGS IN SCIENCE AND SOCIETY**

2 credits.

Overview of the science behind therapeutic use of psychedelic drugs such as psilocybin and LSD; basic medicinal chemistry of the tryptamine and phenethylamine psychedelics, as well as the neurochemistry and neuropharmacology of their action. Fundamentals of drug development and FDA approval process; Standards of screening and guiding individuals before and during a therapeutic psychedelic session contrasted with the recreational use of these drugs; Appraisal of current clinical research including an objective analysis of risk/benefit for indications such as depression and addiction. History of traditional, ceremonial use of psychedelics, as well as the relationship between recreational use and attempts to regulate and restrict their use. Role of psychedelics in indigenous cultures, impacts of psychedelic tourism and wild-crafting of plants and animals on indigenous peoples. Contrasts in psychedelic treatments to other therapeutic interventions such as mindfulness and meditation.

Requisites: Declared in MS Pharmaceutical Sciences: Psychoactive Pharmaceutical Investigation or Capstone Certificate in Psychoactive Pharmaceutical Investigation**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement**Repeatable for Credit:** No**Last Taught:** Spring 2024**PHARMACY 674 – CANNABINOIDS IN SCIENCE AND SOCIETY**

2 credits.

Provides an overview of the history, botany, and legal policies of cannabis and examines cannabinoid pharmacology and the most common therapeutic applications. Assessment of cannabinoid therapy with an emphasis on evaluating the risks and benefits of cannabinoid therapy for these conditions, product and dose regimen selection, monitoring and titration.

Requisites: Graduate/professional standing or declared in Psychoactive Pharmaceutical Investigation Capstone Certificate**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement**Repeatable for Credit:** No**Last Taught:** Fall 2023**PHARMACY/NURSING/PHY ASST/PHY THER/PUBLHLTH 758 – INTERPROFESSIONAL PUBLIC HEALTH LEADERSHIP**

1 credit.

Build skills in collaboration, problem solving, and reflection to approach complex community-based public health problems contribute to becoming a public leader. Explore the six levels of public health leadership through the practices of current and past public health leaders, case studies, and personal experience.

Requisites: Graduate/professional standing**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement**Repeatable for Credit:** No**Last Taught:** Spring 2019

PHARMACY 770 – CNS DRUG DESIGNS, ACTIONS, AND APPLICATIONS I

2 credits.

Provides a foundational understanding of how chemical features can influence the biological activity of a molecule on molecular targets within the central nervous system (CNS), how alteration of signaling through these targets occurs and leads to physiologically relevant changes, and how major classes of pharmaceuticals acting on the central nervous system are applied in healthcare settings to improve patient outcomes. Integration between concepts arising at the chemical, molecular, cellular, systems, organism, and societal levels will be explored.

Requisites: Declared in MS Pharmaceutical Sciences

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Fall 2023

PHARMACY 771 – CNS DRUG DESIGNS, ACTIONS, AND APPLICATIONS II

2 credits.

Gain additional understanding of how chemical features can influence the biological activity of a molecule on molecular targets within the central nervous system, how alteration of signaling through these targets occurs and leads to physiologically relevant changes, and how major classes of pharmaceuticals acting on the central nervous system are applied in healthcare settings to improve patient outcomes. Integration between concepts arising at the chemical, molecular, cellular, systems, organism, and societal levels will be explored.

Requisites: PHARMACY 770

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Spring 2024

PHARMACY 800 – RESEARCH ETHICS: SCIENTIFIC INTEGRITY AND THE RESPONSIBLE CONDUCT OF RESEARCH

2 credits.

Familiarizes graduate students with basic ethical issues associated with biomedical science research, taught via a case study approach. Content structured to meet NIH and NSF requirements for Responsible Conduct of Research (RCR) training. Students declared in the Pharmacology and Toxicology undergraduate program may enroll via consent of instructor.

Requisites: Declared in the Pharmaceutical Sciences PhD, Social and Administrative Sciences in Pharmacy PhD, or in the Pharmacy Master's program

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Spring 2023

PHARMACY 801 – BIOETHICS AND SCIENTIFIC INTEGRITY

2 credits.

Explores basic ethical issues associated with biomedical science research, particularly as pertains to the development of drugs and emergent pharmaceutical therapies, such as psychoactive-assisted therapies.

Requisites: Declared in MS Pharmaceutical Sciences: Psychoactive Pharmaceutical Investigation or Capstone Certificate in Psychoactive Pharmaceutical Investigation

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Spring 2024