PHARMACY (PHAR)

PHAR 105. Introduction to Pharmacy. (1 Credit)
Offered at: OL

PHAR 301. Pharmacy Biochemistry. (4 Credits)
Phar 310 is a 4 credit, one-semester course covering how atoms and molecules interact to produce life processes. Topics include, but are not limited to, biological synthesis of macromolecules, the chemistry of biological molecules, protein structure and function, enzyme mechanisms and kinetics, carbohydrate and lipid metabolic processes, nucleic acid chemistry and protein synthesis, and common molecular processes such as replication, transcription and translation. A unit on cell biology covers major intracellular processes and molecular classes, biosignaling processes, and genetic and biochemical regulation. Pharmacy Biochemistry is limited to CUW School of Pharmacy students.
Prerequisite: None

Offered at: CUW

PHAR 312. Pharmacy Anat and Phys. (5 Credits)
This course will examine the structure and function of the human body. Exploration will begin at the level of individual molecules and progress through cells, tissues, organs, and organ systems, culminating in a view of the body as a whole. Along with PHAR 310 Pharmacy Biochemistry and PHAR 314 Pharmacy Immunology, Molecular Biology, and Microbiology, this course will provide the core knowledge in the biomedical sciences upon which future studies in the pharmaceutical sciences will be built.
Prerequisite: None

Offered at: CUW

PHAR 314. Pharmacy Microbiology. (4 Credits)
This course introduces the pharmacy student to the fundamentals of microbiology, immunology and molecular biology. This course is designed to provide information and conceptual approaches needed for understanding the characteristics and activities of bacteria, viruses, fungi, and parasites, as well as the immunological responses of the host, and the molecular mechanisms of transfer of genetic information and drug resistance within pathogenic microbes. The primary goal is to assist each student to (i) acquire and integrate the knowledge necessary to make scientifically based judgments concerning immune and microbial diseases, and (ii) apply new findings gained by personal observation or by informed reading of the current literature.
Prerequisite: None

PHAR 320. Pharmaceutics I. (2 Credits)
Theory of physiochemical principles, thermodynamics and kinetics applicable to pharmaceutical systems, states of matter, with emphasis on aqueous solution chemistry, including solubility, acid-base systems, buffer systems, complexation and protein binding, along with principles of diffusion, drug release and dissolution processes, bioavailability, and pharmaceutical kinetics are included.
Prerequisite: None

Offered at: CUW

PHAR 322. Pharmaceutics II. (4 Credits)
Building upon the content of Pharmaceutics I, this course expands the knowledge base within the domain of drug delivery. Pharmaceutical dosage forms are introduced, along with their rationale for delivering optimal therapeutic benefit. A survey of the various sites available for drug administration, anatomic, physiologic and pathophysiologic considerations of those sites, and drug product requirements are covered. Oral, pulmonary, ocular, otic, buccal, sublingual, inserted, dermal, specialty, innovative dosage forms and device/drug product combinations, ETC., are included. Students taking this course will develop competency in the principles upon which dosage forms act on or within the human body, thus fulfilling the University's core curriculum goal of scientific literacy. (Includes patient care skills teaching laboratory.)
Prerequisite: None

PHAR 330. Pharmacology I. (3 Credits)
This course introduces the pharmacy student to the fundamentals of pharmacology and toxicology with more comprehensive overviews of autonomic and CNS pharmacology. The theme of xenobiotics is used to keep an initial focus on the broad spectrum of pharmacologic and toxicologic properties of external compounds (drugs and toxins) that affect the nervous system. This first course of three Pharmacology/Medical Chemistry courses will emphasize target organ effects, dose/response, and disposition so that student can fully understand basic pharmacologic principles of drug and xenobiotic handling, neuropharmacology and drugs which act on the Central nervous System, and neurotoxicology related topics including: substance abuse and treatment; and poison control support of emergency medicine, public health and preventive medicine frameworks.
Prerequisite: None

PHAR 340. Pharmacy&Healthcare System. (3 Credits)
The course will cover the major concepts related to the structure and functioning of the U.S. health care system. Emphasis will be placed on analyzing issues associated with health care, personnel, and the organization of health care and its delivery, how it is financed and regulated. The course will also examine the provision of drugs and pharmacy services in the context of the health care enterprise.
Prerequisite: None

Offered at: CUW

PHAR 350. Pharmacotherapy I:Self Care. (2 Credits)
Pharmacotherapy I: Self-Care is the first of five courses in which you will learn about pharmacotherapy, which is the treatment of disease through the use of drugs. This course will discuss the pathophysiology, epidemiology, clinical presentation, and treatment of common, self-limiting conditions. This course also covers triage and referral skills and wellness interventions. This course will give you the tools to help patients to select appropriate over-the-counter medications and dietary supplements.
Prerequisite: None
PHAR 352. Pharmacy Calculations. (1 Credit)
Accurately performing pharmaceutical calculations is a critical component in providing patient care in every pharmacy practice environment. Consequently, pharmaceutical calculations are a vital part of any pharmacy curriculum. Although most pharmaceutical calculations are not rocket science, it is a topic that requires attention because it requires virtually flawless accuracy. Before students are able to become optimally proficient at performing pharmaceutical calculations, they must understand approaches to pharmaceutical calculations that help minimize error and maximize accuracy. Their pre-course perceptions of pharmaceutical calculations must also be openly addressed so that these perceptions do not hinder the students focus on pharmaceutical calculations.

Prerequisite: None

PHAR 370. Applied Patient Care I. (2 Credits)
Applied Patient Care I is the first of six integrated patient care skill development courses in the School of Pharmacy curriculum. It is a patient-centered course that uses simulated patient scenarios and case studies to build students’ foundational skills in drug information retrieval, patient interviewing, patient education, and critical thinking in the context of pharmacy’s multiple disciplines. (Includes patient care skills teaching laboratory.)

Prerequisite: None

Offered at: CUW

PHAR 372. Applied Patient Care II. (2 Credits)
Applied Patient Care II is the second of six integrated patient care skill development courses in the School of Pharmacy curriculum. It is a patient-centered course that uses simulated patient scenarios and case studies to build students’ foundational skills in drug information retrieval, patient assessment, care plan development, patient education, leadership, medication safety, patient use of medications and medical goods and critical thinking in the context of pharmacy’s multiple disciplines. (Includes patient care skills teaching laboratory.)

Prerequisite: None

PHAR 380. Intro Pharmacy Prac Exp I. (3 Credits)
During the first semester of Introductory Pharmacy Practice Experience (IPPE-1), students are exposed to the roles and responsibilities of the professionally oriented pharmacist and the importance of effective communication between pharmacists, patients, and other healthcare providers. Off campus experiences will include a minimum of 40 hours each in a community and hospital setting. Legal, ethical, and practice issues in pharmacy are discussed during classroom and experiential activities. (Includes 2 weeks of pharmacy practice site-based learning.)

Prerequisite: None

Offered at: CUW

PHAR 382. Intro Pharmacy Prac Exp II. (3 Credits)
During the second semester of Introductory Pharmacy Practice Experience (IPPE-2), students are exposed to the roles and responsibilities of the professionally oriented pharmacist and the importance of effective communication between pharmacists, patients, and other healthcare providers. Off campus experiences will include a minimum of 40 hours each in a community and hospital setting. Legal, ethical, and practice issues in pharmacy are discussed during classroom and experiential activities. (Includes 2 weeks of pharmacy practice site-based learning.)

Prerequisite: None

PHAR 424. Apl Pharmacokin/Therap Drg Monit. (3 Credits)
This course expands on previous teachings regarding absorption, distribution, metabolism and excretion (ADME) a.k.a. absorption, distribution, elimination (ADE). Students will need to draw on their previous coursework to understand the fundamentals of ADME/ADE and readily apply this knowledge. Further examination of pharmacokinetic (PK) models will assist students’ conceptual understanding of ADME/ADE. Using this conceptual framework, students will simultaneously develop and hone skills in PK dosing and therapeutic drug monitoring. Students should be prepared to not only acquire new knowledge but also readily apply their new and existing PK knowledge to optimize doses and solve complex PK dosing problems. To accomplish these tasks the course will move rapidly and students must contact instructors immediately with problems in keeping pace.

Prerequisite: None

Offered at: CUW

PHAR 426. Advan Pharmaceutical Prep. (2 Credits)
This course is a continuation of the nonsterile and sterile product preparation skill development from the Pharmaceutics II course and laboratory. Topics emphasized will include aseptic technique, incompatibilities, stability, cytotoxic preparations, and continued proficiency in common non-sterile preparations. (Includes patient care skills teaching laboratory.)

Prerequisite: None

Offered at: CUW

PHAR 432. Pharmacology/Medicinal Chem II. (4 Credits)
This course continues to expand the pharmacy student’s knowledge on the fundamentals of pharmacology and toxicology, re-emphasizing critical objectives with regard to drug Mechanism of Action, Absorption, Distribution, Metabolism, and Elimination. Extensive review of drug structure, receptor binding, and Medicinal Chemistry will be a focal point for the course. The Medicinal Chemistry sections of this course will emphasize drug structure as a determinant of receptor binding, receptor activation, and receptor antagonism. The logic of drug design will be presented, with a focus on how variations to chemical structure can lead to changes in drug efficacy, as well as altered toxicity and bioavailability.

Prerequisite: None

Offered at: CUW

PHAR 434. Pharm & Medicinal Chemistry III. (4 Credits)
This course continues to expand the pharmacy student’s knowledge on the fundamentals of pharmacology and toxicology, re-emphasizing critical objectives with regard to drug Mechanism of Action, Absorption, Distribution, Metabolism, and Elimination. Extensive review of drug structure, receptor binding, and Medicinal Chemistry will be a focal point for the course. The Medicinal Chemistry sections of this course will emphasize drug structure as a determinant of receptor binding, receptor activation, and receptor antagonism. The students will also continue their drag-drug interaction project from the previous semester.

Prerequisite: None
PHAR 442. Social and Behavioral Pharmacy. (2 Credits)
This course is a survey of topics in the social and behavioral sciences as applied to pharmacy. The goal of the course is to give students a better understanding of how social, psychological, and socio-cultural factors explain and relate to disease processes, patients and pharmacists' orientation to the health care system, and patient-pharmacist encounters. Topics covered include (but are not limited to) the relationship between the mind and the body, the nature and experience of chronic illness, mental illness, substance use, patient counseling and communication, pharmacist-physician interaction, medication adherence, and medication errors.
Prerequisite: None

PHAR 450. Pharmacotherapy II. (3 Credits)
This required course is the second of five courses in which students learn about pharmacotherapy. Phar 450 is designed to teach students the epidemiology, etiology, pathophysiology, clinical presentation, treatment options and evaluation of therapeutic outcomes of many renal, fluid and electrolyte, acid-base, and cardiovascular disorders. The course aims to develop pharmacists with the clinical knowledge, skills, and judgment to make clinical decisions based on sound therapeutic principles of drug and disease state management, treatment guidelines, and relevant individual patient factors. Ultimately the goal of this course is to empower students to be able to provide evidence based, safe, and appropriate medication use for patients with renal, fluid and electrolyte, acid-base, and cardiovascular disorders.
Prerequisite: None

Offered at: CUW

PHAR 452. Pharmacotherapy III. (4 Credits)
Pharmacotherapy III is the third of five courses in which students will learn about the treatment of diseases through the use of medications. The course focuses on the core content areas of infectious diseases, endocrine disorders, and inflammatory disorders. Students will develop the skills needed to make evidence-based, patient-specific medication use recommendations relative to the core content areas.
Prerequisite: None

PHAR 460. Medical Literature Eval I. (2 Credits)
is the first in a 2-course series focusing on the use of medical literature for patient care. This course will focus on the critical evaluation of primary literature, including principles of biomedical statistics, research design, literature evaluation, and application to patient care. Study designs taught and analyzed include case-control, cohort, randomized controlled trials, and survival analysis. Journal clubs and other active learning strategies allow students to apply evaluation concepts throughout the semester. 2 credits.
Prerequisite: None

Offered at: CUW

PHAR 462. Med Literature Evaluation II. (2 Credits)
is the second in a 2-course series focusing on the use of medical literature for patient care. This course will build upon primary literature evaluation skills gained in Medication Literature Evaluation I and the introduction to tertiary references, secondary databases, and evidence-based guidelines from previous courses. The course focuses on application of knowledge and skills in critiquing articles, leading journal clubs, and answering case-based drug information questions. Study designs from the previous course in the series are enhanced, and meta-analyses and non-inferiority studies are added. Principles and practice in evidence-based drug use decision making, medication shortages, and medication errors are also taught and applied. 2 credits.
Prerequisite: PHAR 460.

PHAR 470. Applied Patient Care III. (2 Credits)
Phar 470 Applied Patient Care III is the third of six integrated patient care skill development courses in the School of Pharmacy curriculum. It is a patient-centered course that uses simulated patient scenarios and case studies to build foundational skills in drug information retrieval, patient interviewing, patient education, and critical thinking in the context of multiple disciplines of pharmacy. The first two courses in this series focused on the specific direct patient care skills of gathering a medication list, providing patient education, conducting a comprehensive interview of a new patient, and providing a verbal care plan to a patient. Phar 470 continues to develop these skills by providing more opportunities to practice what has been learned using simulated patient and provider interactions. Students will learn new skills including follow-up assessments, physical assessment, and clinical documentation. The course will also continue to develop skills in drug information and health literacy while integrating with the didactic curriculum and the IPPE series. (Includes patient care skills teaching laboratory.)
Prerequisite: None

Offered at: CUW

PHAR 472. Applied Patient Care IV. (2 Credits)
Phar 472 Applied Patient Care IV is the fourth of six integrated patient care skill development courses in the School of Pharmacy curriculum. It is a patient-centered course that uses simulated patient scenarios and case studies to build foundational skills in drug information retrieval, patient interviewing, patient education, and critical thinking in the context of multiple disciplines of pharmacy. The first three courses in this series focused on the specific direct patient care skills of gathering a medication list, providing patient education, conducting a comprehensive interview of a new patient, providing a verbal care plan to a patient, completing a follow-up assessment, and documentation of patient encounters. These skills were taught and developed using material learned in the Pharmacotherapy series and self-care. Phar 472 continues to develop these skills by providing more opportunities to practice what has been learned using simulated patient and provider interactions. Phar 472 will also build upon these with more complicated patient cases and pharmacotherapy concepts. Students will learn new skills in provider communication and will have an opportunity to further develop documentation skills learned in Phar 470. The course will also continue to develop skills in drug information and health literacy while integrating with the didactic curriculum and the IPPE series. (Includes patient care skills teaching laboratory.)
Prerequisite: None

Offered at: CUW
PHAR 474. Servant Leadership. (2 Credits)
The servant leadership philosophy/perspective focuses the leader on the needs of others for their benefit and connects nicely with the ethos of our profession and the mission of Concordia University Wisconsin. Though servant leadership outcomes are covered longitudinally through our curriculum, this course will provide a central point of focus for introducing, advancing and evaluating concepts related to the servant leadership outcomes. The course will focus on leadership development and its relation to meeting the needs of others and advancing the profession of pharmacy. It is believed that the preceding learning goals cannot be accomplished via passive learning through an experience that is primarily restricted to a classroom. As a result, the course has been designed to engage students in self-discovery and reflection through a combination of structured and unstructured experiences taking place in the lecture hall, 'lab setting' and our community. This class will consist of three distinct, yet interrelated modules. Introduction to Servant Leadership in Pharmacy; Legislative Advocacy; Leading Change. (Includes patient care skills teaching laboratory.)

Prerequisite: None

PHAR 480. IPPE - 3. (2 Credits)
During the third semester of Introductory Pharmacy Practice Experience (IPPE-3), students continue to explore and experience the roles and responsibilities of the professionally oriented pharmacist and the importance of effective communication between pharmacists, patients, and other healthcare providers. Off campus experiences will include 40 hours each in a community and hospital setting. Legal, ethical and practice issues in pharmacy are discussed during classroom and experiential activities. (Includes 2 weeks of pharmacy practice site-based learning.)

Prerequisite: None

Offered at: CUW

PHAR 482. Intro Pharm Pract Exp:IPPE-4. (2 Credits)
During the fourth semester of Introductory Pharmacy Practice Experience (IPPE-4), students continue to explore and experience the roles and responsibilities of the professionally oriented pharmacist and the importance of effective communication between pharmacists, patients, and other healthcare providers. Off campus experiences will include 40 hours each in a community and hospital setting. Legal, ethical and practice issues in pharmacy, including professional development, are discussed during classroom and experiential activities. (Includes 2 weeks of pharmacy practice site-based learning.)

Prerequisite: None