

DOCTOR OF PHARMACY

The Concordia University Wisconsin School of Pharmacy curriculum is comprised of 148 credits hours of didactic courses and practice experiences in a four year period. The majority of the first three years consist of didactic courses offered on the Mequon campus. During this period the students also learn about the practice of pharmacy through introductory experiential education courses offered at professional sites. The fourth year consists of 7 or 8 advanced experiential rotations (6 weeks in length) which are held at various practice sites across the state/nation. Ten credit hours of didactic electives are required.

Students are admitted into the program as a group and progress through the curriculum as a cohort. The educational process follows the Standards and Guidelines set forth by the Accreditation Council on Pharmaceutical Education. For more information about our PharmD program, visit [cuw.edu/pharmacy](https://www.cuw.edu/pharmacy/) (<https://www.cuw.edu/pharmacy/>).

Mission Statement

The Concordia University Wisconsin School of Pharmacy is a Lutheran higher education community committed to the development of compassionate, knowledgeable and ethical pharmacists dedicated to providing exemplary patient care. This will be accomplished by providing a comprehensive pharmacy education that balances education, service and research. Our focus is to prepare pharmacy practitioners dedicated to advancing patient-centered pharmaceutical care through medication therapy management in Wisconsin and throughout the country, by working closely with patients and all other healthcare providers to address the physical, mental and spiritual needs of each patient.

Our curriculum, combined with a holistic approach to student development, promotes leadership skills and an enthusiasm for life-long learning through excellence in teaching, service and scholarship. We will produce graduates who will be servant-leaders in the pharmacy community and to Christ in the church and in the world.

Values

The values espoused by the Concordia University Wisconsin School of Pharmacy include honesty, civility, collaboration, tolerance, mutual respect, integrity, motivation to improve, lifelong learning and service to others.

Program Outcomes

Servant Leadership

Develop pharmacists committed to the service of their profession and communities and in possession of the leadership and interprofessional skills required to provide service regardless of the pharmacist's position or title.

SL1. The student will articulate the roles, responsibilities, and characteristics of leaders who are engaged in service to their organizations, communities, and profession.

SL2. The student will possess and articulate awareness of self as a leader through the discovery of their strengths and values.

SL3. The student will demonstrate a service orientation toward others by utilizing their talents, knowledge and skills to achieve the common good.

SL4. The student will demonstrate the ability to work in teams by utilizing the principles of combining individual strengths, team dynamics, and emotional intelligence.

SL5. The student will participate in leading change, within groups and organizations, aimed at accomplishing goals for the common good.

Biomedical Sciences

Develop pharmacists who have solid foundational and applicable knowledge of 1) how organisms function at system, organ, cellular, and molecular levels to maintain homeostasis and 2) how individual patient attributes and various disease states alter these functions.

BMS1. The student will explain the relationship between structure and function of body systems within healthy individuals.

BMS2. The student will explain the relationship between structure and function of body systems within the pathophysiologic or diseased state.

BMS3. The student will demonstrate knowledge of the molecular, genetic and cellular nature of biological processes .

BMS4. The student will explain the structure and action of commensal and pathogenic microbes in infectious pathophysiology.

BMS6. The student will demonstrate knowledge of immunologic processes including but not limited to: antigen/antibody interaction, active and passive immunity, allergic responses and acquired and innate immunity.

Drug Action

Develop pharmacists with a fundamental understanding of the discovery, development, structure, mechanism of action, ADME (absorption, distribution, metabolism, excretion), therapeutic function, and associated adverse effects/toxicity of clinically important therapeutic pharmacological agents.

DA1. The student will explain the strategies and process of developing new molecular entities.

DA2. The student will describe the relationships among drug structures, ADME, and mechanisms of action.

DA3. The student will identify drug class and predict therapeutic action and possible side effects based on mechanism of action, pharmacokinetic properties, and structure.

DA4. The student will compare and contrast the structures and mechanism of action of drug entities when considering drug selection, therapeutic intent, and side effect profiles for diverse patient populations.

Drug Delivery

Develop pharmacists who demonstrate the ability to analyze, select, evaluate, compound, and recommend products for patients based on 1) the physical and chemical properties of pharmaceutical products and 2) characteristics of absorption, distribution, metabolism, and elimination for individual patients and specific formulations.

DD1. The student will analyze a drug product's active and inactive ingredients to identify potential applications, warnings, and contraindications.

DD2. The student will select appropriate routes of administration, dosage forms, and drug delivery systems to optimize bioavailability and therapeutic efficacy and safety.

DD3. The student will evaluate physicochemical properties of drug substances that influence solubility, drug action, and stability to identify and select optimal pharmacotherapeutic agents.

DD4. The student will evaluate commercially available and extemporaneous drug products on the basis of their characteristic physical attributes to optimize drug product selection.

DD5. The student will prepare and compound extemporaneous preparations and sterile products, utilizing appropriate techniques, procedures and equipment related to drug preparation, compounding and quality assurance.

DD6. The student will recommend and provide appropriate packaging, storage, handling, administration, and disposal of medications.

Drug Information

Develop pharmacists who retrieve, assess, evaluate, interpret, apply, and communicate drug information for individual patients, healthcare providers, and patient populations to promote evidence based health care, appropriate medication use systems and resource management, and public health initiatives.

DI1. The student will demonstrate the ability to systematically retrieve drug information from multiple resources, including texts, journals, electronic databases, and patient records.

DI2. The student will assess the drug information to determine its validity and the appropriateness for the clinical situation and intended recipient.

DI3. The student will critique the scientific and clinical merit of drug information to make appropriate recommendations for individual patients and other members of the health care team.

DI4. The student will analyze drug information and explain it to individual patients and other health care providers in the context of medication use systems, or individual patients or populations.

DI5. The student will use a systematic and efficient process to identify the drug information needs of individual patients, patient populations, and other healthcare professionals, assess the available drug information, and use evidence-based medicine, guided by unique patient circumstances beliefs and attitudes, to make clinical decisions.

Social and Administrative Sciences

Develop pharmacists who demonstrate an ability to lead, manage, and practice in the profession in the context of health care delivery systems, incorporating legal and ethical obligations, values, unique patient attributes and public health issues.

SAS1. The student will differentiate between leadership and management, categorize different styles of leadership and management, and apply them to financial, personnel, and operations management.

SAS2. The student will identify, discuss, and critique the types of government roles and policies that influence the delivery of health care.

SAS3. The student will list and explain economic factors that play a role in health care delivery for the patient, the health care provider, and the public as a whole.

SAS4. The student will describe and apply the legal standard of care for the provision of pharmacy services in diverse professional settings.

SAS5. The student will list and define ethical principles and apply a process for analyzing an ethical situation to justify an appropriate course of action.

SAS6. The student will assess the patient's personal and social situation including beliefs, attitudes, and socioeconomic background and incorporate these factors in optimal patient care.

Therapeutics

Develop pharmacists with the clinical knowledge, skills, and judgment to provide patient care interprofessional cooperation. Clinical decisions are based on sound therapeutic principles of drug and disease state management, treatment guidelines, and relevant individual patient factors, with the goal of providing evidence based, safe, and appropriate medication use for patients.

TH1. The student will define and explain the terminology, lab findings, physical signs/symptoms, risk factors, and evidence-based clinical practice guidelines related to diseases and medical conditions.

TH2. The student will analyze and compare drug therapies for safe, effective, and convenient use, including therapeutic benefits, potential side effects, contraindications, appropriate dosing, administration, and duration of therapy.

TH3. The student will recommend the appropriate drug and non-drug therapies for treatment of diseases and medical conditions, including specific uses, indications, mechanisms of action, and drugs of choice.

TH4. The student will identify, interpret, and evaluate relevant individual patient factors including medical, genetic, social, cultural, and economic aspects to recognize actual or potential drug therapy problems.

TH5. The student will design a patient-centered, culturally sensitive care plan, including goals of treatment, appropriate drug and non-drug therapies, and monitoring parameters for safety and efficacy.

TH6. The student will describe the importance of wellness and disease prevention in patient care and design appropriate care plans to promote these elements using evidence-based clinical practice guidelines.

Communication

Develop pharmacists who, as individuals and in interprofessional collaboration with others, utilize effective verbal, non-verbal, and written communication skills to promote evidence-based, safe, and appropriate medication use to achieve optimal patient care.

COM1. The student will develop skills to be able to effectively retrieve information from and convey information to a variety of patients, family members, caregivers, health care professionals, and members of the general public.

COM2. The student will demonstrate professional, ethical, and compassionate communication skills, including active listening, and appropriate verbal, non-verbal, and written techniques.

COM3. The student will apply knowledge of culture, literacy level, age, gender, disability, and other pertinent patient factors to achieve sensitive, individualized communication, and in a manner that will be best comprehended by the intended audience.

COM4. The student will use appropriate tools to communicate information and recommendations clearly, accurately, concisely, and in a timely manner.

COM5. The student will demonstrate and verify the proper administration techniques for medications and devices within the scope of pharmacy practice.

COM6. The student will provide clear and accurate documentation of patient care activity to facilitate communication and collaboration among healthcare providers.

Required Curriculum

Code	Title	Hours
PHAR 310	Pharmacy Biochemistry	3
PHAR 312	Pharmacy Anatomy and Physiology	5
PHAR 314	Pharmacy Microbiology	4
PHAR 316	Cell and Molecular Fundamentals	1
PHAR 320	Pharmaceutics I	2
PHAR 322	Pharmaceutics II	4
PHAR 330	Pharmacology and Medicinal Chemistry I	3
PHAR 340	Pharmacy and the Health Care System	3
PHAR 350	Pharmacotherapy I: Self Care	2
PHAR 352	Pharmacy Calculations	1
PHAR 370	Applied Patient Care I	2
PHAR 372	Applied Patient Care II	2
PHAR 380	Introductory Pharmacy Practice Experience I	3
PHAR 382	Introductory Pharmacy Practice Experience II	3
PHAR 424	Applied Pharmacokinetics/Therapeutic Drug Monitoring	3
PHAR 426	Advanced Pharmaceutical Preparations	2
PHAR 432	Pharmacology & Medicinal Chemistry II	4
PHAR 434	Pharmacology & Medicinal Chemistry III	4
PHAR 442	Social and Behavioral Pharmacy	2
PHAR 450	Pharmacotherapy II	3
PHAR 452	Pharmacotherapy III	4
PHAR 460	Medical Literature Evaluation I	2
PHAR 462	Medical Literature Evaluation II	2
PHAR 470	Applied Patient Care III	2
PHAR 472	Applied Patient Care IV	2
PHAR 474	Servant Leadership and Public Health	2
PHAR 480	Introductory Pharmacy Practice Experience III	2
PHAR 482	Introductory Pharmacy Practice Experience IV	2
PHAR 540	Epidemiology and Pharmacoeconomics	2
PHAR 544	Patient Care Ethics	3
PHAR 546	Quality and Performance Management in Healthcare	3
PHAR 548	Pharmacy Law	2
PHAR 550	Pharmacotherapy IV	4
PHAR 552	Pharmacotherapy V	4
PHAR 570	Applied Patient Care V	2
PHAR 572	Applied Patient Care VI	2
PHAR 680	Community Pharmacy APPE	6
PHAR 682	Acute Care Medicine APPE	6
PHAR 684	Hospital-Health System Pharmacy / Advanced Pharmacy Practice Experience	6
PHAR 686	Ambulatory Care APPE	6

Elective APPEs (PHAR 688 and/or additional PHAR 680, 682, 684, 686) 18

Professional Electives (minimum 10 credits) 10

Total Hours 148

Elective Course Options (Minimum 10 elective credits required. Offerings subject to change.)

Code	Title	Hours
PHAR 511	Public Health Microbiology	2
PHAR 515	Veterinary Pharmacy Practice	1
PHAR 517	Global Pharmacy Experience - Spanish World of Pharmacy – Parts 1, 2, and 3	2
PHAR 519	Medication Use in Public and Population Health	2
PHAR 523	Pharmaceutical Biotechnology	2
PHAR 531	Clinical Toxicology	2
PHAR 535	Global Pharmacy Experience - Study of Culture and Medicinal Plants of the Amazon Rainforest	3
PHAR 537	Medicinal Natural Products	2
PHAR 539	Pharmacogenomics	2
PHAR 542	Poisonings Seminar	1
PHAR 547	Pharmacy and the Underserved	2
PHAR 549	Big Pharma: Markets & Culture	2
PHAR 551	Critical Care Pharmacy Practice	1
PHAR 553	Infectious Diseases Pharmacotherapy Seminar	1
PHAR 557	The Diabetes Experience	1
PHAR 559	Ambulatory Care Pharmacy Practice	2
PHAR 565	Oncology Practice Seminar	1
PHAR 566	Research Design, Methods, and Ethics	2
PHAR 567	Specialty Pharmacy	2
PHAR 569	Pharmaceutical Sciences Journal Club	1
PHAR 571	Geriatric Pharmacy	2
PHAR 575	Medical Spanish for Pharmacist	2
PHAR 579	Advanced Cardiology Topics	1
PHAR 581	Longitudinal Pharmacy Practice Experience and Project Management (IPPE-5)	4
PHAR 583	Introductory Pharmacy Practice Experience-6 (IPPE-6)	3
PHAR 591	Pediatric Pharmacology and Therapeutics	2
PHAR 597	Critical Care Pharmacy Practice Journal Club	1
PHAR 602	Pharm Special Topics - Project	1-4
PHAR 671	Clinical Pharmacy and Pharmacy Law Continuing Professional Development	2

(All PHAR courses are graduate level.)

PharmD Pathways

The School of Pharmacy (SOP) Pathways provide optional paths for students enrolled in the Doctor of Pharmacy curriculum to build their expertise within the pharmacy profession. The Pathways expand the breadth and depth of a pharmacy student's education to help them become pharmacy leaders, addressing the healthcare needs of today and tomorrow. The SOP currently offers Pathways with Pharmacy Administration, Pharmaceutical Sciences, Residency, and Underserved focuses. Students can choose to apply to one or more Pathways during the spring semester of their P2 year. Upon acceptance to the Pathway(s),

students will work with a SOP Pathways faculty coordinator to select on-campus coursework, experiential rotations, and projects to fulfill the Pathways requirement. Students who successfully complete a SOP Pathway will receive a designation on their transcript. Questions about the SOP Pathways may be directed to Dr. Melissa Theesfeld at melissa.theesfeld@cuw.edu.

PharmD/Master Dual Degrees

PharmD/MBA

Concordia University's PharmD/MBA dual degree provides students with the opportunity to earn both their Doctor of Pharmacy degree and their Masters in Business Administration degree in as little as four years. This dual degree develops students into the future leaders of pharmacy and health care, providing them with the clinical expertise, business leadership and management skills, and real-world application needed to excel in their vocation.

The PharmD/MBA dual degree requires a minimum of 169 credits for completion, with up to 15 of these 169 credits counting toward both degrees. Two MBA core courses (MBA 500 and MBA 519) are fulfilled by similar content courses in the PharmD required coursework. In addition, up to 9 credits of MBA concentration area elective coursework can be counted toward the 10 credits minimum of PharmD professional elective coursework. For students seeking internship within their MBA concentration area, in some instances these may be synergistic with elective experiential rotations in pharmacy administration. The credits that count toward both degrees allow the dual degree to be completed at both a time and tuition savings relative to taking the two degrees independently. A full description of required core and elective course options can be found in the program descriptions for the PharmD and the MBA in this catalog.

Admission to the PharmD/MBA program can occur either in the summer before the start of a student's PharmD coursework or after a student has begun their PharmD coursework. Completion of both the PharmD and MBA at the same time (as a dual degree) is possible in four years but is not required.

PharmD/MPH

Concordia University's PharmD/MPH dual degree program provides students with the opportunity to earn both their Doctor of Pharmacy (PharmD) degree and their Master of Public Health (MPH) degree in as little as four years. This dual degree program is offered through a partnership between CUW's School of Pharmacy and Concordia University Nebraska's (CUNE) online MPH program. As healthcare reform continues to be at the forefront of the healthcare industry, prevention-focused public health is projected to grow in demand and importance. Pharmacists can play a critical role in leading and changing this discussion. Through the PharmD/MPH dual degree program, our students will be prepared to resolve complex health issues and enhance the well-being of communities. This program allows students to focus on a medication safety & pharmacovigilance concentration to complement their passion for service and the desire to improve public health.

The PharmD/MPH dual degree requires both the usual 148 credits for the PharmD degree and the usual 39 credits for the MPH degree. However, 12 credits of MPH concentration courses could count toward the 10 credits minimum of PharmD professional elective coursework. This makes the total minimum credit load for the dual degree program 175. The credits that count toward both degrees allow the dual degree to be completed

at both a time and tuition savings relative to taking the two degrees independently.

Students must apply, be admitted, and accept admission to each professional (PharmD) and graduate (MPH) program and abide by all program requirements. Admission to the PharmD/MPH program can occur either in the summer before the start of a student's PharmD coursework or after a student has begun their PharmD coursework. Completion of both the PharmD and MPH at the same time (as a dual degree) is possible in four years but is not required. Students may complete the MPH after the PharmD degree is conferred depending on their preferred course of study.

A full description of required core and elective course for each degree can be found in their respective institution's catalogs.

PharmD/MSNPS

Concordia University's PharmD/MSNPS dual degree provides students with the opportunity to earn both their Doctor of Pharmacy degree and their Masters in Natural Product Sciences degree in as little as four years. Patients frequently use both pharmaceuticals and natural products in their pursuit of healthier lives. While pharmaceuticals are highly regulated and studied, many natural products are not regulated and the claims of effectiveness and safety made by their manufacturers are not always presented with reliable information. This dual degree develops students to be the future experts in both pharmaceuticals and natural products. Students learn how to find, synthesize, and apply reliable information on these products. These combined degrees provides future practitioners the tools to educate patients, providers, and their communities about the relationship and intersection of pharmaceuticals and natural products that patients use.

A full description of required core and elective course options can be found in the program descriptions for the PharmD and the MSNPS in this catalog.

Admission to the PharmD/MSNPS dual degree program can occur either in the summer before the start of a student's PharmD coursework or after a student has begun their PharmD coursework. Completion of both the PharmD and MSNPS at the same time (as a dual degree) is possible in four years but is not required.

Admission and Application Information

Individuals interested in learning more about the Doctor of Pharmacy program, including application and admissions processes, should contact the School of Pharmacy Office of Student Affairs. Current contact information can be found at <https://www.cuw.edu/academics/schools/pharmacy/admissions/index.html> (<https://www.cuw.edu/academics/schools/pharmacy/admissions/>) or alternatively at pharmacy@cuw.edu or 262-243-2747.