

Pharmacy

Department Information

- **Department Location:**
123 Sudro Hall
- **Department Phone:**
701-231-7456
- **Department Web Site:**
www.ndsu.edu/pharmacy/ (<http://www.ndsu.edu/pharmacy/>)
- **Credential Offered:**
B.S.; Pharm.D.
- **Official Program Curriculum:**
catalog.ndsu.edu/undergraduate/program-curriculum/pharmacy/ (<http://catalog.ndsu.edu/undergraduate/program-curriculum/pharmacy/>)

The pharmacist is one of the most accessible members of today's health care team. More than 200 million people—nearly two-thirds of our entire population—pass through America's pharmacies each week. At more than 50,000 locations, for most hours of the day, pharmacists are ready to serve the public and address their complete pharmaceutical care needs. The pharmacist traditionally has been the first source of advice and assistance for many health concerns. Today, pharmacists are assuming more responsibility in attempting to better meet the health care needs of society.

The Program

The North Dakota State University College of Health Professions, and its School of Pharmacy, houses one of more than 140 schools fully accredited by the Accreditation Council for Pharmacy Education (ACPE). The School of Pharmacy offers a six-year professional degree program leading to the Doctor of Pharmacy (Pharm.D.) along with three other Pharm.D. pathways. The School of Pharmacy is a member of the American Association of Colleges of Pharmacy.

Career Preparation

Pharmacists today are responsible for ensuring the rational, safe and cost-effective use of drugs. Pharmacist duties include: participating in the drug use decision-making process, establishing therapeutic goals for each patient, selecting the appropriate drug dosage form, selecting the drug product source of supply, determining the dose dosage schedule, preparing the drug product for patient use, providing the drug product and drug information to the patient, monitoring the patient to maximize compliance, monitoring the patient to detect adverse drug reactions and drug interactions, and monitoring the patient's progress to improve therapeutic outcomes.

Numerous drug therapy problems are recognized and corrected by pharmacists in their practices. Pharmacists work closely with the prescriber and patient to ensure proper and safe use of medications.

The current professional pharmacy curriculum fully integrates classroom and experiential learning. All pharmacy students participate in experiential learning (introductory or advanced pharmacy practice experiences) and in the Thrifty White Concept Pharmacy each year. The Thrifty White Concept Pharmacy Laboratory is a state-of-the-art model pharmacy in our new Aldevron Tower that allows students to experience all aspects of pharmacy practice in a real-life environment.

Career Opportunities

Employment of pharmacists within the region remains strong and is expected to grow at a steady pace over the next decade. There has been an increased demand for pharmaceutical services by the public as the population ages and as more potent, costly and high risk drugs enter the marketplace. Approximately 60 percent of pharmacists practice in community pharmacies with the remainder employed as hospital pharmacists, managed care specialists, home health care providers, nursing home consultants, research and product development scientists, and teachers in colleges and universities. According to the U.S. Department of Labor Bureau of Labor Statistics (<https://www.bls.gov/ooh/healthcare/pharmacists.htm>), the median salary in 2020 for pharmacists was \$128,710.

Selective Admission

NDSU's pharmacy program consists of two phases, a pre-pharmacy phase and a professional pharmacy phase. The professional program limits enrollment to 85 new students per class. Students may qualify for admission via one of four different paths.

Option 1: The Early Admission Pathway (https://www.ndsu.edu/pharmacy/degrees_and_programs/pharmacy_program/eap/)

The Early Admission Pathway (EAP) to NDSU's PharmD program is designed for academically qualified high school students who want an affordable, expedited path to a PharmD degree. If you are interested in EAP, you would apply during your senior year in high school.

Option 2: The Traditional Admissions Pathway (https://www.ndsu.edu/pharmacy/degrees_and_programs/pharmacy_program/traditional/)

The Traditional Admissions Pathway involves you entering the program as an undergraduate in pre-pharmacy upon meeting general admission standards of the university. Once all required pre-pharmacy coursework is satisfied, you can apply to the PharmD program. The pre-pharmacy course work may be completed at other institutions and NDSU reviews transfer records submitted and determine if equivalent to NDSU requirements.

You are admitted to the final four professional years on a competitive basis after meeting specific admission requirements of the college which can be found on the Traditional Pathway page (https://www.ndsu.edu/pharmacy/degrees_and_programs/pharmacy_program/traditional/). Students attending other institutions must maintain frequent contact with the college to determine appropriate course work.

The college is a member of the American Association of Colleges of Pharmacy, and is accredited by the Accreditation Council for Pharmacy Education (ACPE).

Option 3: The Post-Baccalaureate Pathway (https://www.ndsu.edu/pharmacy/degrees_and_programs/pharmacy_program/post_bac/)

Students who will hold a four-year bachelor degree in a health or STEM field on or before May 2021 are eligible to apply for admission to NDSU's PharmD program through a new, streamlined pathway. The pathway has fewer requirements because many of our admission requirements are implicitly met by students who have completed a bachelor degree in a health or STEM field. If an applicant holds a bachelor degree in a health or STEM field and is missing key pre-requisites, we offer a means to complete those courses in the summer before starting the PharmD program.

Note: the NDSU Pharmacy Program encourages applicants holding a four-year bachelor degree in an array of health or STEM fields, from any accredited college or university that offers four-year bachelor programs. Students who wish to pursue this pathway as an undergraduate major in the College of Health Professions may do so by completing the degree requirements for our Bachelor of Science in Health Services (https://www.ndsu.edu/healthprofessions/deg_prog/health_services/) program.

Option 4: Pharmacy Technician Pathway (https://www.ndsu.edu/pharmacy/degrees_and_programs/pharmacy_program/pharmtech_pharmd/)

Are you a pharmacy technician who is eligible for pharmacy technician licensure in North Dakota, and who is interested in becoming a pharmacist? If so, this new pathway is designed to provide you with a streamlined pathway to meet the NDSU Pharmacy Program's admission requirements. If you completed a pharmacy technician program at a college or university and received academic credit for your program, all of those credits will count towards meeting our admission requirements.

Differential Tuition

Students in the pharmacy professional program (i.e, the final five years of study for students on the **early admission path**, and the final four years for students on the **traditional admission path**) are assessed a different tuition rate. This differential tuition is assessed to cover the higher costs associated with the program.

Current Curriculum

The curriculum leading to the Pharm.D. degree requires a minimum of six years of study. Approximately 77 semester hours are required in the pre-professional curriculum. The vast majority of required pre-professional courses (listed by name and number) must be completed by the end of spring term prior to admission to the professional program for traditional path students, or for early admission students, the final four years of the professional program. A maximum of six elective credits may be taken during the summer prior to entrance in the professional program.

The four-year professional program is divided into three years of didactic education on campus and one year (40 weeks) of experiential training (advanced pharmacy practice experience) with qualified preceptors at various practice sites. Additional introductory experiential training occurs during the summer sessions following the first and second years of the professional program, as well as during the third professional academic year. A wide variety of experiential rotation offerings are available to students. Students should plan to travel outside the Fargo-Moorhead area to fulfill their experiential program requirements.

Our pharmacy program partners with PioneerRx (<http://www.pioneerrx.com/>), a pharmacy management system, to simulate the functions of today's pharmacies.

Sample Program Guide - Pre-Pharmacy

IMPORTANT DISCLAIMER: A Sample Program Guide provides an unofficial guide of program requirements and should be used by prospective students who are considering attending NDSU in the future. It is NOT an official curriculum and should NOT be used by current NDSU students for official degree planning purposes. Note that the official curriculum used by current NDSU students can vary from the Sample Program Guide due to a variety of factors such as, but not limited to, start year, education goals, transfer credit, and course availability.

To ensure proper program completion, enrolled students should utilize Degree Map (<https://www.ndsu.edu/registrar/degreemap/>) and Schedule Planner (<https://www.ndsu.edu/onestop/degree-map-and-planning/>) in Campus Connection and consult regularly with their academic advisor to ensure requirements are being met.

PRE-PHARMACY PROGRAM REQUIREMENTS*

*Plan follows most closely with EAP pathway plan, other pathways may differ slightly

First Year					
Fall	Credits	Spring	Credits	Summer	Credits
BIOL 150		3 BIOL 151		3 Gen Ed Humanities and Fine Arts	3
BIOL 150L		1 BIOL 151L		1	
CHEM 121		3 CHEM 122		3	
CHEM 121L		1 CHEM 122L		1	
ENGL 120		3 COMM 110		3	
MATH 146		4 ECON 201		3	
CHP 190		3 STAT 330		3	
		18		17	3
Second Year					
Fall	Credits	Spring	Credits		
PSCI 300		5 PSCI 301		5	
BIOL 220		3 BIOL 221		3	
BIOL 220L		1 BIOL 221L		1	
MICR 350		3 PHRM 324, ENGL 324, or ENGL 325		3	
MICR 350L		2 PHYS 211		3	
Gen Ed Social/Behavioral Sci and Cultural Diversity		3 Gen Ed Humanities and Fine Arts		3	
Wellness Gen Ed		2			
		19		18	

Total Credits: 75

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Code	Title	Credits
P1 First Year Professional		
MICR 470	Basic Immunology	3
PSCI 367	Pharmaceutical Calculations	1
PSCI 368	Pharmaceutics I	3
PSCI 369	Pharmaceutics II	2
PSCI 410	Pharmaceutical Biotechnology	2
PSCI 411	Principles of Pharmacokinetics and Pharmacodynamics	3
PSCI 412	Chemotherapeutic/Infectious Disease Pharmacodynamics	3
PSCI 470	Pharmacokinetics	3
PHRM 301	Top Drugs I	1
PHRM 340	Patient Assessment and Pathophysiology I	4
PHRM 341	Pathophysiology II	3
PHRM 351L	Pharmacy Practice Laboratory I	2
PHRM 353	Introduction to Pharmacy and the Health Care System	3
PHRM 455	Community Introductory Pharmacy Practice Experience	4
PHRM 480	Drug Literature Evaluation	3

P2 Second Year Professional

CHP 400	Interprofessional Health Care Practice	3
PSCI 413	Endocrine/Respiratory/GI Pharmacodynamics	3
PSCI 414	Cardiovascular Pharmacodynamics	3
PSCI 415	Neuropsychiatry Pharmacodynamics	3
PSCI 417	Pharmacogenomics	2
PHRM 355	Institutional Introductory Pharmacy Practice Experience	3
PHRM 400	Top Drugs II	1
PHRM 450	Self Care	3
PHRM 452L	Pharmacy Practice Laboratory II	2
PHRM 532	Infectious Disease	3
PHRM 534	Rheumatology/Endocrinology/Gastrointestinal	3
PHRM 535	Hematology and Oncology	3
PHRM 538	Cardiovascular and Pulmonary Diseases	4
PHRM 565	Pharmacy-Based Immunization Delivery	1

P3 Third Year Professional

PHRM 500	Top Drugs III	1
PHRM 520	Special Populations	3
PHRM 536	Neurology & Psychiatry Pharmacotherapy	3
PHRM 537	Renal Disease/Fluid and Electrolytes	2
PHRM 540	Public Health for Pharmacists	3
PHRM 545L	Pharmacotherapy Laboratory	1
PHRM 551L	Pharmacy Practice Laboratory III	2
PHRM 552L	Pharmacy Practice Laboratory IV	2
PHRM 560	Specialty Care Topics	2
PHRM 570	Pharmacy Practice Improvement and Project Management	2
PHRM 572	Pharmacy Law and Ethics	3
PHRM 575	Pharmacy Practice Management	3
PHRM 580	Pharmacotherapy Capstone	3

Professional Electives List of professional electives in handbook and in Blackboard PharmD Student Community. **6**

P4 Fourth Year Professional

PHRM 576	Essentials for Pharmacist Licensure I (Essentials for Pharmacist Licensure I)	1
PHRM 577	Essentials for Pharmacist Licensure II (Essentials for Pharmacist Licensure II)	2
PHRM 578	Essentials for Pharmacist Licensure III (Essentials for Pharmacist Licensure III)	2
Student will choose 8 out of 9 rotations for a total of 40 credits. Each rotation is 5 credits.		40
PHRM 581	Advanced Pharmacy Practice Experience - Rotation I	
PHRM 582	Advanced Pharmacy Practice Experience - Rotation II	
PHRM 583	Advanced Pharmacy Practice Experience - Rotation III	
PHRM 584	Advanced Pharmacy Practice Experience - Rotation 4	
PHRM 585	Advanced Pharmacy Practice Experience - Rotation 5	
PHRM 586	Advanced Pharmacy Practice Experience - Rotation 6	
PHRM 587	Advanced Pharmacy Practice Experience - Rotation 7	
PHRM 588	Advanced Pharmacy Practice Experience - Rotation 8	
PHRM 589	Advanced Pharmacy Practice Experience - Rotation 9	

Total Credits**158**