

Pharmacy

Department Information

- **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 Pharmacy program (PharmD) encompasses both the basic and clinical sciences and is designed to provide you with the knowledge, skills, and attitudes essential to the practice of pharmacy. Pharmacists work in concert with the patient and other health care providers to promote health and prevent diseases. This is achieved by assessing, monitoring, initiating and modifying patients' medication therapy to achieve optimal therapeutic outcomes.

The current entry-level PharmD curriculum is designed to give you the professional competencies necessary to enter pharmacy practice in any setting to ensure optimal medication therapy outcomes and patient safety, and to satisfy the educational requirements for licensure as a pharmacist.

The PharmD degree prepares you to accept positions in community, hospital, managed care, clinical, and industrial pharmacy. Other potential opportunities include administrative positions in pharmaceutical companies and associations. Also, teaching and research positions in universities and the pharmaceutical industry are excellent opportunities for those with advanced training in pharmacy.

There are four routes to pursue admission to NDSU's PharmD program.

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_pathway/)

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_pathway/). 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 2025 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.

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.

Pre-Pharmacy Traditional Pathway

All students interested in NDSU's Doctor of Pharmacy program must be accepted to study a major at NDSU. A formal NDSU application for admission must be submitted through the Office of Admission website (<https://www.ndsu.edu/admission/>) by all applicants, with exception of current or former NDSU students. Former students must apply for readmission to NDSU through the NDSU readmission page (https://www.ndsu.edu/admission/how_to_apply/readmission/).

In addition, students interested in pharmacy must apply to the professional pharmacy program. All applicants to the NDSU Doctor of Pharmacy program must apply using the through the link below.

A cumulative grade point average of 3.0 or higher is required before an applicant will be evaluated. Applicants who are NOT currently NDSU students must submit official transcripts of previous academic work to the University's Admissions Office and one set to the NDSU School of Pharmacy.

- PharmD Technical Standards. Students must meet ALL of these technical standards to be eligible for admission to the NDSU Doctor of Pharmacy program. Please reviews these standards before applying.

Sample Program Guide - Pre-Pharmacy Traditional Path

IMPORTANT DISCLAIMER: This guide is not an official curriculum. This guide is a sample four-year degree plan of how students might plan this major with other degree requirements to complete their education in four years. Student plans will vary from this sample due to a variety of factors, such as, but not limited to, start year, education goals, transfer credit, and course availability. To ensure proper degree 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 academic advisors to ensure graduation requirements are being met.

PRE-PHARMACY PROGRAM REQUIREMENTS

Plan follows most closely with Traditional 3-year pathway plan with allows room for a minor of study, other pathways may differ slightly

First Year			
Fall	Credits	Spring	Credits
BIOL 150*		3 BIOL 151*	3
BIOL 150L*		1 BIOL 151L*	1
CHEM 121*		3 CHEM 122*	3
CHEM 121L		1 CHEM 122L	1
ENGL 110		3 COMM 110*	3
MATH 146*		4 ECON 201*	3
PHRM 190		3 ENGL 120 ¹ *	3
		STAT 330*	3

Second Year			
Fall	Credits	Spring	Credits
BIOL 220*		3 BIOL 221	3
BIOL 220L*		1 BIOL 221L	1
CHEM 341		3 CHEM 342	3
CHEM 341L		1 PHYS 211	3
Gen Ed Social/Behavioral Sci and Cultural Diversity		3 Gen Ed Humanities and Fine Arts	3
Gen Humanities & Fine Arts		3 Credits Towards Minor ²	3
Wellness Gen Ed		2	
		16	16
Third Year			
Fall	Credits	Spring	Credits
BIOC 460		3 BIOC 461	3
MICR 350*		3 ENGL 324 or 325	3
MICR 350L*		2 Credits Towards a Minor ²	12
Credits towards Minor ²		9	
		17	18

Total Credits: 105

*

Selected core courses will be used for selection criteria to determine GPA in calculation for admission to the professional program.

1

Course can be taken fall semester if student tests out of ENGL 110

2

Minor not required but plan built to allow

Pre-Pharmacy EAP Pathway

The Early Admission Pathway (EAP) to NDSU's PharmD program is an early assurance program 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. Acceptance into the EAP programs means that you are conditionally accepted to the PharmD program. As long as you successfully complete all requirements to maintain your spot, we assure you a seat in the final four years of the PharmD program. Thus if you meet program requirements, it is a six-year path (saves up to 2 years of time in college). Sophomore EAP (P.5) students pay differential tuition and are considered professional-level students.

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PRE-PHARMACY EAP PROGRAM REQUIREMENTS

Plan follows most closely with EAP 2-year pathway plan, other pathways may differ slightly. Differential tuition applies to second year of coursework.

First Year					
Fall	Credits	Spring	Credits	Summer	Credits
BIOL 150		3 BIOL 151		3 Gen Humanities & Fine Arts ²	3
BIOL 150L		1 BIOL 151L		1	
CHEM 121		3 CHEM 122		3	
CHEM 121L		1 CHEM 122L		1	
ENGL 110		3 COMM 110		3	

MATH 146	4 ECON 201	3
PHRM 190	3 ENGL 120 ¹	3
	STAT 330	3
	18	20
		3

Second Year

Fall	Credits	Spring	Credits
BIOL 220		3 BIOL 221	3
BIOL 220L		1 BIOL 221L	1
MICR 350		3 PHRM 324	3
MICR 350L		2 PHYS 211	3
PSCI 300		5 PSCI 301	5
Gen Ed Social/Behavioral Sci and Cultural Diversity		3 Gen Ed Humanities and Fine Arts	3
Wellness Gen Ed		2	
	19		18

Total Credits: 78

1

Course can be taken fall semester if student tests out of ENGL 110

2

If not already taken or will take during another semester.

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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 360	Introduction to Drug Literature	1
PHRM 455	Community Introductory Pharmacy Practice Experience	4
PHRM 565	Pharmacy-Based Immunization Delivery	1
P2 Second Year Professional		
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 499	Interprofessional Education Course	1
PHRM 400	Top Drugs II	1
PHRM 450	Self Care	3
PHRM 480	Evidence Based Medicine	2
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
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 Ethical Considerations	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	1
PHRM 577	Essentials for Pharmacist Licensure II	2
PHRM 578	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**156**