

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.
- **Sample Program Guide:**
catalog.ndsu.edu/programs-study/undergraduate/pharmacy/ (<http://catalog.ndsu.edu/programs-study/undergraduate/pharmacy/>)

Major Requirements

Major: Pharmaceutical Sciences (Includes Pre-Pharmacy) Requirements

Degree Type: B.S.

Minimum Degree Credits to Graduate: 127-136

University General Education Requirements

Code	Title	Credits
Communication (C)		12
ENGL 110	College Composition I	
ENGL 120	College Composition II	
COMM 110	Fundamentals of Public Speaking	
Upper Division Writing [†]		
Quantitative Reasoning (R) [†]		3
Science and Technology (S) [†]		10
Humanities and Fine Arts (A) [†]		6
Social and Behavioral Sciences (B) [†]		6
Wellness (W) [†]		2
Cultural Diversity (D) ^{**†}		
Global Perspectives (G) ^{**†}		
Total Credits		39

* May be satisfied by completing courses in another General Education category.

† General education courses may be used to satisfy requirements for both general education and the major, minor, and program emphases, where applicable. Students should carefully review major requirements to determine if specific courses can also satisfy these general education categories.

- A list of university approved general education courses and administrative policies are available here (<http://catalog.ndsu.edu/past-bulletin-archive/2022-23/academic-policies/undergraduate-policies/general-education/#genedcoursestext>).

Pre-Pharmacy Requirements

DEGREE NOTES:

- Student admitted to the Pharm.D. program will earn a Bachelor of Science Degree with a major in Pharmaceutical Sciences with successful completion of all courses through the second year of the professional Pharm.D. program as well as undergraduate graduation requirements including general education.
- Selected Core Courses - see information below for grading and GPA information.

Code	Title	Credits
BIOL 150 & 150L	General Biology I and General Biology I Laboratory *	4

BIOL 151 & 151L	General Biology II and General Biology II Laboratory *	4
BIOL 220 & 220L	Human Anatomy and Physiology I and Human Anatomy and Physiology I Laboratory (May satisfy general education category S) *	4
BIOL 221 & 221L	Human Anatomy and Physiology II and Human Anatomy and Physiology II Laboratory (May satisfy general education category S)	4
CHEM 121 & 121L	General Chemistry I and General Chemistry I Laboratory (May satisfy general education category S) *	4
CHEM 122 & 122L	General Chemistry II and General Chemistry II Laboratory (May satisfy general education category S) *	4
CHP 190	Critical Thinking, Academic, and Professional Skills for the Health Professions	3
COMM 110	Fundamentals of Public Speaking *	3
COMM 216	Intercultural Communication (May satisfy general education category B and D) *	3
ECON 201	Principles of Microeconomics (May satisfy general education category B and G) *	3
ENGL 120	College Composition II *	3
MATH 146	Applied Calculus I (May satisfy general education category R) *	4
MICR 460	Microbial Pathogenesis	3
PHYS 211	College Physics I	3
STAT 330	Introductory Statistics (May satisfy general education category R) *	3
Biochemistry - select from below: ¹		5 or 6
BIOC 460 & BIOC 461	Foundations of Biochemistry and Molecular Biology I and Foundations of Biochemistry and Molecular Biology II	
PSCI 301	Biochemistry and Molecular Biology for Pharmacists (Limited to Early Admission Pathway (EAP) students)	
Organic Chemistry - select from below: ¹		5 or 7
CHEM 341 & 341L & CHEM 342	Organic Chemistry I and Organic Chemistry I Laboratory and Organic Chemistry II *	
PSCI 300	Pharmaceutical Organic Chemistry (Limited to Early Admission Pathway (EAP) students)	
Microbiology - select from below: *		3 or 5
MICR 202 & 202L	Introductory Microbiology and Introductory Microbiology Lab *	
MICR 350 & 350L	General Microbiology and General Microbiology Lab *	
Upper Division Writing - select from below ¹		3
ENGL 324 or ENGL 325	Writing in the Sciences (May satisfy general education category C) Writing in the Health Professions	
PHRM 324	Writing and Professionalization in Pharmacy (Limited to Early Admission Pathway (EAP) students)	
Professional Pharmacy P1 & P2 Years		72-76

¹ Curricular plan based on traditional admissions path or early acceptance path. Consult adviser for additional information.

Selected Core Courses

Selected core courses will be used for selection criteria to determine GPA used in calculation for admission to the professional program. These courses must show evidence of letter grade, or other means of demonstrating acceptable competency (i.e. AP – CEEB) and MUST be completed by the end of fall semester prior to the admissions deadline to apply to the pharmacy program. Remaining courses, which are required and listed in the pre-pharmacy curriculum, MUST be completed by the end of spring term. The only exception to this is that up to six credits of electives may be completed during the summer term.

Pre-Professional Pharmacy Requirements and Notes

- All courses listed for pre-pharmacy must be complete in order to apply for the professional program in the last spring semester in which prerequisite courses are taken.

Degree Requirements and Notes

- All required courses must be completed with a grade of 'C' or above.
- All students must maintain a semester GPA of 2.0 or above for each semester in the College. A student who fails to meet this standard for two successive or three non-successive semesters may be terminated from enrollment in the College of Health Professions.

Major Requirements

Major: Doctor of Pharmacy

Degree Type: Pharm.D.

Minimum Degree Credits to Graduate: 158

Professional Pharm.D. Requirements

The following professional Pharm.D. requirements that follow are subject to change per department. Students follow the curricula developed by the School of Pharmacy and any changes that occur while in the professional program will be communicated to the students by the School of Pharmacy. All courses must be completed with a grade of "C" or higher or "P" if a pass/fail course.

In addition to curriculum listed below, 6 credits of Professional Elective MUST be completed PRIOR to P4 year. Other changes to curriculum will be conveyed to students as they are approved.

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

Essentials for Pharmacist Licensure I-III		
PHRM 576	Adv Therapeutics	1
PHRM 577	Clinical Clerkship I	2
PHRM 578	Non-Prescription Medications	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**

- All applicants to the NDSU Doctor of Pharmacy program must apply using the PharmCAS admissions website. It is imperative that the NDSU Pharmacy supplemental application be completed and submitted to the NDSU School of Pharmacy by all persons wishing to be considered for acceptance into NDSU's Entry-Level Pharm.D. Program.
- The application deadline can be found on the School of P (<https://www.ndsu.edu/pharmacy/>)harmacy website (<https://www.ndsu.edu/pharmacy/>).
- PCAT: We do require the PCAT (<http://www.pearsonassessments.com/haiweb/Cultures/en-US/site/Community/PostSecondary/Products/pcat/pcathome.htm>) (Pharmacy College Admission Test). The College requires that students take either the PCAT in July, September, October or November 2022 for students applying for 2023. We will accept PCAT scores from exams taken back three years (July 2019 to November 2022).
- 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.
- Students not previously enrolled at NDSU must apply both to NDSU and to the School of Pharmacy within College of Health Professions. For an NDSU application (<https://www.ndsu.edu/apply/>), contact the Office of Admissions at 701-231-8643. For International students, contact the Office of International Programs at 701-231-7895.