

Pharmacy

Department Information

- **Department Location:**
Sudro Hall
- **Department Phone:**
701-231-7456
- **Department Web Site:**
www.ndsu.edu/pharmacy/
- **Degrees Offered:**
B.S.; Pharm.D.
- **Plan Of Study Sample:**
bulletin.ndsu.edu/programs-study/undergraduate/pharmacy/

Major Requirements

Major: Pharmaceutical Sciences (Includes Pre-Pharmacy) Requirements

Degree Type: B.S.

Required 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://bulletin.ndsu.edu/past-bulletin-archive/2018-19/academic-policies/undergraduate-policies/general-education/#genedcoursestext>).

Pharmaceutical Sciences Requirements (includes Pre-Pharmacy)

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.
- 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	General Chemistry I (May satisfy general education category S) *	3
CHEM 121L	General Chemistry I Laboratory (May satisfy general education category S)	1
CHEM 122	General Chemistry II (May satisfy general education category S) *	3
CHEM 122L	General Chemistry II Laboratory (May satisfy general education category S)	1
CHP 190	Critical Thinking and Academic Success	2
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 * ¹	3
MATH 146	Applied Calculus I (May satisfy general education category R) *	4
MICR 460	Pathogenic Microbiology	3
PHYS 211	College Physics I	3
PSCI 499	Biochemistry and Molecular Biology for Pharmacists (Admission to PharmD program required)	5
STAT 330	Introductory Statistics (May satisfy general education category R) *	3
Biochemistry - select from below ²		5 or 6
BIOC 460 & BIOC 461	Foundations of Biochemistry and Molecular Biology I and Foundations of Biochemistry and Molecular Biology II	
PSCI 499	Biochemistry and Molecular Biology for Pharmacists	
Organic Chemistry - select from below ²		5 or 7
CHEM 341 & 341L & CHEM 342	Organic Chemistry I and Organic Chemistry I Laboratory and Organic Chemistry II *	
PSCI 391	Seminar in Pharmaceutical Organic Chemistry	
Select one of the following: *		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 ²		3
ENGL 324 or ENGL 325	Writing in the Sciences (May satisfy general education category C) Writing in the Health Professions	
PHRM 324		
Professional Pharmacy P1 & P2 Years		72-76

¹ Students with composite ACT scores of 20 or lower must register for English 110 fall semester and take Engl 120 spring semester. Students who complete English 120 with a "C" or higher will receive credit for English 110 with a passing grade (P).

² 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 December 31 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.

Required Degree Credits to Graduate: 146

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 department and any changes that occur while in the professional program will be communicated to the student by the department.

In addition to curriculum listed below, 6 credits of Professional Elective MUST be completed PRIOR to P4 year.

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 340	Pathophysiology I	4
PHRM 341	Pathophysiology II	3
PHRM 350	Introduction to Pharmacy Practice	2
PHRM 351L	Pharmacy Practice Laboratory I	2
PHRM 352	Introduction to Health Care Systems	2
PHRM 355	Introductory Pharmacy Practice Experience I: Introduction to Institutional Pharmacy Practice	3
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 400	Top Drugs I	1
PHRM 450	Self Care	3
PHRM 452L	Pharmacy Practice Laboratory II	2
PHRM 455	Introductory Pharmacy Practice Experience II: Introduction to Community Pharmacy Practice	4
PHRM 532	Infectious Disease	3
PHRM 534	Rheumatology/Endocrinology/Gastrointestinal	3
PHRM 535	Hematology and Oncology	3
PHRM 538	PTDI: Cardiovascular and Pulmonary Diseases	4
PHRM 565	Pharmacy-Based Immunization Delivery	1
P3 Third Year Professional		
PHRM 475	Pharmacy Practice Management	3
PHRM 500	Top Drugs II	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	
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 580	Pharmacotherapy Capstone	3

P4 Fourth Year Professional

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

146

- To apply to the professional entry-level pharmacy program at NDSU, an application must be submitted on-line to the Dean's Office, Sudro 123, by December 31. A cumulative grade point average of 3.0 or above is required before an applicant will be evaluated. Online application should be available the first week of November.
- The deadline to apply to the pharmacy program is December 31, 2018.
- 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 2018 for students applying for 2019. We will accept PCAT scores from exams taken back three years (July 2015 to November 2018). If you are interested in taking a practice test, Test Prep Review is a free service of a nonprofit group of educators. Their website was created to provide free practice test questions for students in a variety of career situations. Their PCAT practice test, is located at PCAT Practice (http://www.testprepreview.com/pcat_practice.htm)
- 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, contact the Office of Admissions at 701-231-8643. For International students, contact the Office of International Programs at 701-231-7895.