Pharmacy Doctorate (Pharm.D.) Program

The Pharmacy program encompasses both the basic and clinical sciences and is designed to provide students 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 pharmacy curriculum consists of a four year professional program leading to the Pharm.D. degree. Students enter the program in pre-pharmacy upon meeting general admission standards of the university and must satisfy all required pre-pharmacy coursework prior to beginning the professional program. Students are admitted to the final four professional years on a competitive basis, and must meet specific admission requirements of the college. The program leads to a Doctor of Pharmacy degree (Pharm.D.). For admission requirements to the professional program, contact the Dean's Office of the college. Students attending other institutions must maintain frequent contact with the college to determine appropriate course work. The pre-pharmacy course work may be completed at other institutions if course work has been submitted for formal NDSU review and determined to be equivalent to NDSU requirements.

The current entry-level Pharm.D. curriculum is designed to produce graduates with 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 Pharm.D. degree prepares the student to accept positions in community, hospital, managed care, clinical, and industrial pharmacy. Other potential opportunities include administrative positions in pharmaceutical companies and associations. Teaching and research positions in universities and the pharmaceutical industry are excellent opportunities for those with advanced training in pharmacy.

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

Major: Pharmaceutical Sciences (includes the requirements for the pre-pharmacy program)

Degree Type: B.S.
Required Degree Credits to Graduate: 122+

General Education Requirements

First Year Experience (F):		
ABEN 189/AGRI 189/BUSN 189/HD&E 189/ME 189/NURS 189/PHRM 189/UNIV 189: Skills for Academic Success		1
Communication (C):		
COMM 110	Fundamentals of Public Speaking *	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II *	3
Upper Level Writing		3
Quantitative Reasoning (R): See Pre-Pharmacy Requirements		3
Science & Technology (S): See Pre-Pharmacy Requirements		10
Humanities & Fine Arts (A): Select from current general education list		6
Social & Behavioral Sciences (B): See Pre-Pharmacy Requirements		6
Wellness (W): Select from current general education list		2
Total Credits		**40**

Pharmaceutical Sciences Major Requirements

(Includes the requirements for the pre-pharmacy and credit from the P1 & P2 professional program)

General Education Requirements		40
Pre-Pharmacy Requirements Core		
BIOC 460	Foundations of Biochemistry and Molecular Biology I *	3
BIOC 461	Foundations of Biochemistry and Molecular Biology II	3
BIOL 150 & 150L	General Biology I and General Biology I Laboratory *	4
BIOL 220 & 220L	Human Anatomy and Physiology I and Human Anatomy and Physiology I Laboratory (both courses can be used in GE category S) *	4
BIOL 221 & 221L	Human Anatomy and Physiology II and Human Anatomy and Physiology II Laboratory (both courses can be used in GE category S)	4
CHEM 121 & 121L	General Chemistry I and General Chemistry I Laboratory (both courses can be used in GE category S)	4

CHEM 122 & 122L	General Chemistry II and General Chemistry II Laboratory (both courses can be used in GE category S)	4
CHEM 341 & 341L	Organic Chemistry I and Organic Chemistry I Laboratory *	4
CHEM 342	Organic Chemistry II *	3
COMM 216	Intercultural Communication (can be used a GE category B)	3
ENGL 324	Writing in the Sciences (either course can be used in GE category C for UDW)	3
or ENGL 325	Writing in the Health Professions	
ECON 201	Principles of Microeconomics (can be used as GE category B)	3
MATH 146	Applied Calculus I (can be used for GE category R)	4
MICR 202 & 202L	Introductory Microbiology and Introductory Microbiology Lab (all courses can be used in GE category S) *	3-5
or MICR 350 & 350L	General Microbiology and General Microbiology Lab	
MICR 460	Pathogenic Microbiology	3
PHYS 211	College Physics I	3
STAT 330	Introductory Statistics (can be used for GE category R) *	3
Professional Pharmacy P1 & P2 Years		69
Total Credits		**145-147**

* 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 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 pre-requisite 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 PNAS.

NOTE: Student admitted to the Pharm.D. program will earn a Bachelor of Science Degree with a major in Pharmaceutical Science with successful completion of all courses through the second year of the professional Pharm.D. program.

Major Requirements

Major: Doctor of Pharmacy

Degree Type: Pharm.D.
Required Degree Credits to Graduate: 142

Professional Pharm.D. Requirements

The following professional Pharm.D. requirements that follow arebe 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.

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	Pharmaceutics III:Pharmacokinetics	3

PHRM 340	Pathophysiology I	4
PHRM 341	Pathophysiology II	4
PHRM 350	Introduction to Pharmacy Practice	2
PHRM 351L	Pharmaceutical Care Laboratory I	2
PHRM 352	Introduction to Health Care Systems	2
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 450	Self Care	3
PHRM 452L	Pharmaceutical Care Laboratory II	2
PHRM 480	Drug Literature Evaluation	3
PHRM 532	Infectious Disease	3
PHRM 534	Rheumatology/Endocrinology/Gastrointestinal	3
PHRM 535	PTDI:Neoplastic Diseases	3
PHRM 538	PTDI: Cardiovascular and Pulmonary Diseases	4
PNAS 400	Interprofessional Health Care Practice	3
P3 Third Year Professional		
PHRM 475	Pharmacy Practice Management	3
PHRM 520	Special Populations	3
PHRM 536	Neurology & Psychiatry	3
PHRM 537	Renal Disease/Fluid and Electrolytes	3
PHRM 540	Public Health for Pharmacists	3
PHRM 551L	Pharmaceutical Care Laboratory III	2
PHRM 552L	Pharmaceutical Care Laboratory IV/Introductory Pharmacy Practice Experience IV	2
PHRM 555	Introductory Pharmacy Practice Experience III	1
PHRM 560	Specialty Care Topics	2
PHRM 570	Pharmacy Practice Improvement and Project Management	3
PHRM 572	Pharmacy Law	2
PHRM 580	Pharmacotherapy Capstone	3
P4 Fourth Year Professional		
PHRM 581	Advanced Pharmacy Practice Experience I	10
PHRM 582	Advanced Pharmacy Practice Experience II	15
PHRM 583	Advanced Pharmacy Practice Experience III	15
Total Credits		**139**

- 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, 2015.
- 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 2015 for students applying for 2016. We will accept PCAT scores from exams taken back three years (July 2012 to November 2015). 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.