

NDSU NORTH DAKOTA
STATE UNIVERSITY

STUDENT FOCUSED • LAND GRANT • RESEARCH UNIVERSITY

What is a Pharmacist?

- A pharmacist is a drug therapy expert who works with physicians, dentists and veterinarians to help ensure the effective, safe, and cost-effective use of medications for patients.
- Some pharmacists may also specialize in disease state management, pharmaceutical research, education, or in marketing and sales of particular medications for a company.
- Many in this field work in hospitals, clinics, nursing homes, or community pharmacy settings taking care of the medication needs of patients.
- They are specialists in their knowledge of medications, their appropriate use, and must always be furthering their education in this area since new medications are developed all the time.

Admission to the Pharm.D. Program

- There are four routes for students to pursue admission to NDSU's Pharm.D. program.
- Option 1: The Early Admission Pathway
- Option 2: The Traditional Admissions Pathway
- Option 3: The Post-Baccalaureate Pathway
- Option 4: The Pharmacy Technician Pathway

Early Admission Pathway (EAP) to NDSU's Pharm.D. Program

- **An early assurance program designed for academically qualified high school students who want an affordable, expedited path to a Pharm.D. degree**
- **Apply during your senior year in high school**
- **Conditionally accepted to the Pharm.D. program**
 - **As long as you meet the requirements, we assure that you have a seat in our professional P1 cohort**
 - **You must complete all requirements to maintain your spot**
- **If you meet program requirements, it is 6 year path (saves up to 2 years of time in college)**

Early Admission Pathway (EAP) to NDSU's Pharm.D. Program

- **The curriculum is challenging, but progressive and designed specifically to ensure that you are trained well for NDSU's Pharm.D. program**
- **First year, standard undergraduate, pre-professional courses**
 - **Pay standard undergraduate tuition**
- **Second year, start transition into the professional Pharm.D. program as you complete your pre-professional requirements**
 - **Pay differential pharmacy tuition**
- **Next 4 years: Traditional Pharm.D. program**
 - **Pay differential pharmacy tuition.**

Early Admission Pathway (EAP) Two Year Pre-Pharmacy Curriculum

NDSU ENTRY-LEVEL PHARM. PROGRAM Early Admission Pathway Pre-Pharmacy Curriculum

Two Year Track (4 Semesters)

FIRST YEAR (43 credits)			
FALL	Cr	SPRING	Cr
Biol 150/150L, General Biology I/Lab *	3/1	Biol 151/151L, General Biology II/Lab *	3/1
Chem 121, General Chemistry I *	3	Chem 122, General Chemistry II *	3
Chem 121L, General Chemistry I Lab	1	Chem 122L, General Chemistry II Lab	1
English 120, Comp II ¹	3	Comm 110, Fundamentals *	3
Math 146, Applied Calculus I *	4	Econ 201, Microeconomics *	3
CHP 190, Critical Thinking	2	Stat 330, Introductory Statistics *	3
	17		17

SUMMER SESSION – PCAT Exam
If necessary, Humanities and Fine Arts, 6 Credits

¹ Students who complete English 120 with a "C" or higher will receive credit for English 110 with a passing grade (P).

SECOND YEAR (35 credits)			
FALL	Cr	SPRING	Cr
PSCI 300, Pharmaceutical Organic Chemistry	5	PSCI 301, Biochemistry and Molecular Biology for Pharmacists	5
Biol 220/220L, Human Anat & Physio I *	3/1	Biol 221/221L, Human Anat & Physio II	3/1
Comm 216, Intercultural Comm *	3	PHRM 324, Professionalism in Pharmacy (with Pharmacy Interviews)	3
Micr 202/202L or 350/350L ^φ	2/1	Micr 460, Pathogenic Microbiology	3
Wellness	2	Phys 211, College Physics I	3
	17		18

^φ Students who complete Microbiology 350 and 350L take an additional two credits of coursework. These students would then complete 19 credits during this semester.

(ALL courses must be completed with at least a grade of "C.")

Admission to the EAP - Pharm.D. Program

➤ High School Performance

- ACT/SAT composite scores (Primary Criterion)

Note: if you did not take the ACT, we may substitute another standardized test as long as it was completed in your sophomore, junior, or senior years in high school.

- Sub-section scores (Secondary Criterion)
- High School GPA (Secondary Criterion)

Admission to the EAP - Pharm.D. Program

- **Competitive applicants have ACT/SAT (or other standardized test) composite scores in the top 25% nationally and high school GPAs of 3.50 or higher**
- **55-65 students will be accepted into this program annually**

Admission to the EAP - Pharm.D. Program

- **Once accepted, students must:**
- **Complete all required classes with grades of “C” or higher**
- **Keep a cumulative GPA above 3.00 (most students have GPAs above 3.40)**
- **Complete the PCAT at the end of your first year of college with a minimum score threshold**
- **Complete all Interview Day activities with minimum scores**

Admission to the Traditional Admission Pathway to the Pharm.D. Program

- **Each year, the Pharmacy Admissions Committee will accept approximately 10-15 students through a traditional pathway.**
- **Beneficial for students**
 - **with certain family financial situations**
 - **who switch from other majors on campus to pharmacy**
 - **who want to earn a minor or study abroad**
- **Three years of traditional, pre-professional coursework**
 - **Standard undergraduate tuition, take standard undergraduate courses instead of unique EAP courses.**

Traditional Admission Pathway Three Year Pre-Pharmacy Curriculum

NDSU ENTRY-LEVEL PHARM.D. PROGRAM Pre-Pharmacy Curriculum 2018-2019

Three year track. Allows room for a minor of study. (6 Semesters; 104 credits which includes 3 cr. for Engl 110)

FIRST YEAR (33 credits)			
FALL	Cr	SPRING	Cr
Biol 150/150L, General Biology I/Lab *	3/1	Biol 151/151L, General Biology II/Lab *	3/1
Chem 121, General Chemistry I *	3	Chem 122, General Chemistry II *	3
Chem 121L, General Chemistry I Lab	1	Chem 122L, General Chemistry II Lab	1
English 120, Comp II ¹	3	Comm 110, Fundamentals *	3
Math 146, Applied Calculus I *	4	Elective – Humanities & Fine Arts	3
CHP 190, Critical Thinking & Academic Success	2	Wellness	2
	17		16

¹ Students with composite ACT scores of 20 or lower must register for English 100 and 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).

SECOND YEAR (33 credits)			
FALL	Cr	SPRING	Cr
Biol 220/220L, Human Anat & Physio I *	3/1	Biol 221/221L, Human Anat & Physio II	3/1
Chem 341, Organic Chemistry I *	3	Chem 342, Organic Chemistry II	3
Chem 341L, Organic Chemistry I Lab	1	Econ 201, Microeconomics *	3
Comm 216, Intercultural Comm *	3	Phys 211, College Physics I	3
Elective – Humanities & Fine Arts	3	Credits towards Minor	3
Credits towards Minor	3		
	17		16

THIRD YEAR (35 credits)			
FALL	Cr	SPRING	Cr
Bloc 460, Biochemistry I	3	Bloc 461, Biochemistry II	3
Micr 350/350L or 202/202L *	3/2	Engl 324 or 325, Upper Division English	3
Stat 330, Introductory Statistics *	3	Micr 460, Pathogenic Microbiology	3
Credits towards Minor	6	Credits towards Minor	9
	17		18

*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.

(ALL courses must be completed with at least a grade of "C.")

Admission to the Traditional Admission Pathway to the Pharm.D. Program

- **Apply during the third undergraduate year**
- **Selected Grade Point Average (GPA)** in college-level, core courses (minimum is 3.0)
- **PCAT**
- **Interview Day Activities**

Admission to the Traditional Admission Pathway to the Pharm.D. Program

- Average GPA in select Pre-Pharmacy courses (approximately 3.65 for traditional pathway applicants)
- PCAT composite percentile (approximately the 65th percentile for traditional pathway applicants)
- Interview
(up to 50 qualified applicants will be selected for interviews each year)

Admission to the Traditional Admission Pathway to the Pharm.D. Program

- Admission applications are available on-line through Pharm-CAS by November 1 each year.
- PharmCAS fees apply
- Additional application fee for the Pharm.D. program is \$125.



Post-Baccalaureate Admissions Pathway

- This path is designed for students pursuing a four-year bachelor degree in a health or STEM-related field, who discover as a junior or a senior that they want to attend pharmacy school after they graduate with their bachelor degree.
- The pathway has fewer explicit requirements because many of our admission requirements are implicitly met by students who have completed a bachelor degree in a health or STEM field.

Admission to the Post-Baccalaureate Pathway

- The applicant must provide official transcripts demonstrating that they will hold a four-year bachelor degree in a health or STEM field by the end of the spring semester in which they apply to the NDSU Pharm.D. program.
- The student must have completed the PCAT exam by April of the year in which they aspire to enter NDSU's P1 cohort.
 - The PCAT now offers multiple testing dates each year, and Post-Baccalaureate Pathway students may complete the PCAT in either the spring or fall testing dates.
 - The MCAT may be substituted for the PCAT

Admission to the Post-Baccalaureate Pathway

- The applicant must complete the following courses before May 30 of the year in which they aspire to enter NDSU's P1 cohort:
 - General Biology (3 credits)
 - Human Anatomy and Physiology with or without Laboratories (6-8 credits)
 - General Chemistry with Laboratories (8 credits)
 - Public Speaking (3 credits)

Admission to the Post-Baccalaureate Pathway

- Applicants are evaluated for admission using the same criteria, with the following adjustments:
- Cumulative GPA is used in place of Core GPA
- Relative to other applicants in this track, preference is given to students who have previous coursework in the following:
 - organic chemistry
 - biochemistry
 - physics
 - calculus

Admission to the Post-Baccalaureate Pathway

- Students must complete a provisional phase in their education. During the summer before transition into the P1 cohort takes place, students must successfully complete the following courses with grades of C or higher:
 - PSCI 300 (5 credits), Offered during the Summer 1 session
 - PSCI 301 (5 credits), Offered during the Summer 2 session
 - PSCI 499 (4 credits), Essentials of Mathematics and Physics for Pharmacists, Offered during the 12 week summer session.

Admission to the Post-Baccalaureate Pathway

- Students are considered professional students and differential tuition is assessed.
- These courses may be waived only if the student has completed all of the traditional coursework associated with the admission process.
- The maximum number of post-baccalaureate students admitted will be 85 minus the number of EAP students matriculating into a P1 cohort.

Pharmacy Technician Pathway

- The Pharmacy Technician Pathway is an extension of our Post-Baccalaureate Pathway, but is specifically tailored to the academic credentials and prior professional experiences of pharmacy technicians who are licensed, or eligible for licensure, in North Dakota.
- To be eligible for this pathway, students must be licensed, or be eligible for licensure, as a pharmacy technician in the state of North Dakota. This includes:
 - Graduation from an American Society of Health-System Pharmacists (ASHP) accredited pharmacy technician program
 - Currently certified as a pharmacy technician by a national certifying body approved by the North Dakota Board of Pharmacy
 - Please contact the North Dakota Board of Pharmacy for information about the process of becoming eligible for licensure as a pharmacy technician.

Pharmacy Technician Pathway

- Pharmacy technicians will enroll in NDSU's [Bachelor of Science in Health Services](#) program. This is a flexible degree program in that it makes maximum use of previously earned academic credit and emphasizes experiential education.
 - If a student completed their ASHP-accredited program at an accredited college or university, and received academic credit, those credits count towards the completion of the degree.
 - Pharmacy technicians who completed an employer-sponsored, ASHP-accredited pharmacy technician program may or may not have received academic credit.
 - Prospective pharmacy technicians who are planning to pursue employer-sponsored pharmacy technician training and use this Pathway are strongly encouraged to contact the NDSU PharmD program prior to beginning your pharmacy technician training to increase the likelihood that you receive academic credit for this training.

Pharmacy Technician Pathway

- As a part of their [Bachelor of Science in Health Services](#) program requirements, students fulfill all Post-Baccalaureate Pathway admission requirements.
- Students must complete the following with grades of “C” or higher:
 - All general education requirements
 - General Biology (3 credits)
 - Human Anatomy and Physiology with Laboratories (8 credits)
 - General Chemistry with or without Laboratories (6-8 credits)
 - Public Speaking (3 credits)

Pharmacy Technician Pathway

- As a part of their [Bachelor of Science in Health Services](#) program requirements, students fulfill all Post-Baccalaureate Pathway admission requirements.

- To the extent that the student's schedule and degree plan allow, students should attempt to complete some or all of the following courses:
 - Organic Chemistry (up to 7 credits)
 - Biochemistry and Molecular Biology (up to 6 credits)
 - Physics (3 credits)
 - Calculus (4 credits)
 - Microbiology (up to 8 credits)

Pharmacy Technician Pathway Admissions Process

- As a part of their [Bachelor of Science in Health Services](#) program requirements, students fulfill all Post-Baccalaureate Pathway admission requirements.
- Pharmacy Technician Pathway students may apply to the PharmD program during their senior year of studies using the same requirements, process, and timeline as the Traditional Pathway applicants.
- Thus, students should plan to take the PCAT exam during their senior year of study and apply through PharmCAS.

Pharmacy Technician Pathway

- The overall value of this pathway for pharmacy technicians:
- If you have academic credit, it all counts towards the degree and admission. This means you complete a bachelor degree faster than normal.
 - If you completed an Associate Degree-based pharmacy technician program, it takes as little as 1.5-2 years, depending on credit loads.

Pharmacy Technician Pathway

- The overall value of this pathway for pharmacy technicians:
- It builds experiential work in a pharmacy into your bachelor degree plan substantially more than other majors.
- It gives flexibility about how quickly you complete the degree, and how many science based credits you want to complete each semester.

Final Four Years to the Pharm.D.

- Upon acceptance, students complete four years of courses professional program (at least 110 credits):
 - Year 1: pathophysiology, pharmaceuticals and kinetics
 - Year 2: drug dynamics/pharmaceutical care
 - Year 3: drug dynamics/pharmaceutical care, pharmacy management, public health pharmacy, practice improvement, and complex patient care
 - Year 4: advanced pharmacy practice rotations, or APPE (40 weeks, 8 rotations).
- Students are exposed to actual pharmacy practice each year of the professional program curriculum, the concept laboratory courses and IPPE/APPE rotations.

Demand for Graduates

- Employment rate for graduates (within a few weeks of graduation) for students in the College average 92% according, to the 2014 employment report by the NDSU Career Center (<http://www.ndsu.edu/fileadmin/career/2014annualreport.pdf>).
- U.S. Department of Labor's Bureau of Labor Statistics job opportunities in pharmacy are expected to **grow faster than average**.
- *Average Salary: \$121,510
 - Salaries will vary depending on whether you practice in a clinical setting, a community setting, a rural community or an urban community.

* U.S. Bureau of Labor Statistics, May 2019 National Occupational Employment and Wage Estimates; http://www.bls.gov/oes/current/oes_nat.htm#29-0000. All estimates use annual mean wages.

Costs of Education

- NDSU remains one of the most affordable places to earn a Pharm.D. degree. For the traditional academic year:
 - In-State Undergraduate Tuition: \$8,606
 - In-State Differential Pharmacy Tuition: \$17,404
 - Applies to any year students are assessed differential tuition.
 - Tuition for MN residents is only slightly higher than in-state
- Compare to the University of Minnesota-Twin Cities for a traditional academic year:
 - In-State Undergraduate Tuition: \$13,318
 - In-State Differential Pharmacy Tuition for years 1-3: \$27,864
 - In-State Differential Pharmacy Tuition for the final year: \$41,796

Sources: <https://www.pharmacy.umn.edu/degrees-and-programs/doctor-pharmacy/admissions/costs-aid>

Costs of Education

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 - In-State Differential Pharmacy Tuition: \$17,404
 - Applies to any year students are assessed differential tuition.
 - Tuition for MN residents is only slightly higher than in-state
- Compare to the University of South Dakota State University for a traditional academic year:
 - In-State Undergraduate Tuition: \$7,697
 - In-State Pharmacy Tuition/Program Fees for years 1-3: \$18,281
 - In-State Pharmacy Tuition/Program Fee for the final year: \$27,423

How to Apply

- For Early Admission Pathway (EAP) applicants, apply to study as an undergraduate at NDSU.
 - See: <https://www.ndsu.edu/admission/apply>
 - Complete NDSU's EAP application as a senior in high school.

The link to the application is:

https://ndstate.co1.qualtrics.com/jfe/form/SV_eCE5qqZdujYIS0t

How to Apply

- For applicants on the **Traditional Pathway**, simply apply to study as an undergraduate at NDSU and declare a “pre-pharmacy” major.
 - See: <https://www.ndsu.edu/admission/apply>
 - Complete PharmCAS application your junior year in college
- For applicants on the **Pharmacy Technician Pathway**, or **transfer students who don't hold a four-year bachelor degree, but want to pursue the Post-Baccalaureate Pathway** when they earn their bachelor degree, simply apply to study as an undergraduate at NDSU and declare a Health Services major.
 - See: <https://www.ndsu.edu/admission/apply>
 - Complete PharmCAS application your senior year in college

How to Apply

- For applicants who already hold a four year bachelor degree in a health or STEM related field, simply apply to study as an undergraduate at NDSU as a “pre-pharmacy” major.
 - See: <https://www.ndsu.edu/admission/apply>
 - Complete PharmCAS application immediately.