

College of Pharmacy

Sudro Hall 123 (701) 231-7456

Charles D. Peterson, Dean

The College of Pharmacy at North Dakota State University has provided an education for men and women in pharmacy and the pharmaceutical sciences since 1902. The most recent change was in the fall of 1990 when a six-year entry-level Doctor of Pharmacy (Pharm.D.) program was implemented.

The college introduced an associate degree nursing program in 1969, which was discontinued in 1987. In 1986, the college initiated a cooperative four-year baccalaureate degree program in nursing with Concordia College.

Degree Programs

The College of Pharmacy offers academic programs in pharmacy and nursing. Admission requirements, curricula, and degree titles differ for the programs.

The pharmacy curriculum consists of a six-year professional program leading to the Pharm.D. degree. Graduates are qualified to apply for licensure as pharmacists. In addition, a two-year post-baccalaureate Pharm.D. program is available through the college, as well as a nontraditional program offered in cooperation with the University of Colorado.

The baccalaureate nursing program is a four year course of study leading to a Bachelor of Science in Nursing (BSN) degree. Graduates are eligible to apply for admission to take the national licensing examination (NCLEX) to become a registered nurse (RN). A graduate program leading to a Master of Science in Nursing (MS) also is available. Both programs are cooperative programs within the Tri-College University.

Academic and Professional Requirements

All students must complete all required courses with a grade of C or above. Further, transfer credits with grades of D are not accepted for program requirements. All students must maintain a semester GPA of 2.0 or above for each semester in the College of Pharmacy. A student who fails to meet this standard for two successive or three non-successive semesters shall be terminated from enrollment in the College of Pharmacy.

The faculty of the College of Pharmacy reserves the right to terminate the registration of any student at any time if, in the opinion of the faculty, the student demonstrates that he or she is unsuited for a professional health career and its inherent responsibilities and obligations. Circumstances that may lead to student termination will include, but not be limited to, violation of state or federal statutes or regulations concerning drugs or controlled substances.



Admission

Selection committees will evaluate applicants for admission to the College of Pharmacy professional programs. Evaluations will be based on college records, state residency, PCAT scores, and other pertinent information. A personal visit, which includes an impromptu essay written during the visit, may be part of the evaluation process.

A minimum cumulative GPA of 2.80 in college course work is required for evaluation for admission, with completion of all required prerequisite courses by the end of spring term prior to beginning the professional program. Actual admission "cut off" is generally much higher.

NDSU course work and transfer credits with grades of D are not accepted for program requirements.

Pharmacy. Applications for admission to the professional programs in the college must be made by January 15 of the sophomore year in pre-pharmacy for fall semester admission. The applicants will receive notice of their status by June 1. Applications for admission to the post-baccalaureate Pharm.D. program must be made by January 15. Applicants will receive notice of their status by June 15.

Nursing. Applications for admission to the baccalaureate program should be made by October 1 for the class beginning in the spring semester of the sophomore year. Applicants will receive notification of their status by November 1.

Pharmacy

Pharmacy programs encompass both the basic and clinical sciences and are designed to provide students with the knowledge, skills, and attitudes essential to the practice of pharmacy.

The current mission of pharmacy practice is to render pharmaceutical care. The goal of pharmaceutical care is to improve an individual patient's quality of life through achievement of definite, medication-related therapeutic outcomes. The outcomes sought are (a) cure of a disease, (b) elimination or reduction of a symptoms, (c) arresting or slowing the disease process, or (d) preventing a disease or its symptoms. This, in turn, involves three major functions: (a) identifying potential and actual medication-related problems, (b) resolving actual medication-related problems, and (c) preventing potential medication-related problems. A medication-related problem is an event or circumstance involving medication therapy that actually or potentially interferes with an optimum outcome for a specific patient.

The six-year curriculum in pharmacy is conducted on a 2-4 basis. Students in the first two years of the program are in pre-pharmacy, and students in the final four years are in the professional program. Students entering the program in the first two years must meet general admission standards of the University. Students are admitted to the final four years on a competitive basis, and must meet specific admission requirements of the college. 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, the first two years, 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 provide the cultural and humanistic background needed to meet the demands of society today, as well as the professional education required for the practice of pharmacy. Various special areas of study prepare the student to accept positions in community, hospital, managed care, wholesale, and industrial pharmacy. Other opportunities include positions in food and drug inspection and analysis for both the state and federal governments, medical service representatives, and laboratory and 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 American Council on Pharmaceutical Education (ACPE).

Recommended Curriculum Pre-Pharmacy

To be admitted to the Professional Pharmacy program, the applicant must have completed at least 65 semester hours of college or university credits, including the following:

	Credits
Biological Sciences	15
Economics	3
English, Writing and Reading	6
First-Year Experience	1
General Chemistry w/Lab	8
Mathematics, Calculus	8
Organic Chemistry w/Lab	7
Physics/Biophysics	3
Speech Communication	3
Wellness	2

Additional Electives

Behavior and Social Science/Humanities	9
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Students attending other institutions must be aware of the General Education requirements when enrolling in course work.

This curriculum is subject to periodic changes. Students should maintain frequent contact with the college to determine appropriate course work.

Professional Pharm.D. Curriculum

	Credits
First Year	F S
Bioc 460, 461, Biochemistry I, II	4 4
Micr 460/561, Pathogenic, Lab	3,1
Phrm 373, Health Care Systems	2
PSci 368, 369, Pharmaceutics I, II	4 3
PSci 340, 341, Pathophysiology I, II	4 4
PSci 370, Lab Tech PSci	1
Stat 520, Statistical Methods	3
Totals	15 18

	Credits
Second Year	F S
Micr 470, Basic Immunology	3
Micr 572, Clinical Immunology	1
Phrm 458, Intro to Clinical Practice	2
Phrm 472, Pharmacy Law/Ethics	4
Phrm 480, Drug Literature Eval	2
Phrm 501, Consultation	2
PSci 411, 412, 413, Pharmacodynamics I, II, III	9
PSci 414, 415, 416, Pharmacodynamics IV, V, VI	9
PSci 470, Pharmacokinetics	3
PSci 471, Clinical Pharmacokinetics	2
Totals	19 18

Third Year

Phrm 520, Pediatrics-Geriatrics	2
Phrm 532, Infectious Disease	3
Phrm 534, Rheumatology/Endo/Repro.	2
Phrm 535, Hematology/Neoplastic	3
Phrm 536, Neurology/Psychiatry	3
Phrm 538, Cardiovascular/Pulmonary	4
Phrm 557, Home Health/Parenteral	3
Phrm 558, GI/Nutrition	3
Phrm 575, Pharmacy Management	3
Phrm 578, Non-Pres Meds	2
Phrm 579, Dispensing ³	2 OR 2
PSci 545, Clinical Toxicology	2
Totals	14-16 16-18

Fourth Year

48-Week Experiential Training Program ^{1, 2}	
Phrm 581, Clin Clerkship I	16
Phrm 582, Clin Clerkship II	16
Phrm 583, Clin Clerkship III	16
Total	48
Curriculum Total	150

¹Students assigned by rotation.

²Sites located in Fargo and other areas.

³Note: Phrm 579 is assigned either semester.

Baccalaureate Degree Program in Nursing

The nursing program is a four-year course of study leading to a baccalaureate degree with a major in nursing. Upon successful completion of the program, the graduate is eligible to apply for licensure as a registered nurse (R.N.). A baccalaureate degree is required in North Dakota for entry into professional practice. The nursing program is nationally accredited and approved by the North Dakota and Minnesota Boards of Nursing, as well as accredited by the National League for Nursing (NLN).

The nursing programs are consortium based through the Tri-College University (Minnesota State University-Moorhead, Concordia College and North Dakota State University). There is a sharing of faculty, resources, and facilities in offering the undergraduate and graduate programs. Students graduate from their respective institutions.

Mission. The mission of the nursing consortium is to provide professional nursing education, to advance knowledge of the discipline, and to serve as a resource for the health care needs of society.

Philosophy. The philosophy of the nursing program embodies a set of beliefs that provide the context within which the mission is realized. These philosophical statements are articulated below. The faculty of the TCU Nursing Consortium believes:

Nursing is a discipline consisting of four pervasive concepts: person, environment, health and nursing. As a discipline, nursing encompasses the components of nursing science, the art of nursing, personal knowledge, and ethics. The discipline continues to evolve from the interrelationships among nursing theory, research and practice. This evolution involves an expanding body of nursing knowledge that blends with the arts, sciences and humanities to form a framework for nursing practice.

The person, within the context of nursing is identified as a client; a client may be an individual, family, a group, and/or a community. We believe in the uniqueness and worth of our clients. This belief underlies our philosophies of nursing and education, and values both the commonalities and the diversities characteristic of people.

Environment is the client's circumstances and surroundings, both internal and external. These include physiological, psychological, cultural, spiritual, economic and social influences, and the client's perception of these influences. We believe that clients, as individuals, families, groups, and/or communities, are in constant interaction with their environments.

Health is maximized potential and well being. The goal of nursing is to promote optimal health of our clients along the continuum of life and death.

The practice of nursing is a dynamic, deliberative and interpersonal process used to provide holistic care to clients. Nursing practice includes health promotion, risk reduction disease prevention as well as illness and disease management. This practice involves critical thinking within a deliberative decision-making framework. The practice of professional nursing is based on theory and research from nursing and other disciplines; practice, theory and research are interrelated.

The nurse is prepared to perform multiple roles in diverse settings and is responsive to the changing health care needs of society. The nurse is accountable and responsible for actions taken within these roles.

Professional nursing education is a critical step in the development of learning as a lifelong process and serves as a foundation upon which further learning is based. The baccalaureate degree is the entry-level to professional nursing practice. We believe that baccalaureate nursing education prepares generalists; advanced practice nursing occurs within the framework of graduate education. Professional nurses participate in activities that contribute to the ongoing development of the body of knowledge of the discipline.

Learning is a process evidenced by changes in cognitive, affective and psychomotor behavior. Student learning is best facilitated in an environment of acceptance and freedom of expression that fosters critical thinking, self-understanding, caring and creativity. Faculty

provide opportunities for learning through experiences designed to integrate theory with practice promote a spirit of inquiry, and model and provide opportunities for students to develop critical thinking abilities. Preparation of professional nurses is achieved through collaborative partnerships in which both the teacher and learner are actively involved and accountable.

Caring, integral to professional nursing practice, encompasses the nurse's empathy for and connection with the client. Caring is demonstrated in compassionate, sensitive, and appropriate nursing care that preserves human dignity and nurtures the human spirit.

Graduate Outcomes. The development of the graduate outcomes was guided by "The Essentials of Baccalaureate Education for Professional Nursing Practice" (AACN, 1998), the "Standards of Clinical Nursing Practice" (American Nurses Association, 1998), and the "Code for Nurses" (American Nurses Association, 1985). The graduate outcomes of the baccalaureate level of the program are as follows:

1. Apply concepts from the arts, humanities, and sciences to professional nursing practice.
2. Communicate clearly and effectively.
3. Apply critical thinking in deliberative decision-making.
4. Provide nursing care in accordance with ANA, Standards of Clinical Nursing Practice.
5. Provide nursing care in accordance with the ANA Code for Nurses.

Curriculum. The curriculum is organized according to a conceptual model that flows from the mission and philosophy of the nursing program and provides the core of the curricular content. The themes of the conceptual model can be identified within the objectives, content outlines, and clinical experiences in each nursing course and within the graduate outcomes of the nursing program. The content of the program increases in scope and complexity as the student progresses through the major.

Application Procedures

1. The pre-nursing program (first three semesters) is open to all high school graduates and college students who wish to pursue a nursing major.

To enter the pre-nursing program, students must be admitted to the University. The nursing major begins the spring semester of the sophomore year.

2. For admission into the professional nursing program, a supplemental application must be submitted by October 1 to the Nursing Office, 136 Sudro Hall. Enrollment to the nursing major is limited. A minimum GPA of 2.5 (4.0 = A) is required in all post high school work to apply.

Admission is competitive and based on all of the following: (a) Selective GPA that incorporates selected prerequisite courses (see recommended

curriculum), (b) completion of the prerequisite courses with a passing grade, (c) eligibility for sophomore standing, (d) personal references, (e) impromptu essay, (f) a personal interview may be requested, and (g) submission of the completed application materials. Preference will be given to North Dakota residents and those students who have taken a greater number of credits in the North Dakota State University System.

Students applying for a nursing major (spring semester of the sophomore year) must complete and submit the following:

1. A regular application for admission to NDSU if not a current student
2. A supplemental nursing application
3. Official transcripts from all colleges attended, including NDSU
4. Two reference forms
5. Impromptu essay, written in the nursing department.

The documents must be on file in the Nursing Office by October 1. Application forms may be obtained at the Nursing Office, 136 Sudro Hall, and the Office of Admission, 124 Ceres Hall, North Dakota State University, Fargo ND 58105. You may also call the Office of Admission at (701) 231-8643 or 1-800-488-NDSU(6378). Students will be notified of their admission status by November 1.

Students who are currently enrolled at NDSU in the pre-nursing program should consult with their nursing faculty adviser prior to the application deadline.

For further information contact the following:
 Department of Nursing
 136 Sudro Hall
 North Dakota State University
 Fargo, ND 58105
 Telephone (701) 231-7395

Recommended Curriculum in Nursing

	Credits	
	F	S
First Year		
Biol 202, Intro to Microbiology		2
Biol 202L, Intro to Microbiology Lab		1
Chem 117, Chem Concepts & Applications		3
Chem 117L, Chem Concepts & Appl Lab		1
Chem 260, Elements of Biochemistry		4
Engl 110, College Composition I		3
Engl 120, College Composition II		3
Math 104, Finite Mathematics		3
Psyc 111, Intro to Psychology		3
Soc 110, Intro to Sociology OR		
Anth 111, Intro to Anthropology		3
Univ 189, Skills for Academic Success		1
Humanities and Fine Arts Electives		<u>3</u>
Totals		16

Second Year		
Biol 220, Human Anat & Physiology		3
Biol 220L, Human Anat & Physiology Lab		1
Biol 221, Human Anat & Physiology II		3
Biol 221L, Human Biol & Physiology II Lab		1
Comm 110, Fund of Public Speaking		3
Nutr 240, Principles of Nutrition OR		
F&N 250, Nutrition Science		3
*Nurs 351, Nursing Concepts		4
Psyc 250, Developmental Psychology OR		
CDFs 230, Life Span Development		3
Cultural Diversity Elective		3
Humanities & Fine Arts Elective		3
Elective		<u>3</u>
Totals		17

* Must be accepted into nursing program to enroll in nursing courses.

	Credits	
	F	S
Third Year		
Nurs 341, Client Concepts		4
Nurs 342, Adult Health Nursing I		4
Nurs 352, Family Nursing I		4
Nurs 360, Health Assessment		4
Nurs 362, Family Nursing II		4
Nurs 420, Nursing Research		2
Phrm 300, Prin of Clinical Pharmacology		3
Humanities/Fine Arts		3
Electives		<u>3</u>
Totals		16

Fourth Year		
Nurs 401, Community Health		4
Nurs 402, Mental Health Nursing		4
Nurs 403, Adult Health Nursing II		4
Nurs 404, Adult Health Nursing III		4
Nurs 411, 412, Role Development I, II		2,2
Nurs 430, Nursing Management		2
Electives		<u>3</u>
Totals		13
Curriculum Total		122

Selected prerequisite courses: The following courses must be completed prior to applying to the professional nursing major. **The selected GPA is calculated on these courses.**

- Engl 110, College Composition I
- Engl 120, College Composition II
- Math 104, Finite Mathematics
- Psyc 111, Intro to Psychology
- Soc 110, Intro to Sociology OR
- Anth 111, Intro to Anthropology

AND

Completion of 11 credits (of the 19 credits required) in the science category:

- Chem 117 & 117L, Chem Concepts & Applications & Lab
 - Chem 260, Elements of Biochemistry
 - Biol 202 & 202L, Intro to Microbiol & Lab
- OR
- Biol 202 & 202L, Intro to Microbiol & Lan
 - Biol 220 & 220L, Human Anat & Physiology I & Lab
 - Biol 221 & 221L, Human Anat and Physiology II & Lab

Students must successfully complete all first and second year courses prior to entering the third year of the nursing curriculum.

Computer proficiency is expected before beginning the nursing program.

Students must meet the University's general education requirements as well as the curriculum requirements in effect at the time of entrance into program. Students should consult their faculty adviser for electives that may enhance their program of study to meet graduation requirements.

Disclaimer: The recommended curriculum is subject to change based on nursing program development/planning. Students must consult with their nursing advisor to keep updated with the current curriculum.