

# COLLEGE OF PHARMACY, NURSING, AND ALLIED SCIENCES

[www.ndsu.edu/pharmacy](http://www.ndsu.edu/pharmacy)

Sudro Hall 123 (701) 231-7456

Charles D. Peterson, Dean

The College of Pharmacy, Nursing, and Allied Sciences at North Dakota State University has provided an education for men and women in pharmacy and the pharmaceutical sciences since 1902. In the fall of 1990, 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 four-year baccalaureate degree program in nursing.

Baccalaureate degree programs in the allied health fields of clinical laboratory science, respiratory care, and radiologic science joined the college in 2006.

## Degree Programs

The College of Pharmacy, Nursing, and Allied Sciences offers undergraduate academic programs in pharmacy, nursing, clinical laboratory science, respiratory care and radiologic sciences. 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. Graduate programs leading to an M.S. and a Ph.D. in Pharmaceutical Sciences also are available.

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). Graduate programs leading to a Master of Science in Nursing (MS) and a Doctor of Nursing Practice (DNP) also are available.

Four year degree plans in Clinical Laboratory Science (CLS), Respiratory Care (RC) and Radiologic Sciences (RS) include academic course work on campus and an internship in an affiliated, accredited hospital-based clinical program. Twelve-fifteen month internships are required of CLS and RC majors and a 24-month internship is required for RS majors. Graduates are eligible to write national certifying examinations.

## Academic Preparation

Certain preparation in addition to the minimum core curriculum requirements is advisable if a student is to enter easily and progress smoothly through a particular university curriculum.

All students must complete all required courses 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 shall be terminated from enrollment in the College of Pharmacy, Nursing and Allied Sciences.

The faculty of the college 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, academic misconduct, violation of campus, state or federal statutes or regulations.



## Admission

Selection committees will evaluate applicants for admission to the college professional programs. NDSU course work and transfer credits with grades of D are not accepted for program requirements.

**Pharmacy.** Additional high school preparation for the pharmacy major is recommended. Prospective pharmacy majors should present strong preparation in mathematics, in the physical/biological sciences, and in communication skills

Evaluations will be based on college records, state residency, Pharmacy College Admission Test (PCAT) scores, and other pertinent information. A personal visit, which includes an interview and test is a part of the evaluation process. A minimum cumulative GPA of 3.00 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. (All core pre-pharmacy course work, which is indicated by an asterisk, must be completed by the end of the fall term prior to the January 1 application.) Actual admission "cut off" is generally much higher. Applications for admission to the professional program must be made by January 1 of the sophomore year in pre-pharmacy for fall semester admission. All applicants will receive notice of their status by April 15.

Applications for admission to the post-baccalaureate Pharm.D. program must be made by December 15. All applicants will receive notice of their status by June 15.

**Nursing.** Applications for admission to the baccalaureate program should be made by May 20 for the class beginning in the spring semester of the sophomore year. Applicants will receive notification of their status by June 30.

**Clinical Laboratory Science.** NDSU maintains affiliation agreements with various schools of clinical laboratory science that provide the necessary 12-month internship. Criteria for admission to the internship are established by each school and generally include academic performance, references, prior work experience, and an interview. Admission to the internship is selective. Applications for the internship are due to the academic director of CLS by September 30, however, application deadlines do vary among affiliated programs.

**Radiologic Sciences.** Students who have completed a minimum of the first two years of course work on campus and meet the GPA requirements established by affiliated programs may be eligible to apply for the 24-month internship. Transfer students must complete a minimum of 20 resident credits at NDSU. Admission into the internship is competitive and based upon academic achievement, references, work experience, and an interview. Applications for the internship are due to the academic director of RS by December 1, however, application deadlines do vary among affiliated programs.

**Respiratory Care.** Students eligible for internship application will have completed the first two years of the RC curriculum by the start of an internship and have a minimum GPA of 2.50. Application deadline is March 1. Admission into the internship is selective and is based upon successful completion of all internship prerequisites (a minimum of 20 resident credits at NDSU for transfer students), GPA, references, interview, and career motivation.

## Department of Allied Sciences

www.ndsu.edu/cls

www.ndsu.edu/rc

www.ndsu.edu/rs

### Clinical Laboratory Science Major

Clinical laboratory scientists use the latest biomedical instruments to perform laboratory tests to determine the presence of disease and aid in patient treatment, monitor quality, evaluate and communicate results, and research and develop new tests and methodologies.

A baccalaureate degree, major in clinical laboratory science, includes three years of academic coursework on campus and a 12 month internship in an accredited school of clinical laboratory science. Graduates are eligible to take a national certification exam offered by a recognized agency.

College academic work includes college algebra, biological sciences, chemistry and statistics, along with general education electives. Courses in molecular biology techniques, virology, management and research methods also are recommended. The full-time internship consists of classroom and clinical "bench instruction" in clinical chemistry, hematology, immunohematology, microscopy/urinalysis, microbiology, serology, phlebotomy, education, management and research methods.

NDSU has affiliation agreements with various schools of clinical laboratory science that provide the professional education or internship. Affiliated programs are accredited by the National Accrediting Agency for Clinical Laboratory Science. Criteria for admission to the year of internship are established by each school and generally include academic performance, references, prior work experience, and an interview. Admission to the internship is selective. Internship application procedures, descriptions of professional courses, and registration information for the year of internship are available from the Department of Allied Sciences. Grades submitted by the clinical institution for each of the courses taken during the professional training are attached to the student's official university transcript, but are not included in calculation of grade-point average.

### Sample '08-09 Curriculum Clinical Laboratory Science Major

General Education	Credits
First Year Experience (F):	
UNIV 189, Skills for Academic Success	1
Communications (C):	
COMM 110, Fund of Public Speaking	3
ENGL 110 <sup>1</sup> , 120, College Composition I, II	3,3
ENGL Upper Level Writing Course <sup>2</sup>	3
Quantitative Reasoning (R):	
STAT 330, Intro Statistics	3
Science & Technology (S):	
CSCI 114, Microcomputer Pkgs	3
BIOL 150, 150L, General Biology, Lab	3,1
BIOL 220, 220L, Human Anat/Phys I, Lab	3,1
Humanities & Fine Arts (A)	6
Social & Behavioral Sciences (B)	6
Wellness (W)	2
Cultural Diversity (D) <sup>3</sup>	--
Global Perspective (G) <sup>3</sup>	--
<b>Total</b>	<b>41</b>

Major Requirements	Credits
CLS 111, Intro to Clinical Lab Science	1
CLS 300, Phlebotomy & Specimen Collection	2
CLS 435, Hematology	2
CLS 496, Internship <sup>4</sup>	30
BIOC 460, Found of Biochem & Molec Biol I	4
BIOL 221, 221L, Human Anat/Phys II, Lab	3,1
CHEM 121, 121L, General Chem I, Lab	3,1
CHEM 122, 122L, General Chem II, Lab	3,1
MATH 103, College Algebra	3
MICR 350, 350L, General Microbiology	3,1
MICR 363, Clinical Parasitology	2
MICR 460, 460L, Pathogenic Microbiology	3,2
MICR 470, 471, Basic Immunology, Lab	3,2
ZOO 315, 315L, Genetics, Lab	3,1
CHEM 341, 341L, Organic Chem I, Lab & CHEM 342, Organic Chemistry II or	4,3
CHEM 240, Survey of Organic Chem & BIOC 461, Found of Biochem & Mol Biol II	3,4
<b>Total</b>	<b>81</b>

### Curriculum Total (min) 122

- Effective fall 2007, students with composite ACT scores of 21 or higher should register for English 120 (unless transfer credit for ENGL 120 is received). Students who complete English 120 with a C or higher will receive credit for English 110 with a passing grade (P). Students with a composite ACT score of less than 21 are required to register for English 110.
- Refer to department or curriculum guide for course options.
- May double count with Select Humanities & Fine Arts, Social & Behavioral Science and/or Science & Tech. Gen Ed Courses.
- Credits earned in an accredited, affiliated clinical laboratory science program.

### Radiologic Sciences Major

Radiographers perform diagnostic imaging examinations to assist physicians to diagnose or rule out disease or injury.

The baccalaureate Radiologic Sciences (RS) program includes two or more years of academic course work on campus and a 24-month professional phase or internship that includes classroom and clinical education specific to radiology. Academic course work includes chemistry, physics, anatomy and physiology, microbiology, trigonometry, and computer science, in addition to general education requirements. Each student also completes a minimum of 12 credits of 300-400 level special elective courses on campus related to a specialty area of interest in radiologic sciences. A list of approved special elective courses is available from the RS advisor.

Students who have completed the first two years of course work on campus and meet the GPA requirements may be eligible to apply for an internship. Transfer students must complete a minimum of 20 resident credits at NDSU prior to the start of an internship to be eligible to apply to affiliated programs. Admission into the internship is competitive and based upon academic achievement, references, work experience, and an interview.

The internship provides 60 credits of classroom and clinical instruction in-patient care procedures, radiation physics and protection, principles of imaging, positioning, radiobiology, and pathology. Affiliated radiology programs are accredited by the Joint Review Committee for Education in Radiologic Technology. Upon completion of the internship, graduates are eligible to write the national certifying examination to become a registered radiologic technologist, RT(R).

Registration procedures for the internship are available from the Department of Allied Sciences. Grades submitted for each of the courses taken during the internship are attached to the student's official university transcript, but are not included in calculation of grade-point average.

### Sample '08-09 Curriculum Radiologic Sciences Major

General Education	Credits
First Year Experience (F):	
UNIV 189, Skills for Academic Success	1
Communications (C):	
COMM 110, Fund of Public Speaking	3
ENGL 110 <sup>1</sup> , 120, College Composition I, II	3,3
ENGL Upper Level Writing Course <sup>2</sup>	3
Quantitative Reasoning (R):	
STAT 330, Intro Statistics	3
Science & Technology (S):	
CSCI 114, Microcomputer Pkgs	3
BIOL 220, 220L, Human Anat/Phys I, Lab	3,1
MICR 202, 202L, Intro Micro, Lab	2,1
Humanities & Fine Arts (A)	6
Social & Behavioral Sciences (B)	6
Including: PSYC 111, Intro to Psychology	
Wellness (W)	2
Cultural Diversity (D) <sup>3</sup>	--
Global Perspective (G) <sup>3</sup>	--
<b>Total</b>	<b>40</b>

### Major Requirements Credits

RS 111, Intro to Radiologic Science	1
RS 496, Internship <sup>5</sup>	60
BIOL 221, 221L, Human Anat/Phys II, Lab	3,1
CHEM 117, 117L, Chem Concept, Lab <sup>4</sup>	3,1
CHEM 260, Elem of Biochemistry <sup>4</sup>	4
MATH 105, Trigonometry	3
PHRM 125, Med Term for the Health Prof	1
PHRM 170, Common Meds/Diseases or PHRM 300, Prin of Clinic Pharmacology	2 or 3
PHYS 211, 211L College Physics I, lab	3,1
PHYS 212, 212L College Physics I, lab	3,1
Special Electives <sup>2</sup>	12
<b>Total</b>	<b>99-100</b>

### Curriculum Total 140

- Effective fall 2007, students with composite ACT scores of 21 or higher should register for English 120 (unless transfer credit for ENGL 120 is received). Students who complete English 120 with a C or higher will receive credit for English 110 with a passing grade (P). Students with a composite ACT score of less than 21 are required to register for English 110.
- Refer to department or curriculum guide for course options.
- May double count with Select Humanities & Fine Arts, Social & Behavioral Science and/or Science & Tech. Gen Ed Courses.
- CHEM 117, 117L and CHEM 260 are the minimum requirement for RS majors. Students may complete either of the following sequences and substitute them for the minimum requirement: CHEM 121, 121L/122, 122L, CHEM 240, and CHEM 260 OR CHEM 121, 121L/122, 122L, CHEM 341, 341L, 342, and BIOC 460, 461.
- Credits earned in an accredited, affiliated radiology program.

**Note:** This is a sample curriculum. Other variations are possible. Students should meet with their RS advisor to plan schedules.

### Respiratory Care Major

Respiratory Care (RC) is an allied health profession that involves the evaluation, treatment, and education of patients with cardiopulmonary disorders. Respiratory therapists (RTs) work closely with physicians, nurses, and other allied health members in critical care, emergency rooms, nursery and pediatrics, medical units, and home care. RTs perform diagnostic tests, administer a variety of treatments to promote pulmonary hygiene, manage mechanical ventilators and cardiovascular support, and direct pulmonary rehabilitation activities.

The baccalaureate degree Respiratory Care program includes two-three years of academic course work at NDSU and a 15-month professional phase or internship in the Respiratory Care Department at MeritCare Medical Center, Fargo, N.D.

Academic course work includes chemistry, physics, anatomy and physiology, microbiology, mathematics, psychology, and computer science. Each student also is required to complete a minimum of 12 credits of 300-400 level special elective courses on campus. Special elective courses should be closely related to the clinical area in which the student wishes to specialize. A list of approved special elective courses is available from the RC advisor. Common specialty areas include neonatal/pediatric general or intensive care, adult general or intensive care, diagnostics, pulmonary rehabilitation, home care, education, and management. Specialty training within RC occurs at the end of the internship year (RC 494).

The internship consists of lecture, laboratory, and clinical education that prepare the student to enter the profession of respiratory care. Students are eligible to apply for one of the internships available each year at MeritCare during the semester they plan to complete all prerequisite courses on campus. Admission into the internship is selective and is based upon successful completion of all internship prerequisites (a minimum of 20 resident credits at NDSU for transfer students), grade point average, references, personal interview, and career motivation. Upon completion of the internship, graduates are eligible to write the national certifying examinations to obtain the certified and registered credentials.

### Sample '08-09 Curriculum Respiratory Care Major

General Education	Credits
First Year Experience (F):	
UNIV 189, Skills for Academic Success . . . . .	1
Communications (C):	
COMM 110, Fund of Public Speaking . . . . .	3
ENGL 110 <sup>1</sup> , 120, College Composition I, II . . . . .	3,3
ENGL Upper Level Writing Course <sup>2</sup> . . . . .	3
Quantitative Reasoning (R):	
STAT 330, Intro Statistics . . . . .	3
Science & Technology (S):	
CSCI 114, Microcomputer Pkgs . . . . .	3
BIOL 220, 220L, Human Anat/Phys I, Lab . . . . .	3,1
MICR 202, 202L, Intro Micro, Lab . . . . .	2,1
Humanities & Fine Arts (A) . . . . .	6
Social & Behavioral Sciences (B) . . . . .	6
Including: PSYC 111, Intro to Psychology	
Wellness (W) . . . . .	2
Cultural Diversity (D) <sup>3</sup> . . . . .	--
Global Perspective (G) <sup>3</sup> . . . . .	--
<b>Total</b> . . . . .	<b>40</b>

Major Requirements	Credits
RC 111, Intro to Respiratory Care . . . . .	1
RC 496, Intership <sup>4</sup> . . . . .	51
RC 494, Individual Study . . . . .	4
BIOL 221, 221L, Human Anat/Phys II, Lab . . . . .	3,1
CHEM 121, 121L Prin of Chem I, Lab . . . . .	3,1
CHEM 122, 122L Prin of Chem II, Lab . . . . .	3,1
CHEM 240, Survey of Organic Chem . . . . .	3
CHEM 260, Elem of Biochemistry . . . . .	4
HNES 210, First Aid & CPR . . . . .	2
MATH 103, College Algebra . . . . .	3
PHRM 125, Med Term for the Health Prof . . . . .	1
PHYS 120, Fundamentals of Physics . . . . .	3
Special Electives <sup>5</sup> . . . . .	12
<b>Total</b> . . . . .	<b>96</b>

### Curriculum Total . . . . . 136

1 Effective fall 2007, students with composite ACT scores of 21 or higher should register for English 120 (unless transfer credit for ENGL 120 is received). Students who complete English 120 with a C or higher will receive credit for English 110 with a passing grade (P). Students with a composite ACT score of less than 21 are required to register for English 110.

2 Refer to department or curriculum guide for course options.

3 May double count with Select Humanities & Fine Arts, Social & Behavioral Science and/or Science & Tech. Gen Ed Courses.

4 Credits earned at MeritCare Medical Center Respiratory Care Program.

5 Each student will develop a specialty proposal in his/her own area of primary interest. Each specialty will consist of RC 494, Individual Study, four credits, plus a minimum of 12 additional academic credits at the 300-400 level or higher. A list of approved special elective courses is available from the respiratory care advisor. The specialty proposal will be developed in the latter part of the internship year and presented prior to completion of the internship to a respiratory care consorsial committee, or its designates, for approval. Once approved, any changes must occur by petition to the consorsial committee.

## Department of Nursing

[www.ndsu.edu/ndsu/nursing](http://www.ndsu.edu/ndsu/nursing)

### Nursing Major

The Nursing program is a four-year course of study leading to a Bachelor of Science in Nursing (B.S.N.) degree. Upon successful completion of the program, the graduate is eligible to apply for licensure as a registered nurse (R.N.). The nursing program is approved by the North Dakota Board of Nursing and is nationally accredited by the Commission on Collegiate Nursing Education (CCNE).

### Mission

The mission of the nursing department 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.

### Core Values

The faculty, students, and graduates of the department of nursing believe in the inherent worth and dignity of individuals and the value of professional nursing as an integral part of the health of society. We believe the core values of autonomy, caring, integrity, justice, professionalism and respect guide the scholarship of education, service, practice and research.

The role of faculty is to encourage, facilitate, and provide opportunities which support self-directed learning and critical thinking, enhance personal growth and socialize students as members of the profession. The role of students is to develop the knowledge, skills and attitudes essential to professional nursing practice and graduate study in nursing. The role of the graduates is to promote the health of society, advance the discipline, and function as responsible citizens of the nation and the world.

Nursing is an art and science. It is a practice profession and an academic discipline. The domain of nursing is the human response to actual or potential variations in human functioning and life processes. Nursing involves interactions among the nurse, the person and the environment in the prevention of disease, the promotion and restoration of health, and the comfort of the dying.

Professional nursing practice is the creative application of therapeutic nursing interventions based on a synthesis of scientific knowledge, research, professional values and standards. Professional nurses work with individuals, families, communities and other aggregates to meet primary, secondary, and tertiary health care needs. Nurses practice independently, interdependently, and collaboratively in a variety of settings. Nurses balance career advancement, personal well-being, and fidelity to nursing's social contract.

Core values provide a framework that supports education for and practice of professional nursing as envisioned by the Department of Nursing.

Caring is the central concept of nursing. The competence, sensitivity and compassion that characterize professional caring, guide our behavior in faculty/student and nurse/client interactions. Respect is reflected by nurses' regard for human dignity and in our acceptance of the diversity of humankind. In our practice we demonstrate our respect for other disciplines through collegiality and collaboration.

Autonomy reflects a patient's right to make decisions about his/her health care and nurses' rights to make decisions about their professional practice. Integrity is manifested in our honesty with patients and the public, by adherence to standards of academic honesty, through our accountability for our actions, and through our provision of care based on practice standards.

The professional obligation to assure equal treatment and equal access to care is a facet of justice. Nurses have a professional responsibility to encourage legislation and policy development that advances nursing care and quality health care for all people. Nursing faculty has an obligation to ensure that students have the opportunity to participate in and contribute to an excellent learning environment. Professionalism encompasses a commitment to lifelong learning and professional development, participation in professional organizations and the political process, and adherence to professional values and regulations.

### Graduate Outcomes

The graduate of the North Dakota State University baccalaureate nursing program will:

1. Practice nursing in accordance with American Nurses Association Standards of Practice and Standards of Professional Performance.
2. Apply in nursing practice an understanding of the basic relationships among disease transmission, health status, health policy, cultural influences and health care economics within the global community.
3. Apply quality improvement approaches in work as peers on multidisciplinary teams.
4. Use information technology and communicate effectively with clients, health care team members, policy makers and the public.

### Curriculum

The curriculum is organized according to a conceptual model that flows from the mission and values of the nursing program. The "Essentials of Baccalaureate Education" (American Association of Colleges of Nursing, 1998) and "The Standards of Nursing Practice" (American Nurses Association, 2004) served as guidelines for development of the curriculum. 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 two semesters) is open to all high school graduates 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 fall semester of the sophomore year.
2. For admission into the professional nursing program, an application must be submitted by May 20 to the Nursing Office, 136 Sudro Hall. Enrollment in the nursing major is limited. A minimum GPA of 3.0 (4.0 = A) is required in all post high school work.

Admission is competitive and based on all of the following: (a) cumulative GPA of at least 3.0, (b) selective GPA of at least 3.0 that incorporates selected prerequisite courses (see recommended curriculum), (c) completion of prerequisite courses with a passing grade, (d) eligibility for sophomore standing, (e) 2 references, (f) an interview or essay, (g) number of credits (up to 27) taken in the North Dakota University System, and (h) advisor recommendation.

Students applying for a nursing major must submit the following:

1. Application to the professional major
2. Official transcripts from all colleges attended, excluding NDSU
3. Two reference forms
4. Evidence of pre-nursing status at NDSU.

The documents must be on file in the Nursing Office by May 20. 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 231-8643 or 1-800-488-NDSU(6378). Students will be notified of their admission status by June 30.

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

For further information contact:

Department of Nursing  
136 Sudro Hall  
North Dakota State University  
Fargo, ND 58105  
Telephone (701)231-7395

## Sample '08-09 Curriculum Nursing Major

General Education Requirements	Credits
First Year Experience (F):	
UNIV 189, Skills for Academic Success	1
Communications (C):	
COMM 110, Fund of Public Speaking	3
ENGL 110 <sup>1</sup> , 120, College Comp I, II	3,3
ENGL Upper Level Writing Course <sup>2</sup>	3
Quantitative Reasoning (R):	
STAT 330, Intro Statistics	3
Science & Technology (S):	
CHEM 117, 117L, Chem Con/Appl, Lab	3,1
BIOL 220, 220L, Human Anat/Phys I, Lab	3,1
MICR 202, 202L, Intro Micro, Lab	2,1
Humanities & Fine Arts (A)	6
Social & Behavioral Sciences (B):	
PSYC 111, Intro to Psychology	3
SOC 110, Intro to Sociology or	
ANTH 111, Intro to Anthropology	3
Wellness (W)	2
Cultural Diversity (D) <sup>3</sup>	--
Global Perspective (G)	--
ANTH 111, Intro to Anthropology	
<b>Total</b>	<b>41</b>

Additional Requirements	Credits
BIOL 221, 221L, Human Anat/Phys II, Lab	3,1
CHEM 260, Elements of Biochemistry	4
HNES 250, Nutrition Science	3
PSYC 250, Developmental Psychology or	
CDFS 230, Life Span Development	3
Electives	6
<b>Total</b>	<b>20</b>

Professional Nursing Requirements <sup>4</sup>	Credits
NURS 240, Nursing as a Scholar Profess	3
NURS 250, Health Promotion	2
NURS 251, Skills & Concepts for Nurs Pract	2
NURS 252, Gerontology Nursing	2
NURS 360, Health Assessment	4
NURS 340, Leadership & Ethical Reflection	2
NURS 341, Found of Clinical Nursing	3
NURS 342, Adult Health I	5
NURS 352, Family Health I	5
NURS 362, Family Health II	4
NURS 430, Nursing Management	2
NURS 402, Mental Health Nursing	5
NURS 403, Adult Health II	5
NURS 404, Adult Health III	4
NURS 406, Public Health Nursing	4
NURS 440, Nursing Issues & Career Devel	2
NURS 450, Nursing Synthesis & Practicum	4
PHRM 300, Prin of Clinical Pharmacology	3
<b>Total</b>	<b>61</b>

### Curriculum Total (min) 122

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2 Refer to department or curriculum guide for course options.

3 May double count with Select Humanities & Fine Arts, Social & Behavioral Science and/or Science & Tech. Gen Ed Courses.

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

**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.

COMM 110, Fundamentals of Public Speaking  
ENGL 120, College Composition II  
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:

BIOL 220 & 220L, Hum Anat/Phys I & Lab  
BIOL 221 & 221L, Hum Anat/Phys II & Lab  
CHEM 117 & 117L, Chem Concepts & Applications & Lab  
CHEM 260, Elements of Biochemistry  
MICR 202 & 202L, Intro to Microbiol & Lab or  
MICR 202 & 202L, Intro to Microbiol & 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 advisor about electives that may enhance their program of study. Because of limitations on class size, the typical student admitted to the nursing program has a selective GPA higher than 3.0.

**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.

## Department of Pharmacy Practice

[www.ndsu.edu/pharmacy](http://www.ndsu.edu/pharmacy)

### Pharmacy Major

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 serve society as the profession responsible for the appropriate use of medications, devices, and services to achieve optimal therapeutic outcomes.

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. 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, 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. 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).

### Sample '08-09 Curriculum Pre-Pharmacy Major

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:

General Education Requirements	Credits
First Year Experience (F):	
UNIV 189, Skills for Academic Success	1
Communications (C):	
COMM 110 <sup>1</sup> , Fund of Public Speaking	3
ENGL 110 <sup>2</sup> , 120 <sup>1</sup> , College Comp I, II	3,3
ENGL Upper Level Writing Course <sup>3</sup>	3
Quantitative Reasoning (R):	
MATH 146 <sup>1</sup> , Applied Calculus I	4
Science & Technology (S):	
BIOL 150 <sup>1</sup> , 150L <sup>1</sup> , General Biology I, Lab	3,1
CHEM 121 <sup>1</sup> , 121L, General Chemistry I, Lab	3,1
CHEM 122 <sup>1</sup> , 122L, General Chemistry II, Lab	2,1
Humanities & Fine Arts (A)	6
Social & Behavioral Sciences (B)	6
Including: ECON 105, Elements of Economics or ECON 201, Prin of Microeconomics	

Wellness (W).....	2	<b>P3- Fall</b>	<b>Credits</b>
Cultural Diversity (D) <sup>4</sup> .....	--	PHRM 520, Pediatrics-Geriatrics .....	2
Global Perspective (G) .....	--	PHRM 535, Neoplastic Diseases.....	2
ECON 105, Elements of Economics or		PHRM 536, Neurology/Psychiatry .....	3
ECON 201, Prin of Microeconomics		PHRM 537, Renal/Fluid & Electrolyte.....	3
<b>Total</b> .....	<b>42</b>	PHRM 551, 551L, Pharmaceutical Care, Lab .....	1,1
		Professional Elective .....	1-3
		<b>Total</b> .....	<b>14-15</b>

**Additional Requirements Credits**

BIOL 220 <sup>1</sup> , 220L <sup>1</sup> , Human Anat/Phys I, Lab .....	4
BIOL 221, 221L, Human Anat/Phys II, Lab .....	4
CHEM 341 <sup>1</sup> , 341L, Organic Chemistry I, Lab .....	4
CHEM 342, Organic Chemistry II.....	3
MATH 147 <sup>1</sup> , Applied Calculus II .....	4
MICR 202 <sup>1</sup> , 202L <sup>1</sup> , Intro to Microbiology, Lab.....	2,1
PHYS 120, Fund of Physics.....	3
<b>Total</b> .....	<b>25</b>

1 Core courses used for GPA calculation for admission to professional program.

2 Effective fall 2007, students with composite ACT scores of 21 or higher should register for English 120 (unless transfer credit for ENGL 120 is received). Students who complete English 120 with a C or higher will receive credit for English 110 with a passing grade (P). Students with a composite ACT score of less than 21 are required to register for English 110.

3 Refer to department or curriculum guide for course options.

4 May double count with Select Humanities & Fine Arts, Social & Behavioral Science, and/or Science & Tech. Gen Ed Courses.

**Note:** 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. Major**

<b>P1- Fall</b>	<b>Credits</b>
BIOC 460, Biochemistry I .....	4
MICR 470, Basic Immunology .....	3
PSCI 340, Pathophysiology I .....	4
PSCI 368, Pharmaceutics I .....	4
PHRM 351, 351L, Pharmaceutical Care I, Lab .....	1,1
<b>Total</b> .....	<b>17</b>

**P1- Spring**

BIOC 461, Biochemistry II.....	4
PSCI 341, Pathophysiology II .....	4
PSCI 369, Pharmaceutics II.....	3
PSCI 411, Pharmacodynamics I.....	3
PHRM 352, 352L, Pharmaceutical Care II, IPPE.....	1,1
<b>Total</b> .....	<b>16</b>
<b>Fall/Spring Total</b> .....	<b>33</b>

**P2- Fall Credits**

PSCI 412, Pharmacodynamics II.....	3
PSCI 413, Pharmacodynamics III .....	3
PSCI 470, Pharmaceutics III.....	3
PHRM 451, 451L, Pharmaceutical Care, IPPE.....	1,1
PHRM 480, Drug Lit. Evaluation .....	3
PHRM 475, Pharmacy Management .....	3
<b>Total</b> .....	<b>17</b>

**P2- Spring**

MICR 460/561, Pathogenic/Pharm Lab.....	3/1
PSCI 414, Pharmacodynamics IV .....	3
PSCI 415, Pharmacodynamics V.....	3
PSCI 416, Pharmacodynamics VI .....	3
PHRM 452, 452L, Pharmaceutical Care, Lab .....	1,1
PHRM 471, Clinical Pharmacokinetics.....	2
<b>Total</b> .....	<b>17</b>

**Fall/Spring Total**..... **34**

**P3- Spring Credits**

PHRM 534, Rheum/Endo/Repro .....	2
PHRM 532, Infectious Disease .....	3
PHRM 538, Cardiovascular & Pulmonary.....	4
PHRM 552, 552L, Pharmaceutical Care, Lab .....	1,1
PHRM 558, GI/Nutrition .....	2
PHRM 572, Pharmacy Law.....	2
Professional Elective .....	1-3
<b>Total</b> .....	<b>16-17</b>

**Fall/Spring Total**..... **31**

**P4- Fall/Spring Credits**

45-Week Experiential Training Program 1, 2 .....	--
PHRM 581, Clin Clerkship I.....	15
PHRM 582, Clin Clerkship II.....	15
PHRM 583, Clin Clerkship III .....	15
<b>Fall/Spring Total</b> .....	<b>45</b>

**Curriculum Total**..... **143**

1 Students assigned by rotation.

2 Sites located in Fargo and other areas.