Pharmacists promote the safe and effective use of drugs by providing medication therapy management services. In addition to preparing and dispensing medications prescribed by physicians, pharmacists provide information to patients about medications and their uses; advise physicians and other health-care practitioners on medication selection, dosages, interactions, and adverse effects; and monitor patient responses to drug therapy.

Pharmacists are educated and trained to provide patient care services in a variety of settings. Traditionally, most pharmacists work in community settings, such as retail pharmacy, or in health-care facilities, such as hospitals. Community pharmacists dispense medications, counsel patients, and answer questions about prescribed therapies. They also provide information and make recommendations about over-the-counter medications, products, and medical equipment. A community pharmacy offers the setting to combine specialized pharmacy knowledge with application of patient care skills, business administration, and marketing. In addition to patient counseling, community pharmacists spend considerable time discussing health-related matters with prescribers. Pharmacists in health-care facilities such as hospitals prepare and distribute medications and collaborate with medical staff regarding the selection and effective use of medications. They also assess, plan, and monitor medication regimens and counsel patients on use of medications during hospitalization and upon discharge. Some pharmacists specialize in specific areas such as cardiology, infectious diseases, oncology, pediatrics, and psychiatry.

Opportunities are expanding for pharmacists elsewhere. Health maintenance organizations, private practice groups, long-term-care facilities, home health care, the Public Health Service, the armed services, and law enforcement agencies such as the Federal Drug Enforcement Administration all require the professional services of pharmacists. Graduates also find employment in drug development, marketing and research within the pharmaceutical industry, colleges of pharmacy, and professional association management. Many graduates go on to leading graduate schools, pharmacy practice residencies, and research fellowships for specialized training.

The six-year Doctor of Pharmacy curriculum at Northeastern University offers a unique program that fully integrates campus-based learning with experiential education, including the University’s signature cooperative education (Co-op) program.

To be eligible for a pharmacy degree, a student must satisfactorily complete all courses in the curriculum; have an overall 2.000 GPA; meet the introductory (co-op) and advanced pharmacy practice experiences; and satisfy all other requirements as stated in the Bouvé College of Health Sciences Undergraduate Student Information Manual. The undergraduate pharmacy program, which is fully accredited by the Accreditation Council for Pharmacy Education (info@acpe-accredit.org), subscribes to the standards established by ACPE and the American Association of Colleges of Pharmacy.

Pharmacy graduates must meet specific requirements to qualify for professional licensure in the state where they plan to practice as a registered pharmacist. These requirements include graduating from an accredited school of pharmacy, passing national and state board examinations, and completing an internship. The internship is a period of practical experience conducted under the supervision of a registered pharmacist. Massachusetts requires 1,500 internship hours, all of which are satisfied through the introductory (co-op) and advanced pharmacy practice experiences.

Academic Progression Standards

Students must adhere to the program plan for their year of graduation. Any deviation from the program’s curriculum requires permission and an approved plan of study from the School of Pharmacy Academic Affairs Committee. To remain in good academic standing, students must receive grades of C or better in all professional prerequisite courses beginning with the second year of the program. To progress from the second to the third (first professional) year of the pharmacy program, students must have an overall grade point average (GPA) of at least 2.700; have satisfactorily completed all courses in years one and two of the curriculum; and have successfully completed evaluations to assess verbal and written communication skills, understanding of the pharmacy profession, and commitment to patient care. To progress into any subsequent year of the program, students must have passed all professional courses with a grade of C or better.
PharmD—Doctor of Pharmacy

PHARMACY MAJOR GRADE REQUIREMENT
A grade of C or higher is required in all PHMD and PHSC courses. A GPA of 2.700 is necessary to progress from second to third year. See “Academic Requirements” on page 219 and “Academic Progression Standards” on page 236 for additional grade and progression requirements.

SEMESTER 1 (FALL)

Freshman Seminar
Complete the following course:
PHMD 1000 College: An Introduction 1 SH

Biology 1
Complete the following course with corresponding lab:
BIOL 1111 General Biology 1 4 SH
with BIOL 1112 Lab for BIOL 1111 1 SH

Chemistry 1
Complete the following course with corresponding lab:
CHEM 1211 General Chemistry 1 4 SH
with CHEM 1212 Lab for CHEM 1211 1 SH

Introductory English
Complete the following course with a grade of C or higher:
ENGL 1111 College Writing 4 SH

Psychology
Complete the following course:
PSYC 1101 Foundations of Psychology 4 SH

SEMESTER 2 (SPRING)

Biology 2
Complete the following course with corresponding lab:
BIOL 1113 General Biology 2 4 SH
with BIOL 1114 Lab for BIOL 1113 1 SH

Chemistry 2
Complete the following course with corresponding lab:
CHEM 1214 General Chemistry 2 4 SH
with CHEM 1215 Lab for CHEM 1214 1 SH

Calculus
Complete the following course:
MATH 1241 Calculus 1 4 SH

Profession of Pharmacy
Complete the following course:
PHMD 1001 Introduction to the Profession of Pharmacy 1 SH

Arts/Humanities Level 1
Complete one course to satisfy the NU Core arts/humanities level 1 requirement as described on page 26.

SEMESTER 3 (FALL)

Physics
Complete the following course with corresponding lab:
PHYS 1149 Physics for Pharmacy 4 SH
PHYS 1150 Lab for PHYS 1149 1 SH

Organic Chemistry 1
Complete the following course with corresponding lab:
CHEM 2311 Organic Chemistry 1 4 SH
with CHEM 2312 Lab for CHEM 2311 1 SH

Human Physiology 1 and Human Anatomy Laboratory
Complete the following course with corresponding lab:
PHSC 2301 Human Physiology 1 3 SH
with PHSC 2302 Human Anatomy Lab 1 SH

Comparative Study of Cultures
Complete one course to satisfy the NU Core comparative study of cultures requirement as described on page 26.

SEMESTER 4 (SPRING)

Co-op Seminar/Pharmacy Practice
Complete the following course:
PHMD 1201 Introduction to Pharmacy Practice 1 SH

Organic Chemistry 2
Complete the following course with corresponding lab:
CHEM 2313 Organic Chemistry 2 4 SH
with CHEM 2314 Lab for CHEM 2313 1 SH

Human Physiology 2 and Human Physiology Laboratory
Complete the following course with corresponding lab:
PHSC 2303 Human Physiology 2 3 SH
with PHSC 2304 Human Physiology Lab 1 SH

Medical Microbiology
Complete the following course:
PHSC 2360 Medical Microbiology 3 SH

Free Elective
Complete one course outside pharmacy.

PROGRESSION REQUIREMENTS FOR THIRD YEAR
1. A 2.700 GPA is required at the end of the second year to progress to the third year.
2. The student must demonstrate good written and verbal communication skills.
3. The student must demonstrate an understanding of the pharmacy profession.
4. The student must demonstrate a commitment to patient care.

SEMESTER 5 (FALL)

Biochemistry
Complete the following course:
PHSC 2320 Biochemistry 4 SH

Pharmacology/Medicinal Chemistry 1
Complete the following course:
PHSC 4501 Pharmacology/Medicinal Chemistry 1 5 SH

Writing for the Health Professions
Complete the following course with a grade of C or higher:
ENGL 3306 Advanced Writing in the Health Professions 4 SH

Pharmaceutics 1
Complete the following course:
PHSC 3411 Pharmaceutics 1 4 SH
**SEMESTER 6 (SUMMER)**

**Health-Care Systems**
Complete the following course:
PHMD 2350 Health-Care Systems 3 SH

**Communication Skills for Pharmacists**
Complete the following course with corresponding lab:
PHMD 2310 Communication Skills for Pharmacists 3 SH
with PHMD 2311 Lab for PHMD 2310 1 SH

**Pharmacology/Medicinal Chemistry 2**
Complete the following course:
PHSC 4502 Pharmacology/Medicinal Chemistry 2 5 SH

**Pharmaceutics Laboratory**
Complete the following course:
PHSC 3419 Pharmaceutics Laboratory 1 SH

**Pharmaceutics 2**
Complete the following course:
PHSC 3412 Pharmaceutics 2 4 SH

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**SEMESTER 7 (SPRING)**

**Pharmacokinetics and Biopharmaceutics**
Complete the following course:
PHSC 3430 Pharmacokinetics and Biopharmaceutics 3 SH

**Immunology**
Complete the following course:
PHSC 2330 Immunology 3 SH

**Comprehensive Disease Management 1 and 2**
Complete the following two courses with corresponding seminar:
PHMD 4586 Comprehensive Disease Management 1 4 SH
PHMD 4587 Comprehensive Disease Management 2 4 SH
with PHMD 4588 Comprehensive Disease Management Seminar 1/2 1 SH

**Research Methodology and Biostatistics**
Complete the following course:
PHMD 3450 Research Methodology and Biostatistics 4 SH

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**SEMESTER 8 (SUMMER)**

**Therapeutic Drug Monitoring**
Complete the following course:
PHMD 6216 Therapeutic Drug Monitoring 2 SH

**Toxicology**
Complete the following course:
TOXC 5570 Clinical Toxicology 2 SH

**Pharmacy Care Management**
Complete the following course:
PHMD 6250 Pharmacy Care Management 3 SH

**Comprehensive Disease Management 3**
Complete the following course with corresponding seminar:
PHMD 6233 Comprehensive Disease Management 3 4 SH
with PHMD 6234 Comprehensive Disease Management Seminar 3 1 SH

**Drug Information**
Complete the following course:
PHMD 6223 Drug Information and Evaluation 3 SH

**Free Elective**
Complete one course outside pharmacy.

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**SEMESTER 9 (FALL)**

**Comprehensive Disease Management 4 and 5**
Complete the following two courses with corresponding seminar:
PHMD 6254 Comprehensive Disease Management 4 4 SH
PHMD 6255 Comprehensive Disease Management 5 4 SH
with PHMD 6256 Comprehensive Disease Management Seminar 4/5 1 SH

**Jurisprudence**
Complete the following course:
PHMD 6330 Jurisprudence 3 SH

**Pharmaceutical Care Practice 1 and Lab**
Complete the following course with corresponding lab:
PHMD 6365 Pharmaceutical Care Practice 1 1.5 SH
with PHMD 6366 Lab for PHMD 6365 0.5 SH

**Free Elective**
Complete any one elective.

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**SEMESTER 10 (SPRING)**

**Comprehensive Disease Management 6 and 7**
Complete the following two courses with corresponding seminar:
PHMD 6266 Comprehensive Disease Management 6 4 SH
PHMD 6267 Comprehensive Disease Management 7 4 SH
with PHMD 6268 Comprehensive Disease Management Seminar 6/7 1 SH

**Pharmacoeconomics**
Complete the following course:
PHMD 6270 Pharmacoeconomics 4 SH

**Pharmaceutical Care Practice 2 and Lab**
Complete the following course with corresponding lab:
PHMD 6375 Pharmaceutical Care Practice 2 1.5 SH
with PHMD 6376 Lab for PHMD 6375 0.5 SH

**Free Elective**
Complete any one elective.
YEAR 6 (SUMMER, FALL, SPRING)

Advanced Practice Experience
Select courses from the following list to complete six 6-week rotations for a total of 36 semester hours:
PHMD 6440 to PHMD 6468

NU CORE REQUIREMENTS
See page 26 for requirement list.

GENERAL ELECTIVES
Additional courses taken beyond college and major course requirements to satisfy graduation credit requirements.

COOPERATIVE EDUCATION

UNIVERSITY-WIDE REQUIREMENTS
210 total semester hours required
Minimum 2.000 GPA required