

Medicinal Chemistry

MASTER OF SCIENCE

Northeastern University
Bouvé College of
Health Sciences

The Master of Science in Medicinal Chemistry integrates aspects of contemporary medicinal chemistry and pharmacology, emphasizing topics most relevant to therapeutics design, discovery, and action.

Through in-depth elective courses, the program offers students the opportunity to develop medicinal chemistry expertise that can be applied to a practice-oriented career in the pharmaceutical industry as medical writers, medical liaison specialists, or even pharmaceutical product representatives.

PROGRAM BENEFITS

Apply theory to practice with co-op and internship opportunities throughout Boston, the hub of the big-pharma/biotech industry.

Learn and collaborate with industry-practiced faculty members who act as a resource for professional development and provide guidance to help advance your career.

Gain preparation for a full PhD by applying MS in Medicinal Chemistry coursework to the PhD program requirements.

PROGRAM OUTCOMES

Students who complete the program will be able to:

Evaluate critical topics of contemporary focus in medicinal chemistry.

Identify major themes, knowledge gaps, and research problems related to drug design, profiling, and clinical application.

Synthesize novel chemical matter as potential probes/drugs.

Advance drug discovery and translational medicine by utilizing modern approaches in chemical synthesis.

CURRICULUM OUTLINE

Required Courses (14-16 semester hours):

- Concepts in Pharmaceutical Science
- Concepts in Pharmaceutical Science 2
- Research Skills and Ethics or Ethical Problems in Health Sciences Research
- Organic Synthesis 1
- Principles of Spectroscopy of Organic Compounds
- Organic Synthesis 2
- Bioorganic Chemistry
- Principles of Drug Design
- The Chemistry and Biology of Drugs of Abuse
- Behavioral Pharmacology and Drug Discovery
- Biophysical Methods in Drug Discovery

Sample Electives (6 semester hours):

- Integrated Anatomy and Physiology
- Drug Safety and Immunogenicity
- Bioanalytical Chemistry

Total Number of Semester Hours: 33

- On average, students can complete this degree in two years.
- Minimum 3.0 GPA required



With more than 100 undergraduate and graduate programs, the Bouvé College of Health Sciences offers students extraordinary opportunities in three preeminent schools: Health Professions, Nursing, and Pharmacy. These schools are united across disciplines, preparing the next generation of highly skilled, versatile, and enterprising healthcare leaders, while advancing high-impact research to address the world's challenging issues. Spanning multiple campuses, Bouvé's interprofessional classroom approaches mirror today's collaborative reality in healthcare and research. Simulation exercises prepare students for real-life crises, while state-of-the-art laboratories foster high-impact research where even first-year students participate. Lectures and theories come alive and are honed through unrivaled co-ops and clinicals in Boston, the hub of health innovation, or through placements around the globe.

Northeastern University

Founded in 1898, Northeastern is a global research university and the recognized leader in experience-driven lifelong learning. Our world-renowned experiential approach empowers our students, faculty, alumni, and partners to create impact far beyond the confines of discipline, degree, and campus.

Our locations—in Boston; Charlotte, North Carolina; London; Portland, Maine; San Francisco; Seattle; Silicon Valley; Toronto; Vancouver; and the Massachusetts communities of Burlington and Nahant—are nodes in our growing global university system. Through this network, we expand opportunities for flexible, student-centered learning and collaborative, solutions-focused research.

Northeastern's comprehensive array of undergraduate and graduate programs—in a variety of on-campus and online formats—lead to degrees through the doctorate in nine colleges and schools. Among these, we offer more than 195 multidisciplinary majors and degrees designed to prepare students for purposeful lives and careers.