Master of Science in BIOINFORMATICS

> information
> insight
> innovation

Northeastern University
College of Science
Master of Science in Bioinformatics

The College of Science at Northeastern University is committed to delivering cutting-edge programs that foster interdisciplinary thinking, research, and the pursuit of innovation-driven discoveries that have an impact on lives. That commitment and vision are at the very core of the Master of Science in Bioinformatics. Combining challenging academics in biology, computer science, and information technology with real-world experience, the program helps students integrate the knowledge, skills, experience, and confidence they need to achieve their goals and make a difference in our world.

The Curriculum

Northeastern’s interdisciplinary curriculum combines core coursework in bioinformatic computational methods, programming, and statistics with graduate electives that offer students the flexibility to specialize and build broader knowledge in both life sciences and computer science. The university’s signature experiential learning model connects students with leading industry employers through three- or six-month co-ops that integrate classroom study with a practical, professional experience.

• Required Core (20 semester hours)
  – Bioinformatics Computational Methods 1 & 2
  – Bioinformatics Programming
  – Statistics for Bioinformatics
  – Bioinformatics Seminar
  – Ethics in Biological Research

• Electives (12 semester hours)

  Students select from a diverse array of graduate electives, including Molecular Modeling, Database Management, Molecular Cell Biology, Graduate Biochemistry, and Web Development.

• Co-op (3 to 6 months)

  Students usually complete the program in two years.
The Opportunity

Bioinformatics

Big Data. It’s today’s buzzword. It’s also a driving force behind the explosive demand for trained professionals in the field of bioinformatics. With high-throughput genomic assays generating significantly more data, research within the life sciences is increasingly data-intensive. As a result, the need for individuals with the broad, interdisciplinary knowledge and skills to plan, mine, analyze, and interpret large-scale data sets continues to grow.

Northeastern University’s Master of Science degree in Bioinformatics and Computational Biology provides the cross-disciplinary training in biology, computer science, and information technology—along with real-world experience—that prepares graduates to play pivotal roles in today’s cutting-edge life science, biotechnology, and pharmaceutical industries, including:

- Genomics
- Proteomics
- Personalized Medicine
- Drug Discovery
- Cancer Therapy

“Today, bioinformatics professionals are playing critical leadership roles throughout the life sciences and pharmaceutical industries.

Northeastern’s multi-disciplinary bioinformatics program is opening up new and exciting career opportunities for recent undergraduates and professionals alike—helping biologists become computer savvy, and retraining computer and IT specialists for the biotech industry.”

— Steven Vollmer, PhD
Director of Bioinformatics
The Faculty

Northeastern faculty members bring interdisciplinary perspective, experience, and collaboration to their classrooms and research, and infuse graduate students with the spirit of discovery. The faculty also provides students with ample opportunities to participate in research, including next-generation genomics, drug discovery, personalized genomics, network analyses, and proteomics.

Co-op

Students in the bioinformatics program gain real-world knowledge, awareness, perspective, and confidence during a three- or six-month graduate co-op in industry or academia.

As the recognized leader in experiential learning and a trusted source of high caliber students, Northeastern enjoys relationships with more than 2500 public and private sector employers on seven continents. Recent bioinformatic co-op placements have included the Broad Institute, Harvard Medical School, Brigham and Women’s Hospital, the Dana-Farber Cancer Institute, and pharmaceutical giants including Genzyme, Millennium, and Novartis.

“The Northeastern University’s Bioinformatics program gave me the solid foundation in molecular biology and bioinformatic computational methods I needed to apply my systems development skills to biological questions.

Northeastern’s established ties with co-op employers provided a number of choices, including the Perrimon Lab at Harvard Medical School, where I had the opportunity to co-author my first scientific paper and develop a web-based application for proteomic analysis of high-throughput data sets.”

—Charles Roesel, MS in Bioinformatics 2013
Two Outstanding Cities

Northeastern University’s Master of Science in Bioinformatics is offered in two vibrant, pioneering cities that boast resources and co-op opportunities perfectly aligned with the program.

Boston: Northeastern’s main campus is located in Boston, Massachusetts, a city known for world-class biomedical research, innovation in the life sciences, leading pharmaceutical corporations, and biotech companies—both large and small.

Seattle: Northeastern’s West Coast campus for graduate studies is located in Seattle, Washington, a city synonymous with software development, Internet titans, information technology, and biotechnology.

One Innovative University

Both the Boston and Seattle programs are offered on a full- or part-time basis and are designed to enable students to build their careers while maintaining their lives.

- Boston courses are offered in the late afternoon and evening to accommodate the work schedules and family commitments of working adults.

- Seattle courses are offered in a flexible online and on-campus hybrid format with frequent program starting dates for our Washington state students.

East Coast or West, Northeastern University delivers the same rigorous academics, cutting-edge research opportunities, innovative faculty, and supportive global alumni network for an unparalleled educational experience and solid foundation for an exciting and fulfilling career.
The Next Step

Apply Today

If you’re ready to make a difference in your life—and the world—apply today to the Northeastern University’s Master of Science in Bioinformatics. Applications are accepted through the University’s online system. To access the form, visit www.northeastern.edu/bioinformatics/how-to-apply

Application Requirements:

• Bachelor of Science* degree from an accredited four-year college or university

• Completion of the online application accompanied by three letters of recommendation, general GRE scores, and official transcripts

• TOEFL/IELTS scores if the student is from a non-English speaking country

*Students with non-science degrees may be accepted to the program based upon significant professional experience in IT, computer science, and/or biological science.

For more information, contact:

Steven Vollmer, PhD
Director of Bioinformatics
s.vollmer@neu.edu
gradbio@neu.edu

Northeastern University
College of Science