Biology, PhD

The PhD program entails course work from a core biology curriculum along with advanced courses in the student's area of research interest. This is complemented by intensive research and completion of a dissertation under faculty supervision. Faculty research includes biochemistry, microbiology, cell and molecular biology, genetics, neurobiology, regenerative biology, and the biology of reproduction. Two optional concentrations are available: cell and molecular biology and molecular microbiology.

*Students who have completed required coursework with a cumulative GPA of 3.000 or better may be eligible to receive an (*https://catalog.northeastern.edu/graduate/social-sciences-humanities/sociology/sociology-ma/)MS Biology *(*https://catalog.northeastern.edu/graduate/science/biology/biology-ms/*) degree. In addition, students who do not qualify for the doctoral degree, but who have completed required coursework with a cumulative GPA of 3.000 or better, may be eligible to receive a terminal* MS Biology *(*https://catalog.northeastern.edu/graduate/science/biology/biology-ms/*) degree. Note that no students will be admitted directly into the* MS Biology *(*https://catalog.northeastern.edu/graduate/science/biology/biology-ms/*) to pursue a master's degree.*

Program Requirements

- Concentrations and course offerings may vary by campus and/or by program modality. Please consult with your advisor or admissions coach for the course availability each term at your campus or within your program modality.
- Certain options within the program may be *required* at certain campuses or for certain program modalities. Please consult with your advisor or admissions coach for requirements at your campus or for your program modality.

Bachelor's Degree Entrance

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying examination
Annual review
Dissertation committee
Dissertation proposal
Colloquia (minimum of three)
First-author publication
Dissertation defense

Core Requirements

Code	Title	Hours
Research Ethics		
BIOL 7399	Research Problem Solving, Ethics, and Communication Skills	4
Colloquium		
Complete the following (repeatable) course twice:		2
BIOL 5100	Biology Colloquium	

Concentration or Electives Option

A concentration is not required. Students may complete the electives option in lieu of a concentration.

- Cell and Molecular Biology Concentration (p. 2)
- Molecular Microbiology Concentration (p. 2)
- Electives (p. 2)

Dissertation

Code	Title	Hours
BIOL 9990	Dissertation Term 1	
BIOL 9991	Dissertation Term 2	

Program Credit/GPA Requirements

30 total semester hours required
Minimum 3.000 GPA required

CELL AND MOLECULAR BIOLOGY CONCENTRATION

Code	Title	Hours
Required Coursework		
BIOL 6300	Biochemistry	4
BIOL 6401	Research Methods and Critical Analysis in Molecular Cell Biology	4
Electives		
In consultation with faculty advisor, complete 16 semester hours from the topic of cell and molecular biology:		16
BIOL 5103 to BIOL 9984		

MOLECULAR MICROBIOLOGY CONCENTRATION

Code	Title	Hours
Required Coursework		
BIOL 6300	Biochemistry	4
BIOL 6405	Prokaryotic Cell and Molecular Biology	4
Electives		
In consultation with faculty advisor, complete 16 semester hours from the topic of molecular microbiology:		16
BIOL 5103 to BIOL 9984		

ELECTIVES OPTION

Code	Title	Hours
Required Coursework		
Complete 8 semester hours from the following:		8
BIOL 6303	Neurobiology and Behavior	
BIOL 6401	Research Methods and Critical Analysis in Molecular Cell Biology	
BIOL 6405	Prokaryotic Cell and Molecular Biology	
Electives		
Complete 16 semester hours from the following:		16
BIOL 5103 to BIOL 9984		

Advanced Entry Program Requirements

The biology PhD program seeks to provide a broad background knowledge base in conjunction with in-depth study of a specialized area of biology. The program emphasizes close interaction between graduate students and faculty members in developing the intellectual and experimental skills required for creative, independent research.

Students entering the PhD program with a related Master of Science degree typically have significantly reduced course loads. An individualized course of study is designed by the biology graduate curriculum committee in consultation with the student and the student's advisor. The student can then focus on intensive research and completion of a dissertation under faculty supervision. Faculty research includes biochemistry, microbiology, cell and molecular biology, genetics, neurobiology, regenerative biology, and the biology of reproduction. Financial support (teaching assistantships or research assistantships) is normally provided for PhD students who are making satisfactory progress toward completion of their degree.

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying examination
Annual review
Dissertation committee
Dissertation proposal
Colloquia (minimum of three)
First-author publication
Dissertation defense

Core Requirements

APPROVED COURSE WORK

Consult your faculty advisor for acceptable courses.

APPROVED ELECTIVES
Consult your faculty advisor for acceptable electives.

Dissertation

Code	Title	Hours
BIOL 9990	Dissertation Term 1	
BIOL 9991	Dissertation Term 2	

Program Credit/GPA Requirements

Variable total semester hours required
Minimum 3.000 GPA required