BIOLOGY, PHD

The Biology Graduate Program represents many areas of biology, and interactions with a diverse group of colleagues provide opportunities to broaden every student's thinking and make connections between different fields and scientific approaches. Areas of research include microbiology, cell biology, development, physiology, neuroscience, animal behavior, plant biology, genetics, computational biology, evolution, ecology and biodiversity.

Each entering graduate student has the freedom to pursue topics ranging from the behavior of molecules to that of cells, organisms, genomes, and ecosystems. We encourage students to get broad exposure through lab rotations with any faculty member in the Biology Graduate Group. As students focus on more specific research interests, they tailor their graduate education accordingly, choosing courses from different departments and schools at Penn as appropriate.

Students complete most of their course work and lab rotations in the first year and then start their thesis research in the second year while completing their teaching requirement and preparing for their candidacy exams. Students are then fully focused on thesis research by the end of the second year. Students still have the option of taking additional courses in advanced years in order to enhance their graduate research.

For more information: http://www.bio.upenn.edu/graduate/

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2026 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.

Curriculum

Code	Title	Course Units
Foundation Course		
BIOL 7000	Advanced Topics in Current Biological Research	1
Writing Requirement		
BIOL 6010	Communication for Biologists	1
Core Courses		
Select two of the following:		2
BIOL 5022	Cell Signaling	
BIOL 5220	Human Evolutionary Genomics	
BIOL 5231	Genome Science and Genomic Medicine	
BIOL 5233	The Genetics of Adaptation: How sex, conflict, and pathogens shape modern genomes	
BIOL 5234	Epigenetics	
BIOL 5410	Evolutionary Biology	
BIOL 5430	Evolution and Ecology of Infectious Diseases	
BIOL 5517	Theoretical Population Biology	
BIOM 6000	Cell Biology	
Electives		
Select three electives with Attribute HPBI (https://catalog.upenn.edu/attributes/hpbi/) [1]		3
Independent Study and Research		**6.5**
BIOL 9999	Independent Study and Research	
Dissertation		**3**
BIOL 9950	Dissertation	
Teaching Requirement		
Two semesters of teaching are required		
Total Course Units		**16.5**

University PhD Benchmarks

In addition to Program requirements, the following milestones must be completed:

Code	Title	Course Units
Qualifying Evaluation		
Candidacy Examination		
Dissertation Defense/Oral Exam		
Dissertation Deposit		

For more information view the University's Academic Rules for PhD Programs (https://catalog.upenn.edu/pennbook/academic-rules-phd/).

[1] See the website for a list of electives: http://www.bio.upenn.edu/graduate/handbook/academic-topics/course-requirements (http://www.bio.upenn.edu/graduate/handbook/academic-topics/course-requirements/)