

# BIOLOGY: MECHANISMS OF DISEASE, BA

Among the most important and interesting areas of scientific investigation are the mechanisms that underlie disease. The study of this topic can be of great interest to those pursuing fundamental research, as well as to those drawn to medicine, biotechnology, law, and public health. The introductory and intermediate level course offerings of the Biology Department provide a foundation in understanding the fundamental principles underlying the mechanisms of disease. Advanced electives are selected from the fields of Microbes and Infectious Disease, Genetic Disease, Molecular Genetics and Genomics, and Biochemistry.

The minimum total course units (<https://www.college.upenn.edu/credits-needed-major>) for graduation in this major is 36. Double majors may entail more course units.

With permission from the Undergraduate Chair, two course units away or LPS courses may count toward the Biology major. This limit does not apply to Study Abroad.

**For more information:** <http://www.bio.upenn.edu/undergraduate/concentrations/mechanisms-disease>

For information about the General Education requirements, please visit the College of Arts & Sciences Curriculum (<https://www.college.upenn.edu/curriculum>) page.

Code	Title	Course Units
<b>College General Education Requirements and Free Electives</b>		
Foundational Approaches + Sectors <sup>1</sup> + Free Electives		18
<b>Major Requirements</b>		
<i>Introductory Biology</i>		
BIOL 121	Introduction to Biology - The Molecular Biology of Life	1
BIOL 123	Introductory Molecular Biology Laboratory	0.5
<i>Chemistry</i>		
Select 4 course units of Chemistry		4
<i>Mathematics Requirement</i>		
Select 1 course unit of Calculus		1
Select 1 course unit of Statistics		1
<i>Intermediate Biology</i>		
BIOL 204	Biochemistry	1
BIOL 205	Cell Biology	1
BIOL 221	Molecular Biology and Genetics	1
Additional BIOL Elective (1 to 1.5 course units)		1.5
<i>Advanced Electives</i>		
Select 1 course unit of Microbes & Infectious Disease		1
Select 2 course units of Genetic Disease		2
Select 1 course unit of Molecular Genetics and Genomics		1
Select 1 course unit of additional electives		1
<i>Research Requirement</i>		
BIOL 399	Independent Study	1

SURB <sup>2</sup>	Total Course Units
	36

- <sup>1</sup> You may count no more than one course toward both a Major and a Sector requirement. For Exceptions, check the Policy Statement (<http://www.college.upenn.edu/sectors-policy>).
- <sup>2</sup> Students are required to present their research at the annual Symposium on Undergraduate Research in Biology (SURB) poster session, held at the end of the Spring Term.

## Honors

Applicants must have a minimum GPA of 3.25 in the major and the thesis must be approved by the departmental honors committee.

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2018 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.