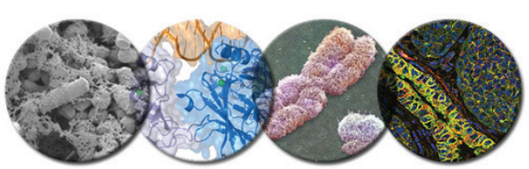
Students in the MIT Department of Biology thrive in an atmosphere that promotes exploration and collaboration across all areas of research and study. The department's strong faculty rankings reflect that MIT Biology professors have a passion for instruction and strive to teach each course better than it's ever been taught before. Rigorous standards and a supportive culture combine to foster a powerful environment for learning at MIT.

The department is home to approximately 200 undergraduates, 200 graduate students, 100+ postdoctoral researchers, and more than 60 world-renowned faculty, including:

- 3 Nobel laureates
- 30 members of the National Academy of Sciences
- 14 Howard Hughes Medical Institute (HHMI) investigators
- 5 recipients of the National Medal of Science

Headquartered at the Koch Biology Building 68, the activities of the department span five additional state-of-the-art research locations:

- Koch Institute for Integrative Cancer Research
- Whitehead Institute for Biomedical Research
- McGovern Center for Brain Research
- Picower Institute for Learning and Memory
- Broad Institute



The department of Biology conducts research in the following fields, and undergraduates are exposed to a broad range of these activities:

- Biochemistry and biophysics
- Bioengineering
- Cancer biology
- Cell biology
- Computational and systems biology
- Developmental biology
- Genetics
- Human genetics
- Immunology
- Microbiology
- Molecular medicine and human disease
- Neurobiology
- Plant molecular biology
- Structural biology

The undergraduate Biology program at MIT offers a robust course curriculum with an extensive lab research component, leading to a sophisticated understanding of the fundamental principles and current approaches in biology. This training provides excellent preparation for careers in such fields as:

- Academia/Research Institutions
- Medicine
- Biotechnology, biomedical and pharmaceutical industries
- Government and public policy
- Intellectual property/patent law
- Consulting/venture capital
- Science writing and communication
- Science education and outreach

For Further Information, Contact:

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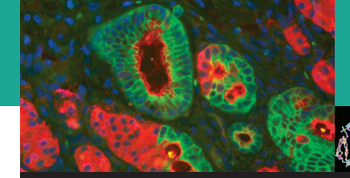
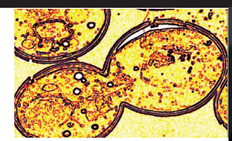
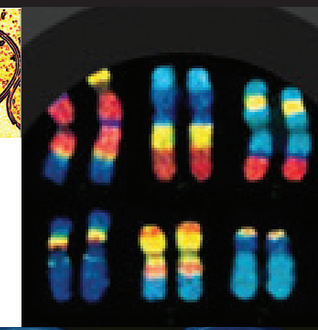


THE UNDERGRADUATE PROGRAM IN

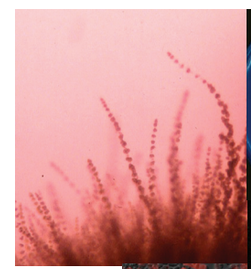
BIOLOGY AT MIT

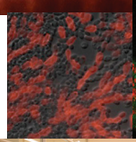


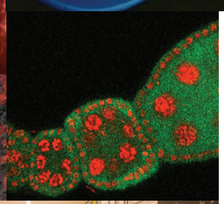


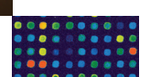
COURSE GUIDE

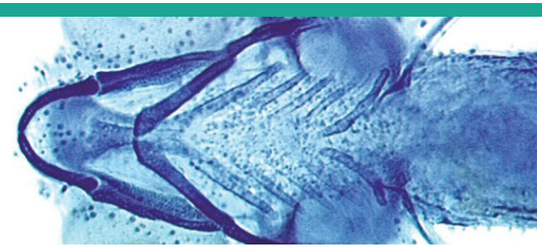
2020–2021











MIT Biology

SB IN BIOLOGY, COURSE 7

Required Lecture Subjects

Introductory Biology (choose one)

7.012	Fall	7.013^	Spring
7.015	Fall	7.014	Spring
		7.016	Spring

Core Subjects

5.111	Fall/Spring	Introductory Chemistry
OR 5.112	Fall	
OR 3.091	Fall/Spring	
5.12	Fall/Spring	Organic Chemistry
7.03	Fall/Spring	Genetics
7.05	Spring	Biochemistry
OR 5.07	Fall	
7.06	Fall/Spring	Cell Biology
5.601	Fall/Spring	Thermodynamics I &
5.602	Fall/Spring	Thermodynamics II
OR 20.110	Fall	

2.005, 3.012^, 8.044, or 10.213 will also substitute

Required Laboratory Subjects

7.002	Fall/Spring	Fundamentals of Experimental Molecular Biology
7.003	Fall/Spring	Molecular Biology Laboratory (CI-M)

Second CI-M

7.19	Fall/Spring	Communication in Experimental Biology

OR one CI-M subject from approved list:
6.129J, 8.13, 9.12, 9.17, 9.28, 10.26, 10.27, 10.28,10.29, 20.109, 20.380

^Not offered 2020-2021

Biology Restricted Electives

Choose three. Must be taken at the Undergraduate Level.

7.08J	Spring	Biological Chemistry II
7.093*	Spring	Modern Biostatistics
7.094*	Spring	Modern Computational Biology
7.20J	Fall	Human Physiology
7.21	Fall	Microbial Physiology
7.23J	Spring	Immunology
7.26	Spring	Molecular Basis of Infectious Disease
7.27	Spring	Principles of Human Disease
7.28	Spring	Molecular Biology
7.29J	Spring	Cellular Neurobiology
7.30J	Fall	Fundamentals of Ecology
7.32	Fall	Systems Biology
7.33J	Spring	Evolutionary Biology: Concepts, Models and Computation
7.371	Fall	Molecular and Engineering Principles Underlying Novel Biotherapeutics
7.45	Fall	The Hallmarks of Cancer
7.46	Fall	Building with Cells
7.49J	Spring	Developmental Neurobiology
9.17	Fall	Systems Neuroscience Laboratory (CI-M)
9.26J	Spring	Principles and Applications of Genetic Engineering for Biotechnology and Neuoscience

*Half semester subjects that together fulfill one biology restricted elective

MINOR IN BIOLOGY

5.12, 7.03, 7.05 (or 5.07), and 2 subjects from approved list: 7.002 & 7.003, 7.06, or any of the Restricted Electives.

SB IN CHEMISTRY AND BIOLOGY, COURSE 5-7

An interdepartmental program offered jointly by the departments of Chemistry and Biology focuses on the intersections of these two subject areas, encompassing Biochemistry and Chemical Biology. There is flexibility in the elective subjects and the lab tracks that enables students to tailor their major program to their specific interests.

For more information see chemistry.mit.edu

SB IN COMPUTER SCIENCE AND MOLECULAR BIOLOGY, COURSE 6-7

An interdepartmental curriculum offered jointly by EECS and the Department of Biology, Course 6-7 prepares students for careers in emerging areas at the interface of biology and engineering—including bioinformatics and computational molecular biology.

For more information see www.eecs.mit.edu

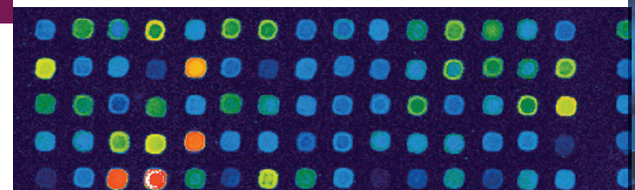
For interdepartmental programs, students are full members of both departments, with one academic advisor from each department.

LABORATORY EXPERIENCE

Students gain hands-on biology laboratory research experience through 7.002/7.003.

- 7.002 Fundamentals of Experimental Molecular Biology
- 7.003 Molecular Biology Laboratory
- Undergraduate Research Opportunities Program (UROP)

Students who demonstrate outstanding research effort may participate in the annual Undergraduate Research Symposium.



ADVISING

Every student majoring in Biology, including double-majors, Course 5-7 and Course 6-7 students, is assigned to a Biology faculty advisor.

- **Two meetings per semester: registration and mid-term**
- **Additional meetings upon request**

Help with:

- **Course selections and online approvals**
- **Online add/drop approval**
- **Academic progress**
- **Career advice**

BIOLOGY UNDERGRADUATE STUDENT ASSOCIATION (BUSA)

The Biology Undergraduate Student Association (BUSA) serves all MIT students with an interest in biology. BUSA helps to broaden the biology undergraduate experience through both social and academic activities.

Contact us at: bexec@mit.edu