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
- 16 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 BIOLOGY CURRICULUM

SB IN BIOLOGY, COURSE 7

Required Lecture Subjects

Introductory Biology (choose one)
- 7.012 Fall
- 7.015 Fall
- 7.016 Fall

Core Subjects

- 5.111 Fall/Spring Introductory Chemistry
- 5.112 Fall
- 3.091 Fall/Spring Organic Chemistry
- 7.03 Fall/Spring Genetics
- 7.05 Spring Biochemistry
- 5.07 Fall
- 7.06 Fall/Spring Cell Biology
- 5.601 Fall/Spring Thermodynamics I & II
- 5.602 Fall/Spring Thermodynamics II
- 20.110 Fall
- 2.005, 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 (Course 7 Capstone, recommended by the Biology Department)

OR one CI-M subject from approved list: 6.4880J, 9.12, 9.17, 10.26, 10.27, 10.28,10.29, 20.109, 20.389

Biology Restricted Electives

Choose three. Must be taken at the Undergraduate Level.

7.08J Spring Fundamentals of Chemical Biology
7.093* Spring Modern Biostatistics
7.094* Spring Modern Computational Biology
7.20J Fall Human Physiology
7.21 Fall Microbial Physiology
7.233 Spring Immunology
7.26 Spring Molecular Basis of Infectious Disease
7.27 Spring Principles of Human Disease
7.28 Spring Molecular Biology
7.290 Spring Cellular Neurobiology
7.300 Fall Fundamentals of Ecology
7.32 Fall Systems Biology
7.333 Spring Evolutionary Biology Concepts, Models and Computation
7.35 Spring Human Genetics and Genomics
7.371 Fall Biological and Engineering Principles Underlying Novel Biotherapeutics
7.45 Fall The Hallmarks of Cancer
7.46 Fall Building with Cells
7.493 Spring Developmental Neurobiology
9.17 Fall Systems Neuroscience Laboratory (CI-M)
9.26J Spring Principles and Applications of Genetic Engineering for Biotechnology and Neuroscience

*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

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