

BIOLOGICAL ENGINEERING (COURSE 20)

Department of Biological Engineering (<https://catalog.mit.edu/schools/engineering/biological-engineering/#undergraduatetext>)

Bachelor of Science in Biological Engineering

General Institute Requirements (GIRs)

The General Institute Requirements include a Communication Requirement that is integrated into both the HASS Requirement and the requirements of each major; see details below.

Summary of Subject Requirements	Subjects
Science Requirement	6
Humanities, Arts, and Social Sciences (HASS) Requirement; at least two of these subjects must be designated as communication-intensive (CI-H) to fulfill the Communication Requirement.	8
Restricted Electives in Science and Technology (REST) Requirement [can be satisfied by 5.12 and 18.03 in the Departmental Program]	2
Laboratory Requirement (12 units) [can be satisfied by 20.109]	1
Total GIR Subjects Required for SB Degree	17

Physical Education Requirement

Swimming requirement, plus four physical education courses for eight points.

Departmental Program

Choose at least two subjects in the major that are designated as communication-intensive (CI-M) to fulfill the Communication Requirement.

Required Core Subjects	Units
Tier I	
5.12 Organic Chemistry I	12
6.100A Introduction to Computer Science Programming in Python	6
6.100B Introduction to Computational Thinking and Data Science ¹	6
7.03 Genetics	12
18.03 Differential Equations	12
20.110[<i>J</i>] Thermodynamics of Biomolecular Systems	12
Tier II	
5.07[<i>J</i>] Introduction to Biological Chemistry or 7.05 General Biochemistry	12
7.06 Cell Biology	12

20.109 Laboratory Fundamentals in Biological Engineering (CI-M)	15
20.309[<i>J</i>] Instrumentation and Measurement for Biological Systems	12
20.320 Analysis of Biomolecular and Cellular Systems	12
Tier III	
20.330[<i>J</i>] Fields, Forces and Flows in Biological Systems	12
20.380 Biological Engineering Design (CI-M)	12
Restricted Electives	
Tracks TBD	33-36
Units in Major	180-183
Unrestricted Electives	48
Units in Major That Also Satisfy the GIRs	(36)
Total Units Beyond the GIRs Required for SB Degree	192-195

The units for any subject that counts as one of the 17 GIR subjects cannot also be counted as units required beyond the GIRs.

¹ Combination of 6.100A Introduction to Computer Science Programming in Python and 6.100B Introduction to Computational Thinking and Data Science counts as a REST.