

CHEMICAL-BIOLOGICAL ENGINEERING (COURSE 10-B)

Department of Chemical Engineering (<http://catalog.mit.edu/schools/engineering/chemical-engineering/#undergraduatetext>)

Bachelor of Science in Chemical-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 from among 5.07[J] or 7.05, 5.12, 7.03, 10.301, and 18.03 in the Departmental Program]	2
Laboratory Requirement (12 units) [can be satisfied by 10.7003[J] in the Departmental Program]	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 Subjects	Units
Foundational Subjects	
5.12 Organic Chemistry I	12
5.601 Thermodynamics I	6
7.002 Fundamentals of Experimental Molecular Biology	6
7.03 Genetics	12
10.10 Introduction to Chemical Engineering	12
10.7003[J] Applied Molecular Biology Laboratory (CI-M)	12
18.03 Differential Equations ¹	12
Intermediate Subjects	
7.05 General Biochemistry	12
or 5.07[J] Introduction to Biological Chemistry	

7.06 Cell Biology	12
10.213 Chemical and Biological Engineering Thermodynamics	12
10.301 Fluid Mechanics	12
10.302 Transport Processes	12
<i>Select one of the following:</i>	15
10.27 Energy Engineering Projects Laboratory (CI-M)	
10.28 Chemical-Biological Engineering Laboratory (CI-M)	
10.29 Biological Engineering Projects Laboratory (CI-M)	

Advanced Subjects

10.37 Chemical Kinetics and Reactor Design	12
10.490 Integrated Chemical Engineering	9
<i>Select one of the following:</i>	6

10.492A Integrated Chemical Engineering Topics I	
10.492B Integrated Chemical Engineering Topics I	
10.493 Integrated Chemical Engineering Topics II	
10.494A Integrated Chemical Engineering Topics III	
10.494B Integrated Chemical Engineering Topics III	

Restricted Elective

One subject of at least 6 units in Chemical Engineering ²	6
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Units in Major **180**

Unrestricted Electives **48**

Units in Major That Also Satisfy the GIRs (36)

Total Units Beyond the GIRs Required for SB Degree **192**

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 18.032 Differential Equations is also an acceptable option.

² May be satisfied with a second term of 10.492A, 10.492B, 10.493, 10.494A or 10.494B; or a second term of 10.490 (with permission of instructor). Graduate subjects may not be used as restricted electives. In addition, the following undergraduate subjects may not be used as restricted electives: 10.04, 10.792[J] 10.806, 10.910, 10.911, 10.UR, 10.URG, and 10.THU.