# 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, 5.60, 7.03, 10.301, and 18.03 in the Departmental Program] | 2 |
| Laboratory Requirement (12 units) [can be satisfied by 10.702[J]] | 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 |
| 5.60 | Thermodynamics and Kinetics | 12 |
| 7.03 | Genetics | 12 |
| 10.10 | Introduction to Chemical Engineering | 12 |
| 10.702[J] | Introduction to Experimental Biology and Communication (CI-M) | 18 |
| 18.03 | Differential Equations [1] | 12 |
| ***Intermediate Subjects*** | | |
| 7.05 or 5.07[J] | General Biochemistry Biological Chemistry I | 12 |
| 7.06 | Cell Biology | 12 |
| 10.213 | Chemical and Biological Engineering Thermodynamics | 12 |
| 10.301 | Fluid Mechanics | 12 |
| 10.302 | Transport Processes | 12 |
| *Select one of the following:* | | 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 | 9 |
| 10.490 | Integrated Chemical Engineering I | 8 |
| 10.491 | Integrated Chemical Engineering II | 8 |
| *Select two of the following:* | | 8 |
| 10.492 | Integrated Chemical Engineering Topics I | |
| 10.493 | Integrated Chemical Engineering Topics II | |
| 10.494 | Integrated Chemical Engineering Topics III | |
| **Units in Major** | | 186 |
| **Unrestricted Electives** | | 48 |
| Units in Major That Also Satisfy the GIRs | | (36) |
| Total Units Beyond the GIRs Required for SB Degree | | 198 |

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.*