CHEMICAL ENGINEERING (COURSE 10)

Department of Chemical Engineering (*https://catalog.mit.edu/schools/engineering/chemical-engineering/#undergraduatetext*)

Bachelor of Science in Chemical 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 5.12, 5.07[J] or 7.05, 5.611/5.612, 10.301, and 18.03 in the Departmental Program]	2
Laboratory Requirement (12 units) [can be satisfied by 5.310]	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
5.310	Laboratory Chemistry (CI-M)	12
5.601	Thermodynamics I	6
10.10	Introduction to Chemical Engineering	12
18.03	Differential Equations [1]	12
Intermediate Subjects		
10.213	Chemical and Biological Engineering Thermodynamics	12
10.301	Fluid Mechanics	12
10.302	Transport Processes	12
Select one of the following:		12
5.03	Principles of Inorganic Chemistry I	
5.07[J]	Introduction to Biological Chemistry	
5.13	Organic Chemistry II	
5.611 & 5.612	Introduction to Spectroscopy and Electronic Structure of Molecules	
7.05	General Biochemistry	
Select one of the following:		15
10.26	Chemical Engineering Projects Laboratory (CI-M)	
10.27	Energy Engineering Projects Laboratory (CI-M)	
10.28	Chemical-Biological Engineering Laboratory (CI-M)	
10.29	Biological Engineering Projects Laboratory (CI-M)	
10.467	Polymer Science Laboratory (CI-M)	
Advanced Subjects		
10.32	Separation Processes	9
10.37	Chemical Kinetics and Reactor Design	12
10.490	Integrated Chemical Engineering	9
Select one of the following: [2,3]		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 Electives		
Select 21-30 units of restricted electives, including one from each category below:		21-30
One subject of at least 6 units in Chemical Engineering [2, 3]		
One subject of at least 9 units in Chemical Engineering [3]		
One engineering laboratory subject of at least 6 units [4]		
Units in Major		**174-183**
Unrestricted Electives		**48**
Units in Major That Also Satisfy the GIRs		(36)
Total Units Beyond the GIRs Required for SB Degree		**186-195**

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] *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, 10.494B, or a second term of 10.490 Integrated Chemical Engineering (with permission of instructor).*

[3] *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 and 10.911 Independent Research Problem, 10.UR and 10.URG Undergraduate Research, and 10.THU.*

[4] *Consult the Chemical Engineering Student Office for a list of acceptable subjects.*