ENGINEERING (COURSE 22-ENG)

Department of Nuclear Science and Engineering (*http://catalog.mit.edu/schools/engineering/nuclear-science-engineering/#undergraduatetext*)

Bachelor of Science in 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 [can be satisfied by 22.04[J] in the Departmental Program]; 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 1.00, 2.086, 6.100A/6.100B, 18.03, 18.05, 18.600, and 22.01 in the Departmental Program]	2
Laboratory Requirement (12 units) [can be satisfied by 22.09 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.

Core Requirements		Units
2.005	Thermal-Fluids Engineering I	12
18.03	Differential Equations [1]	12
22.01	Introduction to Nuclear Engineering and Ionizing Radiation	12
22.04[J]	Social Problems of Nuclear Energy (CI-M)	12
22.09	Principles of Nuclear Radiation Measurement and Protection (CI-M)	15
System Specialization		
22.06	Engineering of Nuclear Systems	12
or 22.061	Fusion Energy	
Computational Elective		

Select one of the following:		12
1.000	Introduction to Computer Programming and Numerical Methods for Engineering Applications	
2.086	Numerical Computation for Mechanical Engineers	
6.100A & 6.100B	Introduction to Computer Science Programming in Python and Introduction to Computational Thinking and Data Science [2]	
12.010	Computational Methods of Scientific Programming	
22.C25[J]	Real World Computation with Julia	
Mathematics Elective		

Select one of the following:		12
6.3700	Introduction to Probability	
18.04	Complex Variables with Applications	
18.05	Introduction to Probability and Statistics	
18.075	Methods for Scientists and Engineers	
18.600	Probability and Random Variables	
Senior Project		

Select one of the following:		15
22.033	Nuclear Systems Design Project	
22.THT & 22.THU	Undergraduate Thesis Tutorial and Undergraduate Thesis (CI-M)	
Focus Area		

A program of 72 units of electives from a proposal of study approved by the department	72
Units in Major	**186**
Unrestricted Electives	**48**
Units in Major That Also Satisfy the GIRs	(48)
Total Units Beyond the GIRs Required for SB Degree	**186**

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]   *CSE.C20 is permitted in place of 6.100B.*