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**

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science Requirement</td>
<td>6</td>
</tr>
<tr>
<td>Humanities, Arts, and Social Sciences (HASS)</td>
<td>8</td>
</tr>
<tr>
<td>Restricted Electives in Science and Technology (REST)</td>
<td>2</td>
</tr>
<tr>
<td>Laboratory Requirement (12 units)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total GIR Subjects Required for SB Degree</strong></td>
<td>17</td>
</tr>
</tbody>
</table>

**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**

- 2.005 Thermal-Fluids Engineering I 12
- 18.03 Differential Equations 12
- 22.01 Introduction to Nuclear Engineering and Ionizing Radiation 12
- 22.03 Introduction to Nuclear Design 6
- 22.04[J] Social Problems of Nuclear Energy (CI-M) 12
- 22.09 Principles of Nuclear Radiation Measurement and Protection (CI-M) 12

**System Specialization**

- 22.06 Engineering of Nuclear Systems 12
- or 22.061 Fusion Energy 12

**Computational Elective**

Select one of the following: 12

- 1.000 Computer Programming for Engineering Applications
- 2.086 Numerical Computation for Mechanical Engineers
- 6.0001 & 6.0002 Introduction to Computer Science Programming in Python and Introduction to Computational Thinking and Data Science
- 12.010 Computational Methods of Scientific Programming

**Mathematics Elective**

Select one of the following: 12

- 6.041 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**
189

**Unrestricted Electives**
48

**Units in Major That Also Satisfy the GIRs** (48)

**Total Units Beyond the GIRs Required for SB Degree**
189

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