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

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.

Restricted Electives in Science and Technology (REST) Requirement [can be satisfied from among 6.0001/6.0002, 6.041, 16.001, and 18.03 in the Departmental Program]

Laboratory Requirement (12 units) [can be satisfied by 6.111, 16.405[J], 16.621, 16.821, or 16.831][J] in the Departmental Program]

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.

Departmental Core

<table>
<thead>
<tr>
<th>Units</th>
<th>Introduction to Computer Science</th>
<th>Programming in Python</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>6.0001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6.0002</td>
<td>Introduction to Computational Thinking and Data Science</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Unified Engineering: Materials and Structures</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Unified Engineering: Signals and Systems</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Unified Engineering: Fluid Dynamics</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Unified Engineering: Thermodynamics</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Principles of Automatic Control</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Dynamics</td>
</tr>
</tbody>
</table>

16.09 Statistics and Probability or 6.041 Introduction to Probability 18.03 Differential Equations

Professional Area Subjects
Select four subjects from at least three professional areas.

- Fluid Mechanics
- Aerodynamics
- Materials and Structures
- Structural Mechanics
- Propulsion
- Aerospace Propulsion
- Computational Tools
- Computational Modeling and Data Analysis in Aerospace Engineering
- Estimation and Control
- Feedback Control Systems
- Computer Systems
- Introductory Digital Systems Laboratory
- Real-Time Systems and Software Communications Systems
- Communication Systems and Networks
- Humans and Automation
- Human Systems Engineering
- Principles of Autonomy and Decision Making

Laboratory and Capstone Subjects
Select one of the following:
- Flight Vehicle Engineering (CI-M)
- Space Systems Engineering (CI-M)

Select one of the following sequences:
- Robotics: Science and Systems (CI-M)
- Experimental Projects I
- Experimental Projects II (CI-M)
- Flight Vehicle Development (CI-M)
- Space Systems Development (CI-M)

Units in Major
180-186

Unrestricted Electives
48

Units in Major That Also Satisfy the GIRs (36)

Total Units Beyond the GIRs Required for SB Degree
192-198
AEROSPACE ENGINEERING (COURSE 16)

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. For students who wish to complete an option in aerospace information technology, 36 of the 48 units must come from subjects other than 16.100, 16.20, 16.50, or 16.90.