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>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science Requirement</td>
<td>6</td>
</tr>
<tr>
<td>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.</td>
<td>8</td>
</tr>
<tr>
<td>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)</td>
<td>2</td>
</tr>
<tr>
<td>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)</td>
<td>1</td>
</tr>
<tr>
<td>Total GIR Subjects Required for SB Degree</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.

Departmental Core

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

16.09 Statistics and Probability 12
or 6.041 Introduction to Probability
18.03 Differential Equations 1 12

Professional Area Subjects
Select four subjects from at least three professional areas. 48

*Fluid Mechanics
16.100 Aerodynamics
Materials and Structures
16.20 Structural Mechanics
Propulsion
16.50 Aerospace Propulsion
Computational Tools
16.90 Computational Modeling and Data Analysis in Aerospace Engineering
Estimation and Control
16.30 Feedback Control Systems
Computer Systems
6.111 Introductory Digital Systems Laboratory
16.35 Real-Time Systems and Software Communications Systems
16.36 Communication Systems and Networks
Humans and Automation
16.400 Human Systems Engineering

Laboratory and Capstone Subjects
Select one of the following: 12

16.82 Flight Vehicle Engineering (CI-M)
16.83[J] Space Systems Engineering (CI-M)

Select one of the following sequences: 12-18


Experimental Projects:
16.621 Experimental Projects I
16.622 Experimental Projects II (CI-M)

Flight Vehicle Development:
16.821 Flight Vehicle Development (CI-M)

Space Systems Development:
16.831[J] 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
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.