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.

<table>
<thead>
<tr>
<th>Summary of Subject Requirements</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</td>
<td>8</td>
</tr>
<tr>
<td>at least two of these subjects must be designated as communication-intensive (CI-H) to fulfill the Communication Requirement.</td>
<td></td>
</tr>
<tr>
<td>Restricted Electives in Science and Technology (REST) Requirement</td>
<td>2</td>
</tr>
<tr>
<td>[can be satisfied from among 6.100A/6.100B, 6.3700, 16.001, and 18.03 in the Departmental Program]</td>
<td></td>
</tr>
<tr>
<td>Laboratory Requirement (12 units) [can be satisfied by 6.2050, 16.405[J], 16.622, 16.821, or 16.831[J] in the Departmental Program]</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.

**Departmental Core**

- 6.100A Introduction to Computer Science Programming in Python
- 6.100B Introduction to Computational Thinking and Data Science
- 16.001 Unified Engineering: Materials and Structures
- 16.002 Unified Engineering: Signals and Systems
- 16.003 Unified Engineering: Fluid Dynamics
- 16.004 Unified Engineering: Thermodynamics and Propulsion
- 16.06 Principles of Automatic Control
- 16.07 Dynamics

- 16.09 Statistics and Probability
- or 6.3700 Introduction to Probability
- 18.03 Differential Equations

**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**

- 6.2050 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
- 16.410[J] Principles of Autonomy and Decision Making

**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.