AEROSPACE ENGINEERING (COURSE 16)

Department of Aeronautics and Astronautics (http://catalog.mit.edu/schools/engineering/aeronautics-astronautics/#undergraduatetext)

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>HASS Requirement</th>
<th>Aviation Electives (REST)</th>
<th>Laboratory Requirement (12 units)</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>
<tr>
<td></td>
<td>Humanities, Arts, and Social Sciences (HASS)</td>
<td>Requirement; at least two of these subjects must be designated as communication-intensive (CI-H) to fulfill the Communication Requirement.</td>
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<td></td>
<td>Restricted Electives in Science and Technology (REST)</td>
<td>Requirement [can be satisfied from among 6.00, 6.041A/6.041B, 16.001, and 18.03 in the Departmental Program]</td>
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<td></td>
<td>Laboratory Requirement (12 units)</td>
<td>[can be satisfied by 16.622, 16.821, or 16.831][J] in the Departmental Program]</td>
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<tr>
<td></td>
<td>Total GIR Subjects Required for SB Degree</td>
<td>17</td>
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</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>6.00</th>
<th>Introduction to Computer Science and Programming</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16.001</td>
<td>Unified Engineering: Materials and Structures</td>
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<tr>
<td></td>
<td>16.002</td>
<td>Unified Engineering: Signals and Systems</td>
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<td></td>
<td>16.003</td>
<td>Unified Engineering: Fluid Dynamics</td>
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<td></td>
<td>16.004</td>
<td>Unified Engineering: Thermodynamics</td>
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<td></td>
<td>16.06</td>
<td>Principles of Automatic Control</td>
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<td></td>
<td>16.07</td>
<td>Dynamics</td>
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<tr>
<td></td>
<td>18.03</td>
<td>Differential Equations</td>
</tr>
</tbody>
</table>

Select one of the following:

- Statistics and Probability
- Introduction to Probability I & Introduction to Probability II

Professional Area Subjects

Select four subjects from at least three professional areas. 2

- Fluid Mechanics
- Aerodynamics
- Materials and Structures
- Structural Mechanics
- Propulsion
- Aerospace Propulsion
- Computational Tools
- Computational Methods 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
- Human Systems Engineering
- Robotics: Science and Systems
- 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 three sequences:

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

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

- Space Systems Development:
  - Space Systems Development (CI-M)

Units in Major

- 168

Unrestricted Electives

- 48

Units in Major That Also Satisfy the GIRs

- (36)

Total Units Beyond the GIRs Required for SB Degree

- 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. 18.034 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.