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)

<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>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 (can be satisfied by 16.622, 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>

Communication Requirement

2 subjects designated as communication-intensive in Humanities, Arts, and Social Sciences (CI-H; see HASS Requirement, above)

2 subjects designated as communication-intensive in the Major (CI-M; see departmental program, below)

Physical Education Requirement

Swimming requirement, plus four physical education courses for eight points (See Physical Education Requirement for details.)

Departmental Program

<table>
<thead>
<tr>
<th>Departmental Core</th>
<th>Units</th>
</tr>
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<tbody>
<tr>
<td>6.0001 Introduction to Computer Science Programming in Python</td>
<td>6</td>
</tr>
<tr>
<td>6.0002 Introduction to Computational Thinking and Data Science</td>
<td>6</td>
</tr>
<tr>
<td>16.001 Unified Engineering I</td>
<td>12</td>
</tr>
<tr>
<td>16.002 Unified Engineering II</td>
<td>12</td>
</tr>
<tr>
<td>16.003 Unified Engineering III</td>
<td>12</td>
</tr>
<tr>
<td>16.004 Unified Engineering IV</td>
<td>12</td>
</tr>
<tr>
<td>16.06 Principles of Automatic Control</td>
<td>12</td>
</tr>
<tr>
<td>16.07 Dynamics</td>
<td>12</td>
</tr>
<tr>
<td>16.09 Statistics and Probability</td>
<td>12</td>
</tr>
<tr>
<td>or 6.041 Probabilistic Systems Analysis</td>
<td></td>
</tr>
<tr>
<td>18.03 Differential Equations</td>
<td>12</td>
</tr>
</tbody>
</table>

Professional Area Subjects

Select four subjects from at least three professional areas.

- Fluid Mechanics
- 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
- Humans and Automation
- Human Systems Engineering
- Principles of Autonomy and Decision Making

Laboratory and Capstone Subjects

Select one of the following:

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

Select one of the following three sequences:

- 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)

Unrestricted Electives

Select 48 units

Total Units

234

Departmental Program Units That Also Satisfy the GIRs (36)

Total Units Beyond the GIRs Required for SB Degree

198

No subject can be counted both as part of the 17-subject GIRs and as part of the 180–198 units required beyond the GIRs. Every subject in the student’s departmental program will count toward one or the other, but not both.

1 18.034 Differential Equations is also an acceptable option.
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.