ENGINEERING (COURSE 16-ENG)

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

Bachelor of Science in 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>Units</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, 16.001, and 18.03 in the Departmental Program]</td>
<td>2</td>
</tr>
<tr>
<td>Laboratory Requirement (12 units [can be satisfied by 16.405[J], 16.622, 16.821, or 16.831[J] in the Departmental Program])</td>
<td>1</td>
</tr>
</tbody>
</table>

Total GIR Subjects Required for SB Degree 17

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>
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<tbody>
<tr>
<td>6.001 Introduction to Computer Science Programming in Python</td>
</tr>
<tr>
<td>6.002 Introduction to Computational Thinking and Data Science</td>
</tr>
<tr>
<td>16.001 Unified Engineering: Materials and Structures</td>
</tr>
<tr>
<td>16.002 Unified Engineering: Signals and Systems</td>
</tr>
<tr>
<td>16.003 Unified Engineering: Fluid Dynamics</td>
</tr>
<tr>
<td>16.004 Unified Engineering: Thermodynamics and Propulsion</td>
</tr>
<tr>
<td>16.06 Principles of Automatic Control</td>
</tr>
<tr>
<td>or 16.07 Dynamics</td>
</tr>
</tbody>
</table>

Concentration Subjects
These electives define a concentrated area of study and must be chosen with the written approval of the AeroAstro Undergraduate Office. A minimum of 42 units of engineering topics and a minimum of 12 units of mathematics or science topics must be included in the 72 units of concentration electives. In all cases, the concentration subjects must be clearly related to the theme of the concentration. 3

Laboratory and Capstone Subjects

Select one of the following:

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.82 Flight Vehicle Engineering (CI-M)</td>
</tr>
<tr>
<td>16.83[J] Space Systems Engineering (CI-M)</td>
</tr>
</tbody>
</table>

Select one of the following sequences:

<table>
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<tbody>
<tr>
<td>16.621 Experimental Projects I</td>
</tr>
<tr>
<td>16.622 Experimental Projects II (CI-M)</td>
</tr>
</tbody>
</table>

Experimental Projects

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.821 Flight Vehicle Development (CI-M)</td>
</tr>
<tr>
<td>16.831[J] Space Systems Development (CI-M)</td>
</tr>
</tbody>
</table>

Units in Major 180-186

Unrestrictive 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 Combination of 6.0001 Introduction to Computer Science Programming in Python and 6.0002 Introduction to Computational Thinking and Data Science counts as a REST.

2 18.032 Differential Equations is also an acceptable option.

3 Additional information about the 16-ENG program and possible concentration areas is available on the department's website (https://aeroastro.mit.edu/undergraduate-program/curriculum-and-requirements).