## Bachelor of Science in Engineering Science (BSES)

**Major Requirement**

* Courses that require a letter grade (i.e., no pass/fail)

The BSES comprises credit requirements and course requirements as established by the School of Engineering. Students must satisfy the SOE requirements listed in the Credit Requirements box, as well as fulfill all course requirements. SHU values listed for each course requirement reflect those associated with the corresponding Tufts course. Unless otherwise noted, course requirements may be satisfied with transfer courses having SHU values that are different than those shown here. In all cases, students should enter the SHUs received or earned in the correct SOE-Attribute column for a given course requirement to ensure they meet the credit requirements. For planning purposes, students completing the BSES requirements with Tufts courses will earn at least 120 SHU.

### Abbreviations:
- **SHU** = Semester Hour Unit
- **SOE** = School of Engineering
- **C** = Courses having attribute SOE-Computing
- **E** = Courses having attribute SOE-Engineering
- **M** = Courses having attribute SOE-Mathematics
- **NS** = Courses having attribute SOE-Natural Sciences
- **HASS** = Course having attribute SOE-HASS (Humanities, Arts, and Social Sciences)
- **None** = Course without SOE attribute

### Student and Advisor Notes:

**SOE Attribute**

<table>
<thead>
<tr>
<th>Mathematics &amp; Natural Sciences*</th>
<th>SHU</th>
<th>C</th>
<th>E</th>
<th>M</th>
<th>NS</th>
<th>HASS</th>
<th>None</th>
<th>Term</th>
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<tbody>
<tr>
<td>MATH 32 Calculus I</td>
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<td>MATH 34 Calculus II</td>
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<td>MATH 42 Calculus III</td>
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<tr>
<td>MATH 51 Differential Equations</td>
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<tr>
<td>CHEM 1 Chem. Fund. w/ lab</td>
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<td>≥3</td>
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<tr>
<td>NS Discipline Elective (a)</td>
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<td>NS Discipline Elective (a)</td>
<td>≥3</td>
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<tr>
<td>NS Discipline Elective (a)</td>
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</tbody>
</table>

≥45 SHU of SOE-Mathematics + SOE-Natural Sciences are required for the degree. List additional courses below (see note b).

| Total | ≥45 | -   | -   | -  |

### SOE Attribute

| Humanities Elective (c)         | ≥3  |   |   |   |    |      |      |      |
| Social Science Elective (d)     | ≥3  |   |   |   |    |      |      |      |

≥24 SHU of SOE-HASS are required for the degree. List additional courses below (see note e).

| Total | ≥24 | -   | -   | -  |

### SOE Attribute

<table>
<thead>
<tr>
<th>Engineering &amp; Computing*</th>
<th>SHU</th>
<th>C</th>
<th>E</th>
<th>M</th>
<th>NS</th>
<th>HASS</th>
<th>None</th>
<th>Term</th>
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</thead>
<tbody>
<tr>
<td>EN 1 Applications in Eng.</td>
<td>3</td>
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<td>EN 2 Intro. Comp. in Eng.</td>
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</tbody>
</table>

≥30 SHU of SOE-Engineering + SOE-Computing are required for the degree. List additional courses below (see note f).

| Total | ≥30 | -   | -   | -  |

### SOE Attribute

<table>
<thead>
<tr>
<th>Technical Electives*</th>
<th>SHU</th>
<th>C</th>
<th>E</th>
<th>M</th>
<th>NS</th>
<th>HASS</th>
<th>None</th>
<th>Term</th>
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</table>

≥21 SHU total of Technical Electives are required for the degree. List courses below (see note g).

| Total | ≥21 | -   | -   | -  |

### SOE Attribute

<table>
<thead>
<tr>
<th>Credit Requirements</th>
<th>E</th>
<th>C</th>
<th>M</th>
<th>NS</th>
<th>HASS</th>
<th>None</th>
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</thead>
<tbody>
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<td>≥24</td>
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<td>≥24</td>
<td>-</td>
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<td></td>
<td>120</td>
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</tbody>
</table>

| Total | - | - | - | -  |

**SOE Attribute**

| Total | - | - | - | -  |

**Abbreviations**

- **SHU** = Semester Hour Unit
- **SOE** = School of Engineering
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- **None** = Course without SOE attribute
BSES Notes

(a) Natural Science Discipline Electives
Concentrated study in one area of the Natural Sciences. Courses must be at least 3 SHU each and cannot be used to satisfy any other course or elective requirement. Lab courses less than 3 SHU may be used as Mathematics and Natural Sciences Electives or Technical Electives.
Select from:
Any course having attribute SOE-Natural Sciences within a selected discipline.

(b) Mathematics and Natural Sciences Electives
Select from:
Any course having attribute SOE-Mathematics
Any course having attribute SOE-Natural Sciences

(c) Humanities Elective
At least 3 SHU of Humanities are required. Requirement may not be satisfied with pre-matriculation credits, ENG 1, or ENG 3.
Select From:
Any course having attribute SOE-HASS-Humanities

(d) Social Sciences Elective
At least 3 SHU of Social Sciences are required. Requirement may not be satisfied with pre-matriculation credits.
Select From:
Any course having attribute SOE-HASS-Social Sciences

(e) Humanities, Arts or Social Sciences Electives
Select From:
Any course having attribute SOE-HASS
Any course having attribute SOE-HASS-Humanities
Any course having attribute SOE-HASS-Arts
Any course having attribute SOE-HASS-Social Sciences

(f) Engineering & Computing Electives
Courses selected may not be used to fulfill any other course or elective requirement.
Select from:
Any course having attribute SOE-Computing
Any course having attribute SOE-Engineering

(g) Technical Elective
At least 21 SHU of course work of Technical Elective. Courses selected may not be used to fulfill any other course or elective requirement.
Select from:
Any course having attribute SOE-Computing
Any course having attribute SOE-Engineering
Any course having attribute SOE-Natural Sciences
Any of the following additionally approved courses:
Engineering Management: EM 52, EM 54, EM 153, EM 155