# Engineering Science Minor

This minor has been designed for Boston University students who are not enrolled in the College of Engineering, but who want a general introduction to the concepts and applications of Engineering. Track A has a mechanical engineering emphasis, track B has an electrical and computer engineering emphasis and Track C has a biomedical engineering emphasis. **A minimum grade of C is required in all courses fulfilling the minor and a 20-credit residency in the College of Engineering is required.** All course substitutions must be approved by the College of Engineering Undergraduate Committee. Additional information and specifics regarding prerequisites can be obtained from the College of Engineering Undergraduate Records Office.

## Prerequisites

<table>
<thead>
<tr>
<th>CAS</th>
<th>MA</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>123</td>
<td>Calculus 1</td>
<td>4 cr.</td>
</tr>
<tr>
<td></td>
<td>124</td>
<td>Calculus 2</td>
<td>4 cr.</td>
</tr>
<tr>
<td></td>
<td>211</td>
<td>Physics 1</td>
<td>4 cr.</td>
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</table>

For Track B or C-option 1, CAS PY 212-Physics 2 is a pre-requisite.

## Required Courses (24 credits):

<table>
<thead>
<tr>
<th>CAS</th>
<th>MA</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>226</td>
<td>Differential Equations</td>
<td>4 cr.</td>
</tr>
<tr>
<td>ENG</td>
<td>EK</td>
<td>127 or 128 Engineering Computation</td>
<td>4 cr.</td>
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</table>

Introduction Course (see below) 4 cr.

Track A OR Track B OR Track C (see below) 12 cr.

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### Introduction Courses: Choose 4 credits from the following list

- **ENG EK 131 or 132** Introduction to Engineering 2 cr.
- **ENG EK 156** Design and Manufacture 2 cr.
- **ENG EK 210** Introduction to Engineering Design 2 cr.
- **ENG ME 359** Introduction to CAD and Machine Components 2 cr.

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### Either Track A or Track B or Track C 12 credits

#### Track A sequence (12 cr.) - Mechanical

- **ENG EK 301** Engineering Mechanics 4 cr.  (Pre-req: CAS PY 211 & ENG EK 127)

**and two of the following 4 credit courses:**

- **ENG ME 302** Engineering mechanics II 4 cr.  (Pre-req: ENG EK 301)
- **ENG ME 303** Fluid Mechanics 4 cr.  (Pre-req: ENG EK 301)
- **ENG ME 304** Thermodynamics 4 cr.  (Pre-req: CAS PY 211)
- **ENG ME 305** Mechanics of Materials 4 cr.  (Pre-req: ENG EK 301)
- **ENG ME 306** Material Science 4 cr.  (Pre-req: CAS PY 212)
- **ENG ME 360** Product Design 4 cr.  (Pre-req: ENG ME 359)

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#### Track B sequence (12 cr.) - Electrical and Computer

- **ENG EK 307** Electric Circuits 4 cr.  (Co-req: CAS MA 226 & CAS PY 212)

**and two** ENG EC 300-level or above courses. 8 cr.  Students are responsible for having completed any pre-requisites for the courses they choose.

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#### Track C sequence (12 cr.) - Biomedical

- **ENG BE 209** Princ. Molecular Cell Biology & Biotech. 4 cr.  (Pre-req: CAS PY 212, CAS CH 102 or CH 131, ENG EK 127, ENG BE 200)

**Option I**

- **ENG EK 307** Electric Circuits 4 cr.  (Co-req: CAS MA 226 & CAS PY 212)

**and one of the following 4 credit courses:**

- **ENG BE 401** Signals & Systems in Biomedical Engr. 4 cr.  (Pre-req: CAS MA 226 & ENG EK 307)
- **ENG EK 424** Thermodynamics & Statistical Mechanics 4 cr.  (Pre-req: CAS PY 212 & CAS MA 225 & CAS CH 102)

**Option II**

- **ENG EK 301** Engineering Mechanics I 4 cr.  (Pre-req: CAS PY 211 & ENG EK 127)

**and one of the following 4 credit courses:**

- **ENG BE 436** Fundamentals of Fluid Mechanics 4 cr.  (Pre-req: CAS MA 226 & ENG EK 301)
- **ENG BE 420** Introduction to Solid Biomechanics 4 cr.  (Pre-req: CAS MA 226 ENG EK 301)
- **ENG EK 424** Thermodynamics & Statistical Mechanics 4 cr.  (Pre-req: CAS PY 212 & CAS MA 225 & CAS CH 102)