## Minor in Materials Engineering

For the minor, 14–19 semester hours are required, excluding prerequisite courses. Students who wish to minor in Materials Engineering must complete the following:

### Prerequisite Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 180</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 181</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 141</td>
<td>General Physics I (Mechanics)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 122</td>
<td>General Chemistry I Lecture</td>
<td>5</td>
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<tr>
<td>&amp; CHEM 123</td>
<td>General Chemistry Laboratory I</td>
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<td></td>
<td>or CHEM 116                     Honors and Majors General and Analytical Chemistry I</td>
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<td>Total Hours</td>
<td>17</td>
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</tbody>
</table>

Some of these courses have prerequisites not included in the minor. Consult the Course Descriptions in the catalog or the Schedule of Classes for course prerequisites.

### Required Courses

Select one of the following: 2-3

- CME 260 Properties of Materials
- CME 261 Materials for Manufacturing

Select four of the following: 12-16

- BIOE 460 Materials in Bioengineering
- CHE 440 Non-Newtonian Fluids
- CHE 494 Selected Topics in Chemical Engineering (when topic is Design of Microelectronics Processing)
- CME 433 Fracture Mechanics and Failure Analysis I
- CME 460 Crystallography and X-Ray Diffraction
- CME 470 Physical and Mechanical Properties of Materials
- CME 471 Thermodynamics of Materials
- CME 480 Welding Metallurgy
- ECE 346 Solid State Device Theory
- ECE 347 Integrated Circuit Engineering
- ECE 449 Microdevices and Micromachining Technology
- ME 380 Manufacturing Process Principles
- PHYS 481 Modern Experimental Physics I

Total Hours: 14-19