# Engineering Science Major Checklist

**Bachelor of Science**

## BASIC SCIENCE & MATHEMATICS (7.5 units)

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Suggested Year</th>
<th>Done</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 121</td>
<td>Calculus I</td>
<td>FR</td>
<td></td>
</tr>
<tr>
<td>MATH 122</td>
<td>Calculus II</td>
<td>FR</td>
<td></td>
</tr>
<tr>
<td>PHYS 190</td>
<td>Physics &amp; Engineering Colloquium (1/2)</td>
<td>FR</td>
<td></td>
</tr>
<tr>
<td>PHYS 201</td>
<td>Newtonian Mechanics</td>
<td>FR</td>
<td></td>
</tr>
<tr>
<td>PHYS 202</td>
<td>Electricity &amp; Magnetism</td>
<td>SO</td>
<td></td>
</tr>
<tr>
<td>PHYS 203</td>
<td>Atomic, Molecular, &amp; Optical Physics</td>
<td>SO</td>
<td></td>
</tr>
<tr>
<td>PHYS 270</td>
<td>Mathematical Methods for Physics</td>
<td>SO</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>One additional unit from BIOL, CHEM, MATH, STAT, PHYS, or INQ/HNRS 240, 241, 250, or 251</em></td>
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</tbody>
</table>

## ENGINEERING CORE (8.5 units)

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Suggested Year</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CPSC 120</td>
<td>Programming</td>
<td>FR</td>
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</tr>
<tr>
<td>ENGS 191</td>
<td>Engineering Foundations (1/2)</td>
<td>FR</td>
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<tr>
<td>ENGS 200</td>
<td>Engineering Design Exploration</td>
<td>SO</td>
<td></td>
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<tr>
<td>ENGS 211</td>
<td>Statics &amp; Materials Testing</td>
<td>SO</td>
<td></td>
</tr>
<tr>
<td>ENGS 220</td>
<td>Circuits &amp; Electronics</td>
<td>SO</td>
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</tr>
<tr>
<td>ENGS 320</td>
<td>Instrumentation &amp; Control Systems Engineering</td>
<td>JR</td>
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</tr>
<tr>
<td>ENGS 340</td>
<td>Introduction to Thermal &amp; Fluid Sciences</td>
<td>JR</td>
<td></td>
</tr>
<tr>
<td>ENGS 490</td>
<td>Design Capstone I</td>
<td>SR</td>
<td></td>
</tr>
<tr>
<td>ENGS 491</td>
<td>Design Capstone II</td>
<td>SR</td>
<td></td>
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</table>

## ELECTIVE COURSES (3 units)

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CPSC 250</td>
<td>Data Structures</td>
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</tr>
<tr>
<td>CPSC 363</td>
<td>Robotics</td>
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</tr>
<tr>
<td>ENGS 330</td>
<td>Dynamics</td>
<td></td>
</tr>
<tr>
<td>ENGS 341</td>
<td>Heat &amp; Mass Transfer</td>
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</tr>
<tr>
<td>ENGS 342</td>
<td>Fluid Mechanics</td>
<td></td>
</tr>
<tr>
<td>ENGS 406</td>
<td>Independent Study (or ENGS 405 and ENGS 407)</td>
<td></td>
</tr>
<tr>
<td>PHYS 250</td>
<td>Introduction to Nanomaterials</td>
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<tr>
<td>PHYS 299</td>
<td>Special Topics (with approval)</td>
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<tr>
<td>PHYS 450</td>
<td>Physics of Materials</td>
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</tr>
<tr>
<td>PHYS 499</td>
<td>Special Topics (with approval)</td>
<td></td>
</tr>
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</table>

### Total Units (At least 19)

Note that this check sheet is intended as a guide; the Academic Catalog contains more details and nuances, and students are encouraged to check that book along with the academic advisors as needed.

See the next page for a 4-year course plan.