ENGINEERING B.S.E.

All students must meet the University Requirements.

The College of Engineering and Mathematical Sciences offers instruction leading to the Bachelor of Science in Engineering degree. This degree is designed for those students desiring a program with a strong engineering science base in preparation for an interdisciplinary engineering specialty. Each student will be expected to declare a concentration before completing the first four semesters of study. At that time, the student and advisor(s) will plan an integrated series of courses directed towards the concentration. Possible concentrations include: aeronautical engineering, materials engineering, chemical engineering, computer engineering, power engineering, traffic engineering, geological engineering, mechatronics/robotics, etc.

REQUIREMENTS
THE CURRICULUM FOR THE B.S. IN ENGINEERING

Students must meet University requirements. Note that the University’s Quantitative Reasoning (QR) requirement is built into the BS Engineering curriculum. Minimum of 120 credits required; 112-116 credits specified below.

<table>
<thead>
<tr>
<th>University &amp; BSE General Education Requirements (18 credits)</th>
</tr>
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<tbody>
<tr>
<td>Univ FWIL: Foundational Writing &amp; Information Literacy</td>
</tr>
<tr>
<td>Univ D1: Diversity 1</td>
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<tr>
<td>Univ D1/D2: Diversity 1 or Diversity 2</td>
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<tr>
<td>BSE General Education Electives ¹</td>
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<table>
<thead>
<tr>
<th>Mathematics &amp; Statistics Requirements (18 credits)</th>
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<tbody>
<tr>
<td>MATH 021 QR: Calculus I</td>
</tr>
<tr>
<td>MATH 022 QR: Calculus II</td>
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<tr>
<td>MATH 121 QR: Calculus III</td>
</tr>
<tr>
<td>MATH 271 QR: Adv Engineering Mathematics</td>
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<td>STAT 143 QR: Statistics for Engineering</td>
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<tr>
<td>or STAT 151 QR: Applied Probability</td>
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<tr>
<th>Computing &amp; Science Requirements (14 credits)</th>
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<tbody>
<tr>
<td>CS 020 QR: Programming for Engineers</td>
</tr>
<tr>
<td>CHEM 031 General Chemistry 1</td>
</tr>
<tr>
<td>PHYS 031 Physics for Engineers I</td>
</tr>
<tr>
<td>PHYS 125 Physics for Engineers II</td>
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<tr>
<th>Engineering Science Requirements (42-43 credits)</th>
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<tbody>
<tr>
<td>CE 001 Statics</td>
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</table>

| EE 003 & EE 081 Linear Circuit Analysis I and Linear Circuits Laboratory I | 4-5 |
| or EE 075 Electrical Circuits & Sensors                       |    |
| or EE 100 Electrical Engr Concepts                            |    |
| ENGR 002 Graphical Communication                             | 2  |
| ME 040 Thermodynamics                                        | 3  |
| Engineering Science Electives ²                              | 30 |

<table>
<thead>
<tr>
<th>Engineering Design Requirements (8 credits)</th>
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<tbody>
<tr>
<td>BME 001 Intro to Biomedical Eng Design ³</td>
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<tr>
<td>or CE 003 SU: Intro to Civil &amp; Envir Engr</td>
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<tr>
<td>or EE 001 EE Principles and Design</td>
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<tr>
<td>or ME 001 First-Year Design Experience</td>
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<tr>
<td>BME 187 Capstone Design I ¹</td>
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<tr>
<td>or CE 185 SU: Capstone Design I</td>
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<tr>
<td>or EE 187 Capstone Design I</td>
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<td>or ME 185 Capstone Design I</td>
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<tr>
<th>Recommended/Optional Courses (0-3 credits)</th>
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<tbody>
<tr>
<td>ENGR 050 First Year Engineering Seminar</td>
</tr>
<tr>
<td>PHYS 030 Physics Problem Solving I</td>
</tr>
<tr>
<td>PHYS 123 Physics Problem Solving II</td>
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<tr>
<th>Technical Electives (12 credits) ⁵</th>
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<tbody>
<tr>
<td>¹ General Education Electives: 9 credits of approved General Education Electives. Students should select a Gen Ed course that meets the University Sustainability Requirement (SU) if they have not taken an SU engineering course. Students may not double count BSAD courses as both Gen Ed and Tech Electives.</td>
</tr>
<tr>
<td>² Engineering Science Electives: All BME, CE, EE, ENGR and ME courses (except ENGR 010). Must have a minimum of 9 credits at the 200-level.</td>
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<tr>
<td>³ First Year Design: This degree requirement is designed for first-year students. Internal and external transfer students may substitute 100-level or higher engineering (BME, CE, EE, ENGR, ME) credits for this requirement.</td>
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<tr>
<td>⁴ Capstone Design I and II courses must have the same course prefix.</td>
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</tbody>
</table>
Technical Electives: Any 100-level or higher course in CEMS or BSAD; natural or physical sciences courses with advisor approval. BSE students may not double count BSAD courses as both Tech Electives and Gen Ed.