MECHANICAL ENGINEERING B.S.ME.

All students must meet the University Requirements. (http://catalogue.uvm.edu/undergraduate/academicinfo/degreerequirements/)

The curriculum leading to a degree of Bachelor of Science in Mechanical Engineering offers instruction in design, solid and thermo-fluid mechanics, materials, manufacturing processes and systems, as well as in engineering, life and physical sciences, humanities, and social sciences.

Engineering design is developed and integrated into each student’s program and culminates in a required major design experience which draws upon prior course work and which focuses on the issues and expectations of professional practice.

MECHANICAL ENGINEERING PROGRAM EDUCATIONAL OBJECTIVES

The educational objectives of the Mechanical Engineering program are to provide our graduates with disciplinary breadth and depth to fulfill complex professional and societal expectations by:

1. Pursuing careers as practicing engineers or using their program knowledge in a wide range of other professional, educational and service activities.

2. Assuming leadership roles and seeking continuous professional development.

3. Contributing to their profession and society while appreciating the importance of ethical and sustainable practices, diversity, and inclusion.

REQUIREMENTS

THE CURRICULUM FOR THE B.S. IN MECHANICAL ENGINEERING

Students must meet University requirements. Note that the University's Sustainability (SU) and Quantitative Reasoning (QR) requirements are built into the Mechanical Engineering curriculum. Minimum of 125 credits required.

<table>
<thead>
<tr>
<th>UNIVERSITY/MECHANICAL ENGINEERING GENERAL EDUCATION REQUIREMENTS (18 CREDITS)</th>
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</thead>
<tbody>
<tr>
<td>Univ FWIL: Foundational Writing &amp; Information Literacy</td>
<td>3</td>
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<tr>
<td>Univ D1: Diversity 1</td>
<td>3</td>
</tr>
<tr>
<td>Univ D1/D2: Diversity 1 or Diversity 2</td>
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<tr>
<td>ME General Education Electives</td>
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<tr>
<th>MATHEMATICS &amp; STATISTICS REQUIREMENTS (21 CREDITS)</th>
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<tbody>
<tr>
<td>MATH 021 QR: Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 022 QR: Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 121 QR: Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH 122 QR: Applied Linear Algebra</td>
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<tr>
<td>or MATH 124 QR: Linear Algebra</td>
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<tr>
<td>MATH 271 QR: Adv Engineering Mathematics</td>
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<tr>
<td>STAT 143 QR: Statistics for Engineering</td>
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<tr>
<th>COMPUTING &amp; SCIENCE REQUIREMENTS (14 CREDITS)</th>
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<tbody>
<tr>
<td>CS 021 QR: Computer Programming I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 031 General Chemistry I</td>
<td>4</td>
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<tr>
<td>PHYS 031 Physics for Engineers I</td>
<td>4</td>
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<tr>
<td>PHYS 125 Physics for Engineers II</td>
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<tr>
<th>MECHANICAL ENGINEERING COURSE REQUIREMENTS (53 CREDITS)</th>
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<tbody>
<tr>
<td>ME 001 First-Year Design Experience</td>
<td>2</td>
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<tr>
<td>ME 012 Dynamics</td>
<td>3</td>
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<tr>
<td>ME 014 Mechanics of Solids</td>
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<tr>
<td>ME 040 Thermodynamics</td>
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<tr>
<td>ME 042 SU: Applied Thermodynamics</td>
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<td>ME 081 Mech Engr Shop Experience</td>
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<tr>
<td>ME 083 Computational Mech Engr Lab</td>
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<td>ME 101 Materials Engineering</td>
<td>3</td>
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<tr>
<td>ME 111 System Dynamics</td>
<td>3</td>
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<tr>
<td>ME 123 Thermo-Fluid Lab</td>
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<tr>
<td>ME 124 Materials and Mechanics Lab</td>
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<tr>
<td>ME 143 Fluid Mechanics</td>
<td>3</td>
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<tr>
<td>ME 144 Heat Transfer</td>
<td>3</td>
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<tr>
<td>ME 171 Design of Elements</td>
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<tr>
<td>ME 185 Capstone Design I</td>
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<tr>
<td>ME 186 Capstone Design II</td>
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<td>ME Electives</td>
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<tr>
<th>ADDITIONAL ENGINEERING/TECHNICAL COURSE REQUIREMENTS (19 CREDITS)</th>
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<tbody>
<tr>
<td>CE 001 Statics</td>
<td>3</td>
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<tr>
<td>EE 100 Electrical Engr Concepts</td>
<td>4</td>
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<tr>
<td>EE 101 Digital Control w/ Embedded Sys</td>
<td>4</td>
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<tr>
<td>ENGR 002 Graphical Communication</td>
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<td>Technical Electives 4</td>
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<tr>
<td><strong>OPTIONAL/RECOMMENDED COURSES (4 CREDITS)</strong></td>
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<tr>
<td>ME 003</td>
<td>Introduction to Robotics</td>
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<tr>
<td>CEMS 050</td>
<td>CEMS First Year Seminar</td>
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<tr>
<td>PHYS 030</td>
<td>Physics Problem Solving I</td>
</tr>
<tr>
<td>PHYS 123</td>
<td>Physics Problem Solving II</td>
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1. ME General Education Electives: 9 credits of approved general education electives.
2. First Year Design Experience: ME 001 is a degree requirement 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.
3. ME Electives: ME 161 and all 200-level (or above) ME courses.
4. Technical Electives: All 100-level (or higher) courses in BME, CE, EE, ENGR, ME, CS, CSYS, MATH, ASTR, BIOC, BIOL, CHEM, GEOL, MMG & PHYS; STAT 151 or higher; CS 020.