Engineering
Concentration: Mechanical Engineering
Bachelor of Science in Engineering
2018-2019

General Areas of Service: A mechanical engineer designs mechanical or electro-mechanical products and systems such as engines and machines, thermal, hydraulic, and robotic systems. Mechanical engineers direct and coordinate construction, installation, operation, and repair activities, and are employed by most industries and the government. Many advance to management or administrative positions, or establish their own firms.

Professional Training: A bachelor’s degree in mechanical engineering is the minimum educational requirement to enter this profession, although graduate training is preferred or required for many jobs.

Job Outlook: The Bureau of Labor Statistics (BLS) states, “[e]mployment of mechanical engineers is expected to grow 9 percent from 2016 to 2026” compared to 7 percent for all occupations. However, job growth will vary by industry and some industries anticipate high demand for mechanical engineers. These include architectural services, machine manufacturing, oil and gas extraction, renewable energy technologies, remanufacturing, and nanotechnology among others. Mechanical engineers trained to use the latest computer applications—particularly computational design and simulation software—will enjoy the best job prospects. (See www.bls.gov)

Earnings: In their May 2017 salary survey, the Bureau of Labor Statistics reports the mean annual wage for mechanical engineers as $85,880, with the lowest 10 percent earning less than $55,310 and the top 10 percent earning more than $133,310. (See www.bls.gov)

Global Humanitarian Engineering Certificate: This additional certificate shows prospective employers that a student has training working with more than one culture. It requires a few additional classes beyond the standard engineering classes. The number of extra classes can be minimized if general studies classes are chosen carefully. Freshmen interested in this program should take General Sociology rather than General Psychology to meet prerequisites for the program. For specifics on the program and an application form, contact the School of Engineering.

Note: Students should take pre-calculus in high school or during the summer to allow them to enroll in Calculus I during their first quarter. Failure to complete Calculus II prior to the start of the second year will delay the student’s graduation.

Students are expected to take 24 credits of Technical Electives to meet their degree requirements. Technical electives are to be selected with the approval of the student’s Engineering advisor.

Before graduation, all students must take an exit exam.
The chart below details one suggested path a student may take to complete a bachelor's degree in Mechanical Engineering. Cognates are listed in italics.

### Freshman
<table>
<thead>
<tr>
<th>Fall Courses</th>
<th>Hours</th>
<th>Winter Courses</th>
<th>Hours</th>
<th>Spring Courses</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Intro to Engineering (ENGR 121)</td>
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<td>Intro to CAD (ENGR 122)</td>
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<td>Intro to System Design (ENGR 123)</td>
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<tr>
<td>General Chemistry (CHEM 141 &amp; 144)</td>
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<td>General Chemistry (CHEM 142 &amp; 145)</td>
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<td>College Writing I (ENGL 121)</td>
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<td>Calculus I (MATH 181)</td>
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### Sophomore
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<th>Hours</th>
<th>Spring Courses</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Principles of Physics (PHYS 251 &amp; 254)</td>
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<td>Principles of Physics (PHYS 252 &amp; 255)</td>
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<td>Circuit Analysis (ENGR 228)</td>
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<td>Calculus IV (MATH 283)</td>
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<td>Research Writing (ENGL 222)</td>
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<td>Principles of Physics (PHYS 252 &amp; 256)</td>
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<tr>
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<td>Intro to Linear Algebra (MATH 289)</td>
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<td>Ordinary Differential Equations (MATH 312)</td>
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<tr>
<td>Mechanics of Materials (ENGR 321)</td>
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<td>Materials &amp; Processes in Manufacturing (ENGR 324)</td>
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<td>Fluid Mechanics (ENGR 331)</td>
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<td>Thermodynamics (ENGR 332)</td>
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<td>Linear Systems Analysis (ENGR 350)</td>
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<td>Advanced CAD/MCAE (ENGR 374)</td>
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<td>Metal Lathe &amp; Welding (TECH 265)</td>
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<td>Vibrations (ENGR 366)</td>
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### Senior
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<th>Spring Courses</th>
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<td>Kinematics (ENGR 461)</td>
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<td>Machine Design (ENGR 462)</td>
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+Offered even years only - Offered odd years only