Engineering
Concentration: Electrical Engineering
Bachelor of Science in Engineering
2019-2020

**General Areas of Service:** An electrical engineer is usually involved in the conception, design, manufacturing, and testing of electrical equipment and systems. Electrical engineering projects are often related to communications, computers, consumer or industrial electronics, scientific or industrial instruments, aerospace systems, electric power systems, defense electronics and systems, or medical electronics. A variety of industries is open to the electrical engineering graduate. In addition, employment opportunities are numerous from the government. Many also advance to managerial or administrative positions or establish their own firms.

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

**Job Outlook:** The Bureau of Labor Statistics (BLS) states, “[e]mployment of electrical and electronics engineers is projected to grow 7 percent from 2016 to 2026, about as fast as the average for all occupations.” The decline of manufacturing in the U.S. is contributing to slower job growth, though demand for electrical engineers will be strong in the areas of computer systems development and technological research and development. Electrical engineers are also attractive to engineering service firms due to their “versatility in developing and applying emerging technologies,” according to the BLS. (See [www.bls.gov](http://www.bls.gov))

**Earnings:** In their May 2018 salary survey, the Bureau of Labor Statistics reports the median annual wage for electrical engineers as $96,640 with the lowest 10 percent earning less than $61,190 and the top 10 percent earning more than $153,240. (See [www.bls.gov](http://www.bls.gov))

**Global Humanitarian Engineering Certificate:** This additional certificate shows prospective employers that a student has training in 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 28 credits of Technical Electives to meet their degree requirements. Technical electives are to be selected with the approval of the student’s Engineering advisor.

**Candidacy & Progression Policy:** In the interest of matching students with majors in which they can the School of Engineering has established several milestones that must be met.

**Before graduation, all students must take an exit exam.**
TOTAL CREDITS REQUIRED: 200 cr.  GENERAL STUDIES REQUIREMENTS: 44 cr.  See the Undergraduate Bulletin for Details
The chart below details one suggested path a student may take to complete a bachelor’s degree in Electrical Engineering. Cognates are listed in italics.

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Winter Courses</th>
<th>Spring Courses</th>
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<tbody>
<tr>
<td>Fall Courses</td>
<td>Hours</td>
<td>Winter Courses</td>
</tr>
<tr>
<td>Intro to Engineering (ENGR 121)</td>
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<td>Intro to CAD (ENGR 122)</td>
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<tr>
<td>Fundamentals of Programming (CPT 141)</td>
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<td>Fundamentals of Programming (CPT 142)</td>
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<tr>
<td>General Chemistry (CHEM 141 &amp; 144)</td>
<td>4</td>
<td>General Chemistry (CHEM 142 &amp; 145)</td>
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<tr>
<td>Calculus I (MATH 181)</td>
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<td>Calculus II (MATH 281)</td>
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<td>College Writing I (ENGL 121)</td>
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<td>Winter Courses</td>
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<td>Engineering Mechanics (ENGR 221)</td>
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<td>Engineering Mechanics (ENGR 222)</td>
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<tr>
<td>Computer Organization &amp; Assembly Language (CPT 280)</td>
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<td>Principles of Physics (PHYS 252 &amp; 254)</td>
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<tr>
<td>Principles of Physics (PHYS 251 &amp; 253)</td>
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<td>Intro to Linear Algebra (MATH 289)</td>
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<td>Research Writing (ENGL 223)</td>
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<td>Calculus IV (MATH 283)</td>
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<td>Engineering Economy (ENGR 326)</td>
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<td>Embedded System Design (ENGR 355)</td>
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<td>Linear Systems Analysis (ENGR 350)</td>
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<td>Engineering Electronics (ENGR 356)</td>
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<td>Digital Logic (ENGR 354)</td>
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<td>Thermodynamics (ENGR 332)</td>
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<td>Colloquium (ENGR 495)</td>
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<td>Junior Seminar (ENGR 396)</td>
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+Offered even years only  - Offered odd years only