Engineering
Concentration: Electrical Engineering
Bachelor of Science in Engineering
2017-2018

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 0 percent from 2014 to 2024” compared to 7 percent 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 2016 salary survey, the Bureau of Labor Statistics reports the median annual wage for electrical engineers as $94,210 with the lowest 10 percent earning less than $59,720 and the top 10 percent earning more than $149,040. (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.
The chart below details one suggested path a student may take to complete a bachelor’s degree in Electrical Engineering. Cognates, general studies courses, and electives should be taken to complete 200 credit hours to complete a Bachelor of Science in Engineering with a concentration in Electrical Engineering. See the Undergraduate Bulletin for complete requirements.

### Freshman
- **Autumn**
  - ENGR 121: Introduction to Engineering .......... 2
  - CPTR 141: Fundamentals of Programming .......... 4
- **Winter**
  - ENGR 122: Introduction to CAD ................. 2
  - CPTR 142: Fundamentals of Programming .......... 4
- **Spring**
  - ENGR 123: Introduction to System Design ......... 2

### Sophomore
- **Fall**
  - ENGR 221: Engineering Mechanics .................. 3
  - CPTR 280: Computer Organization & Assembly Lang... 3
- **Winter**
  - ENGR 222: Engineering Mechanics .................. 3
  - ENGR 228: Circuit Analysis .......................... 4
- **Spring**
  - ENGR 223: Engineering Mechanics .................. 3
  - ENGR 229: Circuit Analysis .......................... 4

### Junior
- **Fall**
  - ENGR 326: Engineering Economy .................... 4
  - ENGR 350: Linear Systems Analysis ................... 4
  - ENGR 354: Digital Logic ................................ 3
- **Winter**
  - ENGR 355: Embedded System Design ................ 3
  - ENGR 356: Engineering Electronics ................... 4
  - ENGR 395: Thermodynamics ........................... 3
  - ENGR 396: Junior Seminar .............................. 1
  - ENGR 350: Linear Systems Analysis ................... 4
- **Spring**
  - ENGR 357: Engineering Electronics ................... 4
  - ENGR 397: Junior Seminar .............................. 0

### Senior
- **Fall**
  - ENGR 433: Digital Design .......................... 4
  - ENGR 451: Electromagnetic Fields .................... 4
  - ENGR 455: Signals & Systems .......................... 4
  - ENGR 496: Capstone Engineering Project .......... 1
- **Winter**
  - ENGR 430: Electrical Power Engineering .......... 4
  - ENGR 497: Capstone Engineering Project .......... 2
- **Spring**
  - ENGR 312: Physical Electronics (PHYS 315 Lab) .... 4
  - ENGR 498: Capstone Engineering Project .......... 2

Students should take pre-calculus in high school or during the summer to allow them to enroll in Calculus I during their first quarter. Failing 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.

Before graduation, all students must take an exit exam.