

# Electronics and Electrical Engineering

## Bachelor of Science

### Description

The Bachelor of Science (BS) in Electronics and Electrical Engineering is cutting-edge and the curriculum is designed to equip students with the skills needed to excel in the high-demand technology sector. Students master problem-solving, data analysis, and experimental techniques while understanding the broader social, environmental, and economic impacts of engineering. Commit to ethical practices, effective communication, and continuous learning to become a forward-thinking leader in the ever-evolving tech landscape. Students can also embrace the future of Industry 4.0 with our integrated BS/MS program, completing both degrees in just five years if continuously enrolled, paving the way for lucrative careers and leadership roles.

### Admissions Requirements

- A high school diploma or GED
- Credentials earned outside of the US must be evaluated by an approved agency
- GPA of 2.0 or higher
- Official transcripts from all previously attended institutions
- Completed application with Carolina University

### Graduation Requirements

- Shall have maintained a minimum cumulative GPA of 2.0;
- Shall have passed all courses in the curriculum and made a C or better in professional core courses;
- Shall have completed at least 24 of the final 30 hours with Carolina University.

### Courses

**General Education Core (38 Credit Hours) - must include the following:**

[GC 111 - Mathematics I](#)

3 Credit Hours

[GC 112 - Mathematics II](#)

3 Credit Hours

[PY 210 - General Physics I w/Lab](#)

4 Credit Hours

[PY 215 - General Physics II w/Lab](#)

4 Credit Hours

**or**

[CH 110 - General Chemistry I w/Lab](#)

4 Credit Hours

## **Professional Core (60 Credit Hours)**

[EL 100 - Introduction to Electrical Engineering](#)

3 Credit Hours

[CS 110 - Programming I](#)

3 Credit Hours

[CS 111 - Programming II](#)

3 Credit Hours

[GC 205 - Calculus I](#)

3 Credit Hours

[GC 206 - Calculus II](#)

3 Credit Hours

[MA 205 - Calculus III](#)

3 Credit Hours

[MA 305 - Calculus IV](#)

3 Credit Hours

[EL 205 - Digital System Design w/Lab](#)

4 Credit Hours

[EL 210 - General Principles of Electric Circuits I w/Lab](#)

4 Credit Hours

[EL 215 - General Principles of Electric Circuits II w/Lab](#)

4 Credit Hours

[EL 250 - Analog Electronics w/Lab](#)

4 Credit Hours

[EL 310 - Signals and Systems](#)

3 Credit Hours

[EL 335 - Semiconductor Devices w/Lab](#)

4 Credit Hours

[EL 420 - Introduction to Electromagnetics with Lab](#)

4 Credit Hours

[MA 310 - Linear Algebra](#)

3 Credit Hours

[MA 315 - Ordinary Differential Equations](#)

3 Credit Hours

[EL 490 - Senior Design I](#)

3 Credit Hours

[EL 495 - Senior Design II](#)

3 Credit Hours

## **Professional Electives (Choose 15 Credit Hours)**

[EL 220 - Engineering Graphics](#)

2 Credit Hours

[EL 240 - Engineering Mechanics](#)

3 Credit Hours

[EL 320 - Random Signals and Noise](#)

3 Credit Hours

[EL 330 - High Frequency Communication Circuits with Lab](#)

4 Credit Hours

[EL 390 - Internship I](#)

3 Credit Hours

[EL 399 - Special Topics in Engineering](#)

3 Credit Hours

[EL 410 - Digital Signal Processing](#)

3 Credit Hours

[EL 430 - Control Systems with Lab](#)

4 Credit Hours

[EL 440 - Communication Systems with Lab](#)

4 Credit Hours

[EL 445 - RF & Microwave Circuits for Wireless Communication w/Lab](#)

4 Credit Hours

[EL 450 - Advanced Digital System Designwith FPGA with Lab](#)

4 Credit Hours

[EL 480 - Microprocessor and Microcontroller with Lab](#)

4 Credit Hours

[EL 499 - Internship II](#)

3 Credit Hours

### **MA Courses (Choose 6 Credit Hours)**

[MA 300 - Introduction to Probability and Sta](#)

3 Credit Hours

[MA 320 - Discrete Mathematics](#)

3 Credit Hours

[MA 410 - Partial Differential Equations](#)

3 Credit Hours

CS Courses (Choose 6 Credit Hours)

[CS 150 - Scripting](#)

3 Credit Hours

[CS 205 - Python Programming](#)

3 Credit Hours

[CS 210 - Algorithms and Data Structures](#)

3 Credit Hours

[CS 220 - Object Oriented Programming](#)

3 Credit Hours

[CS 222 - C# Programming](#)

3 Credit Hours

[CS 250 - Cloud Computing](#)

3 Credit Hours