ELECTRICAL ENGINEERING, B.S.E.

Degree Requirements (126-139 hours)

See College of Engineering and Computing (https://academicbulletins.sc.edu/undergraduate/engineering-computing/) for progression requirements and special academic opportunities.

Program of Study

Requirements	Credit Hours
1. Carolina Core	34-46
2. College Requirements	0
3. Program Requirements	62-63
4. Major Requirements	30

Founding Documents Requirement

All undergraduate students must take a 3-credit course or its equivalent with a passing grade in the subject areas of History, Political Science, or African American Studies that covers the founding documents including the United State Constitution, the Declaration of Independence, the Emancipation Proclamation and one or more documents that are foundational to the African American Freedom struggle, and a minimum of five essays from the Federalist papers. This course may count as a requirement in any part of the program of study including the Carolina Core, the major, minor or cognate, or as a general elective. Courses that meet this requirement are listed here (https://academicbulletins.sc.edu/undergraduate/founding-document-courses/).

1. Carolina Core Requirements (34-46 hours)

CMW – Effective, Engaged, and Persuasive Communication: Written (6 hours)

Must be passed with a grade of C or higher.

- ENGL 101
- ENGL 102

ARP – Analytical Reasoning and Problem Solving (8 hours)

Must be passed with a grade of C or higher.

- MATH 141
- MATH 142

SCI – Scientific Literacy (8 hours)

Must be passed with a grade of C or higher.

- CHEM 111 & CHEM 111L
- PHYS 211 & PHYS 211L

GFL – Global Citizenship and Multicultural Understanding: Foreign Language (0-6 hours)

Score two or better on foreign language placement test; or complete the 109 and 110 courses in FREN, GERM, LATN or SPAN; or complete the 121 course in another foreign language.

- CC-GFL courses (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

GHS – Global Citizenship and Multicultural Understanding: Historical Thinking (3 hours)

- any CC-GHS course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

GSS – Global Citizenship and Multicultural Understanding: Social Sciences (3 hours)

- any CC-GSS course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

AIU – Aesthetic and Interpretive Understanding (3 hours)

- any CC-AIU course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

CMS – Effective, Engaged, and Persuasive Communication: Spoken Component [1] (0-3 hours)

Select from the following:

- PHIL 325 (CMS/VSR overlay)
- any overlay or stand-alone CC-CMS course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

INF – Information Literacy [1] (0-3 hours)

- any overlay or stand-alone CC-INF course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

VSR – Values, Ethics, and Social Responsibility [1] (0-3 hours)

Select from the following:

- PHIL 325 (CMS/VSR overlay)
- any overlay or stand-alone CC-VSR course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

[1] **Carolina Core Stand Alone or Overlay Eligible Requirements** — Overlay-approved courses offer students the option of meeting two Carolina Core components in a single course. A maximum of two overlays is allowed. The total Carolina Core credit hours for this program must add up to a minimum of 34 hours.

2. College Requirements (0 hours)

No college-required courses for this program.

3. Program Requirements (62-63 hours)

Supporting Courses (62-63 hours)

Course	Title	Credits
Analysis Course		**3-4**
Select one of the following:		
CSCE 146	Algorithmic Design II	
EMCH 201	Introduction to Applied Numerical Methods	
PHYS 306	Principles of Physics III	
Foundational Courses		
ECON 421	Engineering Economics	3

EMCH 220	Mechanical Engineering Fundamentals for Non-Majors	3
MATH 241	Vector Calculus (must be passed with a grade of C or higher)	3
MATH 242	Elementary Differential Equations (must be passed with a grade of C or higher)	3
PHYS 212	Essentials of Physics II (must be passed with a grade of C or higher)	3
PHYS 212L	Essentials of Physics II Lab (must be passed with a grade of C or higher)	1
STAT 509	Statistics for Engineers	3
Lower Division Engineering		
CSCE 145	Algorithmic Design I (must be passed with a grade of C or higher)	4
CSCE 211	Digital Logic Design (must be passed with a grade of C or higher)	3
CSCE 212	Introduction to Computer Architecture	3
ELCT 101	Electrical and Electronics Engineering	3
or ENCP 101	Introduction to Engineering I	
ELCT 102	Electrical Science	3
ELCT 201	Introductory Electrical Engineering Laboratory	3
ELCT 221	Circuits (must be passed with a grade of C or higher)	3
ELCT 222	Signals and Systems (must be passed with a grade of C or higher)	3
Career Plan Electives		
Select 15 hours of electives [1]		15
Total Credit Hours		**62-63**

[1] The student, in consultation with his or her advisor, will select 15 hours of electives that support the student's defined career plan. Career Plan Electives include ELCT 332 and all ELCT courses numbered 499 and higher. Up to 6 hours of non-ELCT courses may be used to satisfy Career Plan Electives with department approval; all must be at or above the 300-level.

4. Major Requirements (30 hours)

Course	Title	Credits
ELCT 301	Electronics Laboratory	3
ELCT 302	Real Time Systems Laboratory	3
ELCT 321	Digital Signal Processing	3
ELCT 331	Control Systems	3
ELCT 350	Computer Modeling of Electrical Systems	3
ELCT 361	Electromagnetics	3
ELCT 363	Introduction to Microelectronics	3
ELCT 371	Electronics	3
ELCT 403	Capstone Design Project I	3
ELCT 404	Capstone Design Project II	3
Total Credit Hours		**30**