

ELECTRICAL AND COMPUTER ENGINEERING, BACHELOR OF SCIENCE (BS)

Recommended Four-Year Plan

Course	Title	Hours
First Year		
Fall		
ENGR 110	Introduction to Engineering	2
ENGL 102	Critical Writing	3
CHEM 107 & CHEM 111	General Chemistry I and General Chemistry I Lab	4
MATH 225	Calculus I	4
SUBJ 139	Foundations of Academic Discovery ¹	3
ESAP 101	FIRST Seminar *	0-1
Hours		16-17
Spring		
ENGR 120	Engineering Design Tools	2
ENGL 104	Critical Reading	3
MATH 230	Calculus II	4
PHYS 216	University Physics 1 with Lab	4
Creative & Aesthetic Inquiry (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
Hours		16
Second Year		
Fall		
CPSC 146	Programming Principles	3
ENGR 210	Statics	3
ENGR 340	Engineering Economics	3
MATH 232	Linear Algebra	3
PHYS 217	University Physics 2 with Lab	4
Hours		16
Spring		
CPSC 246	Object-Oriented Programming	3
ENGR 250	Circuit Analysis I	3
ENGR 251	Circuit Analysis Lab	1
ENGL 205	Introduction to Professional Writing	3
MATH 231	Calculus III	4
Hours		14
Third Year		
Fall		
MATH 301	Differential Equations I	3
ECSE 230	Instrumentation with Lab	3
ECSE 310	Circuit Analysis II	3
ECSE 350	Signals and Systems	3
MECH 330	Introduction to Mechatronics	4
Hours		16
Spring		
ECSE 320	Electrical Circuit Design	3
ECSE 340	Processor Design and Structure	3

ECSE 410	Energy Conversion	3
STAT 350	Applied Statistics	3
Select one of the following:		3
COMM 200	Civil Discourse: Theory & Practice	
PHIL 110	Ethics and Civil Discourse	
POLI 235	Civil Discourse and Democracy	

Hours 15

Fourth Year

Fall

CPSC 423	Computer Networks	3
ECSE 360	Engineering Electromagnetics	3
ECSE 460	Capstone Design I	3
ECSE XXX	ECSE Elective	3
MECH 411	Automatic Control Systems	3

Hours 15

Spring

ECSE 461	Capstone Design II	3
ECSE XXX	ECSE Elective	3
Humanities Inquiry (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
Social Science (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
Elective		3

Hours 15

Total Hours 123-124**

¹ Course offered in multiple subjects; cannot take course in first major subject.

* Students are encouraged to take ESAP 101 as a Free Elective.

ECSE Electives

Code	Title	Hours
ECSE 420	Wireless Communication	3
ECSE 430	Digital Signal Processing	3
ECSE 440	Electric Power Systems	3
ECSE 470	Applied Digital Systems	3

****This document serves as a guide. Earning a degree requires at least 120 credits, though some majors require more. Before registering for courses, consult your academic adviser and review your curriculum guide. Be sure to review and confirm your plan with your adviser at least once each academic year.**

Major: 6185

Revised: 9.26.2025