

ELECTRICAL AND COMPUTER ENGINEERING, BACHELOR OF SCIENCE (BS)

Curriculum Guide

GPA Requirement

Major GPA: 2.00 or higher
Overall GPA: 2.00 or higher

Summary*

Code	Title	Hours
	Rock Studies 2 Requirements	44
	Other Basic Requirements	0-3
	Major/Concentration Requirements	76
	Natural Science and Math College-Wide Requirements	12
	Elective	3

* All undergraduate degree programs require a minimum of 120 credits. Some courses meet multiple requirements, but are only counted once toward the 120 credit total required to graduate.

Rock Studies 2 Requirements

Code	Title	Hours
The Rock		
SUBJ 139	Foundations of Academic Discovery ¹	3
ENGL 102	Critical Writing	3
ENGL 104	Critical Reading	3
MATH 225	Calculus I	4
Select one of the following:		
COMM 200	Civil Discourse: Theory & Practice	3
PHIL 110	Ethics and Civil Discourse	3
POLS 235	Civil Discourse and Democracy	3
Subtotal		16
Integrated Inquiry		
<i>Creative and Aesthetic Inquiry</i>		
Select 3 Credits (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
<i>Humanities Inquiry</i>		
Select 3 Credits (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
<i>Social Science Inquiry</i>		
Select 3 Credits (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
<i>Natural Sciences Inquiry</i>		
CHEM 107	General Chemistry I	3
CHEM 111	General Chemistry I Lab	1
<i>Physical Sciences Inquiry</i>		
PHYS 216	University Physics 1 with Lab	4
Subtotal		17
Additional Rock Studies 2 Requirements		
Required Thematic Thread Coursework:		
MATH 230	Calculus II	4

PHYS 217	University Physics 2 with Lab	4
ENGL 205	Introduction to Professional Writing	3
Subtotal		11
Total Hours		44

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

Basic Math Requirement

Check with your adviser or a current degree audit report to see if you have been exempted from this course. The credit earned in this course will not be counted toward the 120 credit hour minimum needed to earn a degree.

Code	Title	Hours
Complete one of the following:		
Meet required minimum SAT or ACT math score OR		
ESAP 110	Beginning Algebra	0-3
Total Hours		0-3

DIVERSITY, EQUITY, AND INCLUSION REQUIREMENT

Students must take and pass a course with the Diversity, Equity, and Inclusion (DEI) designation prior to graduation. Students can meet this requirement by taking any DEI - designated course in any program at any time during their undergraduate career.

Major/Concentration Requirements

- 38 major credits must be taken at SRU or PASSHE
- 38 major credits must be taken at the 300 level or above

Code	Title	Hours
Required Engineering Courses		
ENGR 110	Introduction to Engineering ¹	2
ENGR 120	Engineering Design Tools ¹	2
ENGR 210	Statics ¹	3
ENGR 310	Introduction to Electrical Engineering ¹	3
ENGR 251	Circuit Analysis Lab	1
ENGR 340	Engineering Economics ¹	3
MECH 330	Introduction to Mechatronics ¹	4
MECH 411	Mechanical Control Systems ¹	3
ECSE 230	Instrumentation with Lab	3
ECSE 310	Circuit Analysis II	3
ECSE 320	Electrical Circuit Design	3
ECSE 340	Processor Design and Structure	3
ECSE 350	Signals and Systems	3
ECSE 360	Engineering Electromagnetics	3
ECSE 410	Energy Conversion	3
ECSE 460	Capstone Design I	3
ECSE 461	Capstone Design II	3
Subtotal		48
Electrical and Computer Engineering Electives		
Select two of the following:		
ECSE 420	Wireless Communication	6
ECSE 430	Digital Signal Processing	
ECSE 440	Electric Power Systems	
ECSE 470	Applied Digital Systems	

Subtotal		6
Required Math and Science Courses		
MATH 231	Calculus III ¹	4
MATH 232	Linear Algebra ¹	3
MATH 301	Differential Equations I ¹	3
STAT 350	Applied Statistics ¹	3
CPSC 146	Programming Principles ¹	3
CPSC 246	Advanced Programming Principles ¹	3
CPSC 423	Computer Networks ¹	3
Subtotal		22
Total Hours		76

¹ Course counts for 50% of Major requirements and Major GPA

* Some courses may require pre-requisites. Please see course descriptions to determine if there are any pre-requisites for that specific course.

FREE ELECTIVE

Code	Title	Hours
Select three credits		3
Total Hours		3

Natural Science and Math College-Wide Requirements

Code	Title	Hours
CHEM 107	General Chemistry I ¹	3
CHEM 111	General Chemistry I Lab ¹	1
MATH 225	Calculus I ¹	4
PHYS 216	University Physics 1 with Lab	4
Total Hours		12

¹ Course can be counted as a Rock Studies 2 Requirement, but earns credit only once toward your 120-credits total.

Important Curriculum Guide Notes

This Curriculum Guide is provided to help SRU students and prospective students better understand their intended major curriculum. Enrolled SRU students should note that the My Rock Audit may place already-earned and/or in progress courses in different, yet valid, curriculum categories. Enrolled SRU students should use the My Rock Audit Report and materials and information provided by their faculty advisers to ensure accurate progress towards degree completion. *The information on this guide is current as of the date listed. Students are responsible for curriculum requirements at the time of enrollment at the University.*

PASSHE - Pennsylvania State System of Higher Education Institutions

Electrical and Computer Engineering - BS (6185)

This program is effective as of Fall 2025.

UCC 07.19.2024

New program beginning in the 2025\2026 academic year.