

ELECTRICAL AND COMPUTER ENGINEERING, BACHELOR OF SCIENCE (BS)/PROFESSIONAL PILOT (CCBC)

Curriculum Guide

GPA Requirement

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

Summary*

Code	Title	Hours
	Rock Studies 2 Requirements (taken at CCBC)	20
	Rock Studies 2 Requirements (taken at SRU)	24
	Advanced Piloting Requirements (taken at CCBC)	42
	Major/Concentration Requirements (taken at SRU)	80
	Natural Science and Math College-Wide Requirements	12

* 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
WRIT 101	English Composition (taken at CCBC)	3
LITR 210	Concepts of Literature (taken at CCBC)	3
COMM 201	Public Speaking (taken at CCBC)	3
MATH 125	Calculus I (taken at CCBC)	4
	Subtotal	16

Integrated Inquiry

Creative and Aesthetic Inquiry

Select 3 Credits (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)	3
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Humanities Inquiry

Select 3 Credits (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)	3
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Social Science Inquiry

AVIP 260	Human Factors Theory (taken at CCBC)	3
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Natural Sciences Inquiry

CHEM 107	General Chemistry I	3
CHEM 111	General Chemistry I Lab	1

Physical Sciences Inquiry

METR 140	Foundations in Meteorology (taken at CCBC)	4
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	Subtotal	17
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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.

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

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

Code	Title	Hours
<i>Required Engineering Courses</i>		
ENGR 110	Introduction to Engineering ¹	2
ENGR 120	Engineering Design Tools ¹	2
ENGR 210	Statics ¹	3
ENGR 250	Circuit Analysis I ¹	3
ENGR 251	Circuit Analysis Lab	1
ENGR 340	Engineering Economics ¹	3
MECH 330	Introduction to Mechatronics ¹	4
MECH 411	Automatic 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
PHYS 216	University Physics 1 with Lab	4
	Subtotal	52

Electrical and Computer Engineering Electives

<i>Select two of the following:</i>		6
ECSE 420	Wireless Communication	
ECSE 430	Digital Signal Processing	
ECSE 440	Electric Power Systems	
ECSE 470	Applied Digital Systems	
ECSE 498	Selected Topics	
	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	Object-Oriented Programming ¹	3
CPSC 423	Computer Networks ¹	3

Subtotal	22	PASSHE - Pennsylvania State System of Higher Education Institutions
Total Hours	80	Electrical and Computer Engineering - BS (6185) ADVANCED PILOTING WITH CCBC (ADVP) /CIM 587 This program is effective as of Spring 2026 Revised 01.05.2026 MOU date: 09.18.2025

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.

Code	Title	Hours
Advanced Piloting Required Coursework Completed at CCBC:		
AVIP 120	Foundations and Development of Aviation	3
AVIP 180	Instrument Flight Theory	7
AVIP 190	Instrument Flight Rating	2
AVIP 202	Aircraft Engines Theory	3
AVIP 204	Aircraft Systems Theory	3
AVIP 215	Commercial Flight Theory	5
AVIP 220	Commercial Flight Certification I	3
AVIP 225	Commercial Flight Certification II	3
AVIP 250	Multi-Engine Flight Rating	1
AVIP 270	Aerodynamics of Flight	3
AVIP 275	Certified Flight Instructor Theory	2
CIST 100	Introduction to Information Technology	3
Select two of the following:		4
AVIP 280	Certified Flight Instructor - Airplane	
AVIP 285	Certified Flight Instructor - Instruments	
AVIP 288	Certified Flight Instructor - Multi-Engine	
Total Hours		42

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.*