

MECHANICAL ENGINEERING, BACHELOR OF SCIENCE (BS)/ PROFESSIONAL PILOT (CCBC)

Curriculum Guide

GPA Requirement^T

Overall GPA: 2.0 or higher

Summary*

Code	Title	Hours
Rock Studies 2 Requirements (taken at CCBC)		17
Rock Studies 2 Requirements (taken at SRU)		27
Professional Pilot Requirements (taken at CCBC)		42
Major/Concentration Requirements (taken at SRU)		88

* 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
MATH 160	Calculus I (taken at CCBC)	4
Select 1 one of the following:		3
COMM 200	Civil Discourse: Theory & Practice	
PHIL 110	Ethics and Civil Discourse	
POLI 235	Civil Discourse and Democracy	
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 (taken at CCBC)</i>		
AVIP 260	Human Factors Theory (taken at CCBC)	3
<i>Natural Sciences Inquiry</i>		
CHEM 107 & CHEM 111	General Chemistry I and General Chemistry I Lab	4
<i>Physical Sciences Inquiry (taken at CCBC)</i>		
METR 140	Foundations in Meteorology (taken at CCBC)	4
Subtotal		17
Additional Rock Studies Requirements		
MATH 230	Calculus II	4
PHYS 217	University Physics 2 with Lab	4

ENGL 205	Introduction to Professional Writing	3
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 Requirements/Concentration

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

Code	Title	Hours
<i>Required Engineering Courses:</i>		
ENGR 110	Introduction to Engineering	2
ENGR 120	Engineering Design Tools	2
ENGR 130	Engineering Computing Tools	2
ENGR 210	Statics	3
ENGR 220	Engineering Materials	3
ENGR 230	Mechanics of Materials	3
ENGR 231	Mechanics of Materials Lab	1
ENGR 240	Dynamics	3
ENGR 250	Circuit Analysis I	3
ENGR 251	Circuit Analysis Lab	1
ENGR 301	Fluid Mechanics	3
ENGR 320	Thermodynamics	3
ENGR 340	Engineering Economics	3
MECH 310	Machines and Mechanisms	3
MECH 320	Manufacturing Processes	3
MECH 330	Introduction to Mechatronics	4
MECH 340	Heat Transfer	4
MECH 410	Machine Design	4
MECH 411	Automatic Control Systems	3
MECH 430	Mechatronics	3
MECH 460	Capstone Design I	3
MECH 461	Capstone Design II	3
PHYS 216	University Physics 1 with Lab	4
Subtotal		66
<i>Mechanical Engineering Electives</i>		
Select three of the following:		9
MECH 401	Gas Dynamics	
MECH 412	Finite Element Analysis	
MECH 420	Design and Manufacturing	
MECH 421	Mechanical Vibrations	
MECH 422	Thermal System Design	
MECH 423	Additive Manufacturing	
MECH 431	Introduction to Robotics	
MECH 440	HVAC Systems	
MECH 441	Sustainable Energy	
MECH 498	Selected Topics	

Subtotal		9
<i>Required Math and Science Courses</i>		
MATH 231	Calculus III	4
MATH 232	Linear Algebra	3
MATH 301	Differential Equations I	3
STAT 350	Applied Statistics	3
Subtotal		13
Total Hours		88

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.

Code	Title	Hours
Professional Pilot Required Coursework Completed at CCBC:		
AVIP 120	Foundations and Development of Aviation	3
AVIP 160	Private Pilot Flight Theory	7
AVIP 170	Private Pilot Flight Certification	3
AVIP 180	Instrument Flight Theory	7
AVIP 190	Instrument Flight Rating	2
AVIP 205	Aircraft Engines & Systems	4
AVIP 215	Commercial Flight Theory	5
AVIP 220	Commercial Flight Certification I	3
AVIP 225	Commercial Flight Certification II	3
AVIP 270	Aerodynamics of Flight	3
AVIP 275	Certified Flight Instructor Theory	2
AVIP 280	Multi-Engine Rating	1
CIST 100	Introduction to Information Technology	3
Total Hours		46

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

Mechanical Engineering, Bachelor of Science (BS) - (6184)

PROFESSIONAL PILOT WITH CCBC (PRFP) /CIM 590

This program is effective as of Spring 2026

Revised 01.05.2026

MOU date: 09.18.2025