

# MECHANICAL 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	41
	Other Basic Requirements	0-3
	Major/Concentration Requirements	84
	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
<b>The Rock</b>		
SUBJ 139	Foundations of Academic Discovery <sup>1</sup>	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
<b>Integrated Inquiry</b>		
<i>Creative and Aesthetic Inquiry</i>		
Select 3 Credits ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
<i>Humanities Inquiry</i>		
Select 3 Credits ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
<i>Social Science Inquiry</i>		
Select 3 Credits ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		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
<b>Additional Rock Studies 2 Requirements</b>		
Required Thematic Thread Coursework:		
MATH 230	Calculus II	4
PHYS 217	University Physics 2 with Lab	4

Subtotal	8
<b>Total Hours</b>	<b>41</b>

<sup>1</sup> 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
<b>Total Hours</b>		<b>0-3</b>

### 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

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

Code	Title	Hours
<b>Required Engineering Courses</b>		
ENGR 110	Introduction to Engineering <sup>1</sup>	2
ENGR 120	Engineering Design Tools <sup>1</sup>	2
ENGR 130	Engineering Computing Tools <sup>1</sup>	2
ENGR 210	Statics <sup>1</sup>	3
ENGR 220	Engineering Materials <sup>1</sup>	3
ENGR 230	Mechanics of Materials <sup>1</sup>	3
ENGR 231	Mechanics of Materials Lab <sup>1</sup>	1
ENGR 240	Dynamics <sup>1</sup>	3
ENGR 301	Fluid Mechanics <sup>1</sup>	3
ENGR 310	Introduction to Electrical Engineering <sup>1</sup>	3
ENGR 320	Thermodynamics <sup>1</sup>	3
ENGR 340	Engineering Economics <sup>1</sup>	3
MECH 310	Machines and Mechanisms <sup>1</sup>	4
MECH 320	Manufacturing Processes <sup>1</sup>	3
MECH 330	Introduction to Mechatronics <sup>1</sup>	4
MECH 340	Heat Transfer <sup>1</sup>	4
MECH 410	Machine Design <sup>1</sup>	4
MECH 420	Design and Manufacturing <sup>1</sup>	3
MECH 430	Mechatronics <sup>1</sup>	3
MECH 460	Capstone Design I <sup>1</sup>	3
MECH 461	Capstone Design II <sup>1</sup>	3
Subtotal		62
<b>Mechanical Engineering Electives</b>		
Select three of the following:		
MECH 411	Mechanical Control Systems	9
MECH 412	Finite Element Analysis	

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	
<b>Required Math and Science Courses</b>		
MATH 231	Calculus III <sup>1</sup>	4
MATH 232	Linear Algebra <sup>1</sup>	3
MATH 301	Differential Equations I <sup>1</sup>	3
STAT 350	Applied Statistics <sup>1</sup>	3
Subtotal		22
<b>Total Hours</b>		<b>84</b>

<sup>1</sup> 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
<b>Total Hours</b>		<b>3</b>

## Natural Science and Math College-Wide Requirements

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

<sup>1</sup> 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

MECHANICAL ENGINEERING - BS (6184)

This program is effective as of Fall 2019.

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