

BIOLOGY, BACHELOR OF SCIENCE (BS) - CONCENTRATION IN PRE-HEALTH PROFESSIONS / PRE-CHIROPRACTIC (PALMER) (3+3)

Program Learning Outcomes

- **Competence in Laboratory and Research Skills:** To conduct, assess, and communicate research investigations using established scientific practices. (SRU UG 1, 2, 3, 4, 5, 7, 10)
- **Core Concepts for Biological Literacy:** (SRU UG 1, 2, 3, 4, 5, 7, 9)
 - Knowledge/Content
 - Evolution
 - Structure and function across all levels of biological organization
 - Diversity and interactions of life
 - Information flow, exchange and storage in biological systems
 - Critical Thinking/Problem Solving
 - Connect information from cognate science courses and liberal arts courses to biological concepts
 - Apply scientific information to current and future societal problems
- **Participation in Diverse, Enriching Scientific Activities:** Apply technical and professional skills in hands-on laboratory, clinical or field experiences. (SRU UG 1, 2, 3, 4, 5, 7, 8, 9)
- **Professional Attitude:** Graduates demonstrate professional attitude, behavior, and ability to interact with people from diverse backgrounds and cultures. (SRU UG 1, 5, 7, 8, 9)

Related Links

Biology - Pre-Health Professions/Palmer Pre-Chiropractic Program Page (<https://www.sru.edu/academics/majors-and-minors/biology-pre-chiropractic-33/>)

Biology Department Page (<https://www.sru.edu/academics/colleges-and-departments/ches/departments/biology/>)

Professional Licensure/Certification Page (<https://www.sru.edu/students/student-consumer-information/professional-licensures/>)

Curriculum Guide

GPA Requirement

Overall GPA: 3.0 or higher
Major GPA: 2.0 or higher
Core GPA: 2.0 or higher

Summary*

Code	Title	Hours
	Rock Studies 2 Requirements	45
	Other Basic Requirements	0-3
	Computer Competency	0-3

Major/Concentration Requirements	41
Natural Science and Math College-Wide Requirements	12
Electives	34

* 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. However, because this is a pre-professional program, credits taken during the 1st year of the graduate program are applied toward the undergraduate credit hours to meet the 120 credits required for your undergraduate degree.

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 125	Precalculus	4
or MATH 225	Calculus I	
Select one of the following:		3
COMM 200	Civil Discourse: Theory & Practice	
PHIL 110	Ethics and Civil Discourse	
POLS 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</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 201	Elements of Physics I with Lab	4
or PHYS 216	University Physics 1 with Lab	
Subtotal		17
Thematic Thread		
Select 12 Credits (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/) ²		12
Total Hours		45

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

² One course from each category; six credits must be 300-level or above; no more than 4 credits from one subject area; specific courses required in first major, regardless of prefix of course, cannot be used to satisfy thread requirements; any course with same prefix as first major cannot be used to satisfy thread requirements, even if it is not a course in the first major.

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:		0-3
Meet required minimum SAT or ACT math score OR		
ESAP 110	Beginning Algebra	
Total Hours		0-3

Computer Competency

Code	Title	Hours
Demonstrate "computer competency" by one of the following:		0-3
Pass Computer Competency Exam OR		
Select one of the following at SRU or another post-secondary institution:		
CPSC 100	Introduction to Computing for Liberal Arts	
CPSC 110	Computer Concepts	
CPSC 130	Introduction to Computing and Programming	
PE 202	Technology for Wellness	
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

- Students desiring a Biology Major must maintain at least a 2.000 average in Biology.
- Students must earn a "C" or better in both Biology I with Lab (BIOL 113) and Biology II with Lab (BIOL 114) before proceeding to their next biology course.
- Students must earn a "C" or better in both Genetics with Lab (BIOL 250) and Biometry with Lab (BIOL 325) prior to graduating.
- To view the SRU policy on senior undergraduate students earning graduate credit, click here (<https://catalog.sru.edu/academic-policies/senior-undergraduate-students-earning-graduate-credit/>).

Code	Title	Hours
Biology Core Requirements		
BIOL 113	Biology I: Foundations of Ecology, Evolution and Diversity with Lab ¹	4
BIOL 114	Biology II: Foundations of Molecules, Genes and Cells with Lab ¹	4
BIOL 250	Genetics with Lab ¹	4
BIOL 325	Biostatistics and Experimental Design with Lab ¹	3
Subtotal		15
Required Upper-Level Biology		
BIOL 330	Microbiology/Lab ¹	3
BIOL 340 or BIOL 410	Vertebrate Anatomy with Lab ¹ Animal Physiology with Lab	3

BIOL 492	Biology Seminar ¹	1
Subtotal		7
Required Chemistry Courses		
CHEM 108	General Chemistry II ^{2,3}	3
CHEM 112	General Chemistry II Lab ³	1
CHEM 201	Organic Chemistry I ³	3
CHEM 202	Organic Chemistry II ³	3
CHEM 211	Organic Chemistry Laboratory I ³	1
CHEM 212	Organic Chemistry Laboratory II ³	1
CHEM 335	Biochemistry I ³	3
Subtotal		15
Required Physics Courses		
PHYS 202 or PHYS 217	Elements of Physics II/ Lab ³ University Physics 2 with Lab	4
Total Hours		41

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

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

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

³ Course counts for 50% of Major requirements but not for Major GPA

Natural Science and Math College-Wide Requirements

Code	Title	Hours
CHEM 107	General Chemistry I	3
CHEM 111	General Chemistry I Lab	1
MATH 125 or MATH 225	Precalculus Calculus I	4
PHYS 201 or PHYS 216	Elements of Physics I with Lab University Physics 1 with Lab	4
Total Hours		12

Co-curricular and Experiential Learning

Students are encouraged to explore additional curricular and co-curricular opportunities. There is a strong correlation between long-term student success and participation in the following types of programs and activities:

1. Volunteering
2. Job Shadowing

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

BIOLOGY - PRE-HEALTH PROFESSIONS BS

Palmer Chiropractic (3+3.3) (61PC)
 This program is effective as of Summer 2023
 Revised 05.15.2023
 UCC 11.29.2022

RECOMMENDED THREE-YEAR PLAN

Course	Title	Hours
First Year		
Fall		
BIOL 113	Biology I: Foundations of Ecology, Evolution and Diversity with Lab	4
CHEM 107	General Chemistry I	3
CHEM 111	General Chemistry I Lab	1
ENGL 102	Critical Writing	3
ESAP 101	FIRST Seminar ¹	1
SUBJ 139	Foundations of Academic Discovery *	3
Hours		15
Spring		
ENGL 104	Critical Reading	3
BIOL 114	Biology II: Foundations of Molecules, Genes and Cells with Lab	4
CHEM 108	General Chemistry II	3
CHEM 112	General Chemistry II Lab	1
Creative & Aesthetic Inquiry (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
Humanities Inquiry (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
Hours		17
Second Year		
Fall		
BIOL 250	Genetics with Lab	4
CHEM 201	Organic Chemistry I	3
CHEM 211	Organic Chemistry Laboratory I	1
Select one of the following:		3
COMM 200	Civil Discourse: Theory & Practice	
PHIL 110	Ethics and Civil Discourse	
POLS 235	Civil Discourse and Democracy	
Social Science Inquiry (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
Declare a Thematic Thread ²		
Hours		14
Spring		
BIOL 325	Biostatistics and Experimental Design with Lab	3
CHEM 202	Organic Chemistry II	3
CHEM 212	Organic Chemistry Laboratory II	1
MATH 225	Calculus I	4
or MATH 125	or Precalculus	
Thematic Thread Requirement (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
Hours		14
Third Year		
Fall		
CHEM 335	Biochemistry I	3

BIOL 340 or BIOL 410	Vertebrate Anatomy with Lab or Animal Physiology with Lab	3
PHYS 201 or PHYS 216	Elements of Physics I with Lab or University Physics 1 with Lab	4
Thematic Thread Requirement (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
Hours		13
Spring		
BIOL 330	Microbiology/Lab	3
BIOL 492	Biology Seminar	1
PHYS 202 or PHYS 217	Elements of Physics II/ Lab or University Physics 2 with Lab	4
Thematic Thread Requirement (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
Thematic Thread Requirement (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
Free Elective		3
Hours		17
Fourth Year		
Fall		
Palmer Chiropractic School		15
Hours		15
Spring		
Palmer Chiropractic School		15
Hours		15
Total Hours**		120

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

² Work with your Academic Adviser to declare a Thematic Thread by the end of your fall semester in your second year.

¹ Students are encouraged to take ESAP 101 as a Free Elective.

** This document is meant to serve as a guide. Some planners may show more than 120 credits because faculty have created flexibility in choosing courses. However, only 120 credits are required to obtain a degree. Please consult with your academic adviser and refer to your curriculum guide prior to registering for courses. This plan should be reviewed, and verified, by you and your academic adviser at least once each academic year.

Major/Concentration: 6108/PHLT

2nd Major: 61PC

Revised date: 06.14.2023