

CHEMISTRY, BACHELOR OF SCIENCE (BS) - CONCENTRATION IN HEALTH SCIENCES - LIBERAL STUDIES

The Slippery Rock University Chemistry Degree is certified by the American Chemistry Society or ACS. In order to earn ACS certification, students must complete 2 credits of Independent Study and 1 credit of Research in addition to the BS requirements. Students can also choose an option concentration in order to broaden their background in chemistry or to gain additional experience if they wish to pursue other interests.

Concentrations are available in the following areas:

- Biochemistry
- Computational Chemistry
- Education
- Environmental Chemistry
- Forensic Chemistry
- Health Sciences

Program Learning Outcomes

- Students will demonstrate knowledge of the main disciplines of chemistry, namely *Organic, Analytical, Biological, Physical, and Inorganic* chemistry.
- Students will demonstrate development of technical skills for practical applications of chemistry.
- Students will present collected experimental data in written and oral reports.
- Students and faculty will participate in faculty-led research projects. Students are expected to be actively working in the laboratory under the supervision and guidance of a faculty mentor.

Related Links

Chemistry - Health Sciences, BS Program Page (<https://www.sru.edu/academics/majors-and-minors/chemistry-health-sciences/>)

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

Professional Licensure/Certification Page (<http://www.sru.edu/Documents/offices/PRMA/PLC.pdf>)

Curriculum Guide

GPA Requirement

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

Summary*

Code	Title	Hours
	Liberal Studies Requirements	45-46
	Other Basic Requirements	0-3
	Computer Competency	0-3

Major/Concentration Requirements	56
Natural Science and Mathematics College-Wide Requirements	12
Electives	18
ACS Certification –Optional	0-3

* 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.

Liberal Studies Requirements

See Liberal Studies Guide for Goal and Enrichment choices

Code	Title	Hours
Goal Course Requirements		
Complete Goal requirements as indicated below		
<i>Basic Requirements</i>		
ENGL 102	Critical Writing	3
ENGL 104	Critical Reading	3
COMM 200	Civil Discourse: Theory & Practice	3
<i>The Arts</i>		
Goal (https://catalog.sru.edu/undergraduate/liberal-studies/liberal-studies-guide/)		3
<i>Global Community</i>		
Goal–Non-US (https://catalog.sru.edu/undergraduate/liberal-studies/liberal-studies-guide/)		3
Goal–Non-US (https://catalog.sru.edu/undergraduate/liberal-studies/liberal-studies-guide/)		3
Goal–US (https://catalog.sru.edu/undergraduate/liberal-studies/liberal-studies-guide/)		3
<i>Human Institutions/Interpersonal Relationships</i>		
PSYC 105	Introduction to Psychology ¹	3
<i>Science, Technology & Math</i>		
Select 9-10 credits of the following recommended courses:		9-10
BIOL 104	Principles of Biology with Lab ¹	
PHYS 211	General Physics I with Lab ¹	
Lab-Sci (https://catalog.sru.edu/undergraduate/liberal-studies/liberal-studies-guide/)		
MATH 225	Calculus I ¹	
<i>Challenges of the Modern Age</i>		
Goal (https://catalog.sru.edu/undergraduate/liberal-studies/liberal-studies-guide/)		3
Subtotal		36-37
Enrichment Course Requirements		
Select one course from three of the following Enrichment Areas:		9
The Arts (https://catalog.sru.edu/undergraduate/liberal-studies/liberal-studies-guide/)		
Global Community (https://catalog.sru.edu/undergraduate/liberal-studies/liberal-studies-guide/)		
Human Institutions/Interpersonal Relationships (https://catalog.sru.edu/undergraduate/liberal-studies/liberal-studies-guide/)		
Science, Technology & Math (p. 2) ²		
Subtotal		9
Total Hours		45-46

Note¹ Course counts for 50% of Major requirements and Major GPA² MATH 230 Recommended¹**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		
ACSD 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

Major/Concentration Requirements

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

Code	Title	Hours
Required Introductory Chemistry Courses		
CHEM 108	General Chemistry II ¹	3
CHEM 112	General Chemistry II Lab ¹	1
Subtotal		4
Required Foundation Chemistry Courses		
CHEM 201	Organic Chemistry I ¹	3
CHEM 211	Organic Chemistry Laboratory I ¹	1
CHEM 243	Introduction to Research in Chemistry ¹	1
CHEM 301	Physical Chemistry I ¹	3
CHEM 321	Physical Chemistry Laboratory I ¹	1
CHEM 335	Biochemistry I ¹	3
CHEM 336	Biochemistry Laboratory I ¹	1
CHEM 350	Analytical Chemistry ¹	3
CHEM 351	Analytical Chemistry Lab ¹	1
CHEM 442	Inorganic Chemistry ¹	3
CHEM 452	Physical Inorganic Chemistry Laboratory ¹	1
CHEM 491	Chemistry Seminar ¹	1
Subtotal		22
Required In-Depth Chemistry Courses		
CHEM 202	Organic Chemistry II ¹	3
CHEM 212	Organic Chemistry Laboratory II ¹	1

CHEM 302	Physical Chemistry II ¹	3
CHEM 425	Instrumental Analysis ¹	3
CHEM 426	Instrumental Analysis Laboratory ¹	1
CHEM 460	Materials Chemistry ¹	3
Subtotal		14

Additional Required In-Depth Chemistry Courses

Select four credits (must include one lecture and one lab):		4
CHEM 337	Biochemistry II ¹	
CHEM 338	Biochemistry Laboratory II ¹	
CHEM 340	Air Quality Assessment ¹	
CHEM 370	Water Quality Assessment ¹	
CHEM 415	Forensic Analysis ¹	
CHEM 416	Forensic Analysis Lab ¹	
CHEM 475	Advanced Organic Synthesis ¹	
Subtotal		4

Cognate Courses

BIOL 104	Principles of Biology with Lab ¹	4
PHYS 213	General Physics III/ Lab ¹	4
MATH 230	Calculus II ¹	4
Subtotal		12
Total Hours		56

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.

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
PHYS 211	General Physics I with Lab ¹	4
MATH 225	Calculus I ¹	4
Total Hours		12

¹ Course counts for 50% of Major requirements and Major GPA**Health Sciences Concentration**

Code	Title	Hours
BIOL 216	Anatomy and Physiology I with Lab ¹	3
BIOL 217	Anatomy and Physiology II with Lab ¹	3
BIOL 250	Genetics with Lab ¹	4
BIOL 330	Microbiology/Lab ¹	3
PSYC 105	Introduction to Psychology ¹	3
STAT 152	Elementary Statistics I ¹	3
Total Hours		19

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

ACS Certification – Optional

Code	Title	Hours
CHEM 490	Independent Study ¹	2
CHEM 496	Research ¹	1
Total Hours		3

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

CHEMISTRY - BS (6118)
 Concentration in Health Sciences (CHHS)
 This program is effective as of Fall 2019.
 Revised 7-2019
 UCC 3.5.2019