

# CHEMISTRY, BACHELOR OF SCIENCE (BS) - CONCENTRATION IN COMPUTATIONAL CHEMISTRY

## Recommended Four-Year Plan

Course	Title	Hours
<b>First Year</b>		
<b>Fall</b>		
CHEM 107 & CHEM 111	General Chemistry I and General Chemistry I Lab	4
BIOL 114	Biology II: Foundations of Molecules, Genes and Cells with Lab	4
ENGL 102	Critical Writing	3
ESAP 101	FYRST Seminar *	1
Select one of the following:		4
MATH 125	Precalculus	
MATH 225	Calculus I	
MATH 230	Calculus II	
<b>Hours</b>		<b>16</b>
<b>Spring</b>		
CHEM 108 & CHEM 112	General Chemistry II and General Chemistry II Lab	4
STAT 152	Elementary Statistics I	3
SUBJ 139	Foundations of Academic Discovery	3
Select one of the following:		4
MATH 225	Calculus I (if necessary)	
MATH 230	Calculus II	
MATH 240	Linear Algebra and Differential Equations	
<b>Hours</b>		<b>14</b>
<b>Second Year</b>		
<b>Fall</b>		
CHEM 201 & CHEM 211	Organic Chemistry I and Organic Chemistry Laboratory I	4
CPSC 146	Programming Principles	3
ENGL 104	Critical Reading	3
PHYS 216	University Physics 1 with Lab	4
Select one of the following:		3-4
MATH 230	Calculus II	
MATH 240	Linear Algebra and Differential Equations	
<b>Hours</b>		<b>17-18</b>
<b>Spring</b>		
CHEM 202 & CHEM 212	Organic Chemistry II and Organic Chemistry Laboratory II	4
CPSC 246	Object-Oriented Programming	3
MATH 240	Linear Algebra and Differential Equations	3
PHYS 217	University Physics 2 with Lab	4
Select one of the following (Civil Discourse):		3
COMM 200	Civil Discourse: Theory & Practice	
PHIL 110	Ethics and Civil Discourse	

POLI 235	Civil Discourse and Democracy	
<b>Hours</b>		<b>17</b>
<b>Third Year</b>		
<b>Fall</b>		
Select one of the following:		7-8
In even years, select:		
CHEM 335 & CHEM 336	Biochemistry I and Biochemistry Laboratory I	
CHEM 442	Inorganic Chemistry	
In odd years, select:		
CHEM 301 & CHEM 321	Physical Chemistry 1 and Physical Chemistry Laboratory I	
CHEM 350 & CHEM 351	Analytical Chemistry and Analytical Chemistry Lab	
PHYS 385	Computational Physics	3
Inquiry/Thread/Elective ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
Inquiry/Thread/Elective ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
<b>Hours</b>		<b>16-17</b>
<b>Spring</b>		
Select one of the following:		7
In odd years, select:		
CHEM 452	Physical Inorganic Chemistry Laboratory	
CHEM 460	Materials Chemistry (odd years)	
Inquiry/Thread/Elective Course ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		
In even years, select:		
CHEM 302	Physical Chemistry II	
CHEM 425 & CHEM 426	Instrumental Analysis and Instrumental Analysis Laboratory	
Select one of the following:		4
In Depth Chemistry Elective (1 lecture and 1 lab)		
CHEM 337 & CHEM 338	Biochemistry II and Biochemistry Laboratory II	
CHEM 340	Air Quality Assessment	
CHEM 370	Water Quality Assessment	
CHEM 415 & CHEM 416	Forensic Analysis and Forensic Analysis Lab	
CHEM 475	Advanced Organic Synthesis	
CPSC 374	Algorithms and Data Structures	3
Inquiry/Thread/Elective Course ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
<b>Hours</b>		<b>17</b>
<b>Fourth Year</b>		
<b>Fall</b>		
Select one of the following:		7-8
In even years, select:		
CHEM 335 & CHEM 336	Biochemistry I and Biochemistry Laboratory I	
CHEM 442	Inorganic Chemistry	
In odd years, select:		
CHEM 301 & CHEM 321	Physical Chemistry 1 and Physical Chemistry Laboratory I	

CHEM 350 & CHEM 351	Analytical Chemistry and Analytical Chemistry Lab	
CPSC 480	Topics in Computer Science: Machine Learning	3
Inquiry/Thread/Elective Course ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
Inquiry/Thread/Elective Course ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
<b>Hours</b>		<b>16-17</b>
<b>Spring</b>		
Select one of the following:		7
In odd years, select:		
CHEM 452	Physical Inorganic Chemistry Laboratory	
CHEM 460	Materials Chemistry	
Inquiry/Thread/Elective Course ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		
In even years, select:		
CHEM 302	Physical Chemistry II	
CHEM 425 & CHEM 426	Instrumental Analysis and Instrumental Analysis Laboratory	
Select one of the following In Depth Chemistry Electives (1 lecture and 1 lab):		4
CHEM 337 & CHEM 338	Biochemistry II and Biochemistry Laboratory II	
CHEM 340	Air Quality Assessment	
CHEM 370	Water Quality Assessment	
CHEM 415 & CHEM 416	Forensic Analysis and Forensic Analysis Lab	
CHEM 475	Advanced Organic Synthesis	
Inquiry/Thread/Elective Course ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
Inquiry/Thread/Elective Course ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
<b>Hours</b>		<b>17</b>
<b>Total Hours**</b>		<b>130-133</b>

<sup>1</sup> Course offered in multiple subjects; cannot take course in first major subject

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

*\*\*This document serves as a guide. Earning a degree requires at least 120 credits, though some majors require more. Before registering for courses, consult your academic adviser and review your curriculum guide. Be sure to review and confirm your plan with your adviser at least once each academic year.*

Major Code: 6118

Concentration Code: CCHM

Revised date: 09.23.2025