

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

Recommended Four-Year Plan

Course	Title	Hours
First Year		
Fall		
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	
Hours		16
Spring		
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	
Hours		14
Second Year		
Fall		
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	
Hours		17-18
Spring		
CHEM 202 & CHEM 212	Organic Chemistry II and Organic Chemistry Laboratory II	4
CPSC 246	Advanced Programming Principles	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	

POLS 235	Civil Discourse and Democracy	
Hours		17
Third Year		
Fall		
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 (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
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Hours		16-17
Spring		
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 (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		
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 (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
Hours		17
Fourth Year		
Fall		
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 (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
Inquiry/Thread/Elective Course (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
Hours		16-17
Spring		
Select one of the following:		7
In odd years, select:		
CHEM 452	Physical Inorganic Chemistry Laboratory	
CHEM 460	Materials Chemistry	
Inquiry/Thread/Elective Course (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		
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 (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
Inquiry/Thread/Elective Course (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/)		3
Hours		17
Total Hours**		130-133

¹ 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 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 Code: 6118

Concentration Code: CCHM

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