

CHEMISTRY MAJOR

Acceptance to Major Requirements

Course Requirements:

Code	Title	Hours
CHEM 125	Introduction to Chemical Structure and Properties	4
CHEM 201	Purification and Separation Lab I	1
CHEM 202	Purification and Chromatography Lab II	1
CHEM 250	Reactions of Nucleophiles and Electrophiles (Reactivity 1)	4
CHEM 251	Intermediate Reactions of Nucleophiles and Electrophiles (Reactivity 2)	4
CHEM 255	Macroscopic Chemical Analysis	4

Other Requirements: Courses must be either completed or in progress

48-53 credits required

59-63 credits required with ACS

Required Courses for all Chemistry Majors

Code	Title	Hours
CHEM 125	Introduction to Chemical Structure and Properties	4
One of the following:		4
CHEM 250	Reactions of Nucleophiles and Electrophiles (Reactivity 1)	
CHEM 251	Intermediate Reactions of Nucleophiles and Electrophiles (Reactivity 2)	
CHEM 255	Macroscopic Chemical Analysis	
CHEM 315	Advanced Reactions (Reactivity 3)	
0 or 1 credit Lab		0-1
CHEM 201	Purification and Separation Lab I	
CHEM 202	Purification and Chromatography Lab II	
CHEM 203	Synthesis Lab	
CHEM 205	Chemical Measurement Lab	
One of the following:		1
CHEM 304	Analytical Method Development and Validation Laboratory	
CHEM 306	Advanced Laboratory Topics	
CHEM 349	Chemistry in Experience and Practice	1
CHEM 360	Junior/Senior Capstone Research	2
or COLG 398	Distinguished Thesis Essay, Research or Creative Project	
CHEM XXX		0
MATH 119	Calculus I	4
One of the following:		4
PHYS 105	Physics for the Life Sciences I	
or PHYS 191	Foundations of Physics I	
PHYS 106	Physics for the Life Sciences II	
or PHYS 200	Foundations of Physics II	
Total Hours		20-21

Majors must take the following 300 level 2 credit in-depth courses depending on their choice of concentration and ACS Certification.

Required Additional courses for Chemistry Major (No Concentration)

• **does not include ACS Certification**

Code	Title	Hours
CHEM (300-Level) courses ¹		12
Total Hours		12

¹ Students must take 12 credits of CHEM 3XX, except CHEM 316 Catalysts & Initiators, CHEM 330 Chemistry Lab Research, CHEM 349 Chemistry in Experience and Practice, CHEM 360 Junior/Senior Capstone Research, CHEM 390 Science Ethics: How Science and Policy Shape How We Live in the World. Note: students can elect to take CHEM 359 Symmetry & Spectroscopy or CHEM 318 Microscopic Chemical Analysis, but not both

Required Additional Courses for ACS Certification

Students taking any of the options above (no concentration or any of the concentrations) can be certified by the ACS with additional courses:

Code	Title	Hours
CHEM 318	Microscopic Chemical Analysis	4
MATH 120	Calculus II	4
CHEM 306	Advanced Laboratory Topics	1
CHEM 330	Chemistry Lab Research	2
Total Hours		11

Additional Requirements:

General Education Requirements:

All undergraduate students must complete the requirements of the Integrations Curriculum (IC) which is designed to ensure all of our students receive a liberal arts education. Please review details of the Integrations Curriculum (<https://catalog.csbsju.edu/catalog/academic-programs-policies-regulations/integrations-curriculum/>) requirements here (<https://catalog.csbsju.edu/catalog/academic-programs-policies-regulations/integrations-curriculum/>).

Graduation Requirements:

In addition to the Integrations Curriculum, all undergraduate students must meet the following minimum degree requirements to earn their degree from CSB and SJU.

Credits: 124 total credits, 40 of which must be from upper division coursework

GPA: 2.0 or higher*

Residency: At least 24 of your last 32 credits must be completed at CSB/SJU

Please visit Graduation (<https://catalog.csbsju.edu/catalog/academic-programs-policies-regulations/graduation/>) under the Academic Policies and Regulations (<https://catalog.csbsju.edu/catalog/academic-programs-policies-regulations/>) portion of the catalog for additional details regarding degree requirements.

* Cumulative GPA as well as major(s)/minor(s) GPA. Please note some majors/minors may require a higher GPA to earn their degree.

Four Year Plan

Course	Title	Hours
First Year		
Fall		
CHEM 125	Introduction to Chemical Structure and Properties	4
INTG 100	Foundations	4
LANG		4
CHEM 201	Purification and Separation Lab I	1
INTG 105	College Success	1
Hours		14
Spring		
CHEM 250	Reactions of Nucleophiles and Electrophiles (Reactivity 1)	4
XXXX XXX		4
LANG		4
CHEM 202	Purification and Chromatography Lab II	1
Hours		13
Second Year		
Fall		
CHEM 251	Intermediate Reactions of Nucleophiles and Electrophiles (Reactivity 2)	4
THEO 1XX		4
PHYS 105 or PHYS 191	Physics for the Life Sciences I or Foundations of Physics I	4
LANG		4
CHEM 203	Synthesis Lab	1
Hours		17
Spring		
CHEM 255	Macroscopic Chemical Analysis	4
PHYS 106 or PHYS 200	Physics for the Life Sciences II or Foundations of Physics II	4
MATH 119	Calculus I	4
CHEM 205	Chemical Measurement Lab	1
CHEM 349	Chemistry in Experience and Practice	1
Hours		14
Third Year		
Fall		
CHEM 315	Advanced Reactions (Reactivity 3)	4
XXXX XXX		4
XXXX XXX		4
CHEM 304	Analytical Method Development and Validation Laboratory	1
CHEM 3XX		2
Hours		15
Spring		
CHEM 3XX		2
CHEM 3XX		2
XXXX XXX		4
XXXX XXX		4
CHEM 306	Advanced Laboratory Topics	1
Hours		13
Fourth Year		
Fall		
XXXX XXX		4
XXXX XXX		4
XXXX XXX		4
CHEM 3XX		2
CHEM 3XX		2
Hours		16

Spring		
INTG 300	Learning Integrations	4
CHEM 360	Junior/Senior Capstone Research	2
CHEM XXX		0
XXXX XXX		4
CHEM 3XX		2
Hours		12
Total Hours		114