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
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
CHEM 315	Advanced Reactions (Reactivity 3)	4
0 or 1 credit Lab		0-4
CHEM 201	Purification and Separation Lab I	
CHEM 202	Purification and Chromatography Lab II	
CHEM 203	Synthesis Lab	
CHEM 205	Chemical Measurement Lab	
CHEM 304	Analytical Method Development and Validation Laboratory	1
One of the following:		1
CHEM 306A	Advanced Electronics & Instrumentation Lab	
CHEM 306B	Advanced Biochemical Techniques Lab	
CHEM 306C	Advanced Lab Topic: Synthesis	
CHEM 306D	Advanced Lab Topic: Materials	
CHEM 306E	Advanced Lab Topic: Protein Engineering	
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
PHYS 105	Physics for the Life Sciences I	4
or PHYS 191	Foundations of Physics I	
PHYS 106	Physics for the Life Sciences II	4
or PHYS 200	Foundations of Physics II	
Total Hours		**37-41**

Required Additional courses for Chemistry Major

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 major can be certified by the ACS with these additional courses:

Code	Title	Hours
CHEM 318	Microscopic Chemical Analysis	4
MATH 120	Calculus II	4
One of the following: additional CHEM 306 lab from the following:		1
CHEM 306A	Advanced Electronics & Instrumentation Lab	
CHEM 306B	Advanced Biochemical Techniques Lab	
CHEM 306C	Advanced Lab Topic: Synthesis	
CHEM 306D	Advanced Lab Topic: Materials	
CHEM 306E	Advanced Lab Topic: Protein Engineering	
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 and 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	Learning Foundations (LF)	4
Language 111		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
Elective (CI)		4
Language 112		4
CHEM 202	Purification and Chromatography Lab II	1
Elective (Integrations Req)		4
	Hours	**17**
Second Year		
Fall		
CHEM 251	Intermediate Reactions of Nucleophiles and Electrophiles (Reactivity 2)	4
THEO 100	Theological Explorations (TE)	4
PHYS 105 or PHYS 191	Physics for the Life Sciences I or Foundations of Physics I	4
Language 211		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
CHEM 3@@		2
	Hours	**16**
Third Year		
Fall		
CHEM 315	Advanced Reactions (Reactivity 3)	4
Elective (INTG Requirement)		4
Elective (INTG Requirement)		4
CHEM 304	Analytical Method Development and Validation Laboratory	1
CHEM 3@@		2
	Hours	**15**
Spring		
CHEM 3@@		2
CHEM 3@@		2
Elective (INTG Requirement)		4
Elective (INTG Req)/ACS Requirement		4
CHEM 306 Topics Course		1
Elective (INTG Requirement)		4
	Hours	**17**
Fourth Year		
Fall		
Elective (INTG Requirement)		4
Elective (INTG Requirement)		4
Elective (INTG Requirement)		4
CHEM 3@@		2
CHEM 3@@		2
	Hours	**16**
Spring		
INTG 300	Learning Integrations	4
CHEM 360	Junior/Senior Capstone Research	2
CHEM XXX		0
Elective (INTG Requirement)		4
CHEM 3@@		2
Elective (INTG Req)/ACS Requirement		4
	Hours	**16**
	Total Hours	**128**