

# CHEMISTRY MAJOR - SECONDARY EDUCATION

## 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<sup>1</sup>**

**59-63 credits required with ACS<sup>1</sup>**

<sup>1</sup> additional required courses for Secondary Education (see education website)

## 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
CHEM 201	Purification and Separation Lab I	1
CHEM 202	Purification and Chromatography Lab II	1
CHEM 203	Synthesis Lab	1
CHEM 205	Chemical Measurement Lab	1
CHEM 304	Analytical Method Development and Validation Laboratory	1
CHEM 306	Advanced Laboratory Topics	1
CHEM 349	Chemistry in Experience and Practice	1
CHEM 360 or COLG 398	Junior/Senior Capstone Research Distinguished Thesis Essay, Research or Creative Project	2
CHEM XXX		0
MATH 119	Calculus I	4
PHYS 105 or PHYS 191	Physics for the Life Sciences I Foundations of Physics I	4
PHYS 106 or PHYS 200	Physics for the Life Sciences II Foundations of Physics II	4
<b>Total Hours</b>		<b>41</b>

## 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
<b>Total Hours</b>		<b>11</b>

## 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.

## Chemistry Major with a Minor in Secondary Education

Course	Title	Hours
<b>First Year</b>		
<b>Fall</b>		
CHEM 125 & CHEM 201	Introduction to Chemical Structure and Properties and Purification and Separation Lab I	4
EDUC 111	Introduction to Teaching and Learning in a Diverse World	4
INTG 100	Foundations	4
MATH 119	Calculus I	4
INTG 105	College Success	1
<b>Hours</b>		<b>17</b>
<b>Spring</b>		
CHEM 250 & CHEM 202	Reactions of Nucleophiles and Electrophiles (Reactivity 1) and Purification and Chromatography Lab II	4
LANG 111		4

## 2 Chemistry Major - Secondary Education

MATH 120	Calculus II	4
PHYS 105	Physics for the Life Sciences I	4
<b>Hours</b>		<b>16</b>
<b>Second Year</b>		
<b>Fall</b>		
EDUC 203	Development, Learning, and Mental Health in Childhood and Adolescence	4
LANG 112		4
CHEM 251 & CHEM 203	Intermediate Reactions of Nucleophiles and Electrophiles (Reactivity 2) and Synthesis Lab	4
THEO 100	Theological Explorations	4
EDUC 352	Teaching Reading in the Middle/Secondary Classroom	2
<b>Hours</b>		<b>18</b>
<b>Spring</b>		
CHEM 255 & CHEM 205	Macroscopic Chemical Analysis and Chemical Measurement Lab	4
INTG REQ		4
EDUC 379A & EDUC 305	Educational Psychology: Myths Versus Science and Human Exceptionalities: School, Home, and Community	5
LANG 211		4
CHEM 349	Chemistry in Experience and Practice	0
EDUC 213	Clinical Experience for K-12/5-12 Majors	1
<b>Hours</b>		<b>18</b>
<b>Third Year</b>		
<b>Fall</b>		
EDUC 355	Pedagogy in Grades 9-12 (fall only)	4
CHEM 305	Integrated Laboratory	4
CHEM 318	Microscopic Chemical Analysis	4
CHEM 315	Advanced Reactions (Reactivity 3)	4
Select 2 credit in depth CHEM		2
<b>Hours</b>		<b>18</b>
<b>Spring</b>		
THEO Integrations		4
INTG REQ		4
CHEM Elective (2nd of 2 electives)		4
EDUC 390	Ethics in Human Relations	4
CHEM 304	Analytical Method Development and Validation Laboratory	1
CHEM 306	Advanced Laboratory Topics	1
<b>Hours</b>		<b>18</b>
<b>Fourth Year</b>		
<b>Fall</b>		
PHYS 106	Physics for the Life Sciences II	4
INTG 300	Learning Integrations	4
CHEM XXX (1 of 2 electives)		4
Select 2 credit in depth CHEM or capstone		2
Select 2 credit in depth CHEM		2
EDUC 359A	Issues in Education K-6 or K-8	1
<b>Hours</b>		<b>17</b>
<b>Spring</b>		
EDUC 36X	Student Teaching	16
<b>Hours</b>		<b>16</b>
<b>Total Hours</b>		<b>138</b>