

CHEMISTRY, BACHELOR OF ARTS

Requirements

Total Course Requirements for the Bachelor's Degree

See the "Requirements for the Bachelor's Degree (<https://catalog.csudh.edu/general-information/baccalaureate-degrees-undergraduate-studies/>)" in the University Catalog for complete details on general degree requirements. A minimum of 40 units, including those required for the major, must be upper division.

Elective Requirements

Completion of elective courses (beyond the requirements listed below) to reach a total of a minimum of 120 units.

General Education Requirements (43 units)

See the "General Education (<https://catalog.csudh.edu/general-education/>)" requirements in the University Catalog or the Class Schedule for the most current information on General Education requirements and course offerings.

Graduation Writing Assessment Requirement (3 Units)

See the "Graduation Writing Assessment Requirement (<https://catalog.csudh.edu/general-information/baccalaureate-degrees-undergraduate-studies/gwar-certifying-courses/>)" section in the University Catalog.

Statutory Requirements: United States History, Constitution and American Ideals (6 Units)

See the "University Graduation Requirements (<https://catalog.csudh.edu/general-information/baccalaureate-degrees-undergraduate-studies/university-graduation-requirements/>)" section in the University Catalog.

Minor Requirements

No minor required.

Major Requirements (60-62 units)

Students must select one of the options listed. The following courses, or their approved transfer equivalents, are required of all candidates for this degree. A grade of "C" or better must be achieved in all courses.

Each B.A. Chemistry major must select one of the options listed below:

Biochemistry Option (62-64 units)

Code	Title	Hours
Lower Division Required Courses		
CHE 110	General Chemistry I	5
CHE 112	General Chemistry II	5
CHE 230	Quantitative Analysis	4
MAT 191	Calculus I	5
MAT 193	Calculus II	5
Select one of the following:		8-10
PHY 130 & PHY 132	General Physics I and General Physics II	
PHY 120 & PHY 122	Elements Of Physics I and Elements Of Physics II	
Upper Division Required Courses		
CHE 310	Organic Chemistry I	4

CHE 311	Organic Chemistry Lab I	1
CHE 312	Organic Chemistry II	3
CHE 313	Organic Chemistry Laboratory II	2
CHE 320	Physical Chemistry I	5
CHE 360	Writing in Chemical Sciences	2
CHE 420	Advanced Applic for Chemistry	2
CHE 450	Biochemistry I	4
CHE 451	Biochemistry I Lab	1
CHE 452	Biochemistry II	4
CHE 453	Biochemistry II Lab	2
Total Hours		62-64

General Chemistry Option (63 units)

Code	Title	Hours
Lower Division Required Courses		
CHE 110	General Chemistry I	5
CHE 112	General Chemistry II	5
CHE 230	Quantitative Analysis	4
MAT 191	Calculus I	5
MAT 193	Calculus II	5
PHY 130	General Physics I	5
PHY 132	General Physics II	5
Upper Division Required Courses		
CHE 310	Organic Chemistry I	4
CHE 311	Organic Chemistry Lab I	1
CHE 312	Organic Chemistry II	3
CHE 313	Organic Chemistry Laboratory II	2
CHE 320	Physical Chemistry I	5
CHE 322	Physical Chemistry II	3
CHE 360	Writing in Chemical Sciences	2
CHE 420	Advanced Applic for Chemistry	2
CHE 431	Adv Integrated Lab I Lec	3
CHE 440	Inorganic Chemistry	4
Total Hours		63

CHE 450 Biochemistry I: Major students may substitute this course for General Education Area E. Please contact the CNBS Student Success Center to request the course substitution.

- General familiarity with the following areas in chemistry: analytical, biochemistry, inorganic, organic and physical.
- Developed formal (abstract) thinking skills as well as concrete thinking skills.
- Learned how to think critically and analyze chemical problems
- The ability to work effectively and safely in a laboratory environment.
- The ability to work in teams as well as independently.
- The ability to communicate effectively, both orally and in writing

General Chemistry Option Roadmaps

4- Degree Roadmap

First Year		Hours
Fall		
GE Area 1A English Composition		3
MAT 191	Calculus I (satisfies GE Area 2)	5
CHE 110	General Chemistry I (satisfies GE Area 5A and 5C)	4

Elective to meet 120 units	2
Hours	14
Spring	
Elective to meet 120 units	3
CHE 112 General Chemistry II	4
MAT 193 Calculus II	5
GE Area 3A or 3B	3
Hours	15
Second Year	
Fall	
GE Area 1B Critical Thinking	3
CHE 230 Quantitative Analysis	4
PHY 130 General Physics I	5
HIS 101 History Of United States	3
Hours	15
Spring	
POL 101 American Institutions	3
GE Area 1C Oral Communication	3
GE Area 3A or 3B	3
GE Area 4A or 4B	3
PHY 132 General Physics II	5
Hours	17
Third Year	
Fall	
CHE 310 Organic Chemistry I	4
CHE 311 Organic Chemistry Lab I	1
CHE 320 Physical Chemistry I	5
GE Area 4A or 4B	3
Elective to meet 120 units	3
Hours	16
Spring	
GE Area 6 Ethnic Studies	3
CHE 312 Organic Chemistry II	3
CHE 313 Organic Chemistry Laboratory II	2
CHE 322 Physical Chemistry II	3
CHE 420 Advanced Applic for Chemistry	2
Elective to meet 120 units	3
Hours	16
Fourth Year	
Fall	
GE Area 5 UD Integrative Studies in the Physical and Biological Sciences	3
CHE 431 Adv Integrated Lab I Lec	3
Elective to meet 120 units	3
Elective to meet 120 units	3
Hours	12
Spring	
CHE 440 Inorganic Chemistry	4
GE Area 4 UD Integrative Studies in the Social and Behavioral Scien	3
CHE 360 Writing in Chemical Sciences (meets GEAR requirement)	3
GE Area 3 UD Integrative Studies in the Arts and Humanities	3
Hours	13
Total Hours	118
First Year	
Fall	Hours
GE Area 3 UD Integrative Studies in the Arts and Humaniti	3
CHE 310 Organic Chemistry I	4
CHE 311 Organic Chemistry Lab I	1
CHE 320 Physical Chemistry I	5
Elective to meet 120 units	3
Hours	16

Spring	
GE Area 5 UD Integrative Studies in the Physical and Biological Sciences	3
CHE 312 Organic Chemistry II	3
CHE 313 Organic Chemistry Laboratory II	2
CHE 322 Physical Chemistry II	3
CHE 420 Advanced Applic for Chemistry	2
Hours	13
Second Year	
Fall	
GE Area 4 UD Integrative Studies in the Social and Behavioral Scien	3
CHE 431 Adv Integrated Lab I Lec	3
Elective to meet 120 units	3
Elective to meet 120 units	3
Elective to meet 120 units	3
Hours	15
Spring	
CHE 440 Inorganic Chemistry	4
Elective to meet 120 units	3
CHE 360 Writing in Chemical Sciences (meets GEAR requirement)	3
Elective to meet 120 units	3
Elective to meet 120 units	3
Hours	16
Total Hours	60

Biochemistry Option Roadmaps

4- Year Roadmap

4- Degree Roadmap

First Year		Hours
Fall		
GE Area 1A Composition		3
MAT 191 Calculus I (satisfies GE Area 2)		5
CHE 110 General Chemistry I (satisfies GE Area 5A and 5C)		4
Elective to meet 120 units		2
Hours		14
Spring		
Elective to meet 120 units		3
CHE 112 General Chemistry II		4
MAT 193 Calculus II		5
GE Area 3A or 3B		3
Hours		15
Second Year		
Fall		
GE Area 1B Critical Thinking		3
CHE 230 Quantitative Analysis		4
PHY 130 General Physics I		5
HIS 101 History Of United States		3
Hours		15
Spring		
POL 101 American Institutions		3
GE Area 1C Oral Communication		3
GE Area 3A or 3B		3
GE Area 4A or 4B		3
PHY 132 General Physics II		5
Hours		17
Third Year		
Fall		
CHE 310 Organic Chemistry I		4
CHE 311 Organic Chemistry Lab I		1
CHE 320 Physical Chemistry I		5

GE Area 4A or 4B	3
Elective to meet 120 units	3
Hours	16
Spring	
GE Area 6 Ethnic Studies	3
CHE 312 Organic Chemistry II	3
CHE 313 Organic Chemistry Laboratory II	2
CHE 322 Physical Chemistry II	3
CHE 420 Advanced Applic for Chemistry	2
Hours	13
Fourth Year	
Fall	
GE Area 5 UD Integrative Studies in the Physical and Biological Sciences	3
CHE 431 Adv Integrated Lab I Lec	3
Elective to meet 120 units	3
Elective to meet 120 units	3
Hours	12
Spring	
CHE 440 Inorganic Chemistry	4
GE Area 4 UD Integrative Studies in the Social and Behavioral	3
CHE 360 Writing in Chemical Sciences (meets GVAR requirement)	3
GE Area 3 UD Integrative Studies in the Arts and Humanities	3
Elective to meet 120 units	3
Hours	16
Total Hours	118

2-Year Roadmap (transfer students)

First Year	
Fall	
GE Area 3 UD Integrative Studies in the Arts and Humanities	3
CHE 310 Organic Chemistry I	4
CHE 311 Organic Chemistry Lab I	1
CHE 320 Physical Chemistry I	5
Elective to meet 120 units	3
Hours	16
Spring	
GE Area 5 UD Integrative Studies in the Physical and Biological Sciences	3
CHE 312 Organic Chemistry II	3
CHE 313 Organic Chemistry Laboratory II	2
CHE 322 Physical Chemistry II	3
CHE 420 Advanced Applic for Chemistry	2
Hours	13
Second Year	
Fall	
GE Area 4 UD Integrative Studies in the Social and Behavioral Scie	3
CHE 431 Adv Integrated Lab I Lec	3
Elective to meet 120 units	3
Elective to meet 120 units	3
Elective to meet 120 units	3
Hours	15
Spring	
CHE 440 Inorganic Chemistry	4
Elective to meet 120 units	3
CHE 360 Writing in Chemical Sciences (meets GVAR requirement)	3
Elective to meet 120 units	3
Elective to meet 120 units	3
Hours	16
Total Hours	60