Chemistry Curriculum Guides

The following are curriculum guides for a four-year Chemistry degree program and are subject to change without notice. Students should consult a Chemistry program advisor to ensure that they have the most accurate and up-to-date information available about a particular four-year degree option.

- Students must complete requirements in one of the following areas of emphasis: (http://catalog.uwgb.edu/archive/2024-2025/undergraduate/programs/biology/major/)
  - General Chemistry
  - Biochemistry
  - Food Chemistry
  - ACS Certified Chemistry
  - ACS Certified Environmental Chemistry

General Chemistry

An example: Four year plan for **General Chemistry**
120 credits necessary to graduate.
Plan is a representation and categories of classes can be switched. Check with your advisor.

Course	Title	Credits
Freshman		
Fall		
CHEM 207	Laboratory Safety	1
CHEM 211	Principles of Chemistry I	4
CHEM 213	Principles of Chemistry I Laboratory	1
MATH 202	Calculus and Analytic Geometry I	4
First Year Seminar		3
	Credits	**13**
Spring		
CHEM 212	Principles of Chemistry II	4
CHEM 214	Principles of Chemistry II Laboratory	1
MATH 203	Calculus and Analytic Geometry II	4
General Ed		3
General Ed		3
	Credits	**15**
Sophomore		
Fall		
CHEM 302	Organic Chemistry I	3
CHEM 304	Organic Chemistry Laboratory I	1
PHYSICS 201	Principles of Physics I	4
PHYSICS 203	Introductory Physics Lab I	1
PHYSICS 204	Introductory Physics Lab II	1
General Ed		3
Elective		3
	Credits	**16**
Spring		
CHEM 303	Organic Chemistry II	3
CHEM 305	Organic Chemistry Laboratory II	1
CHEM 311	Analytical Chemistry	4
PHYSICS 202	Principles of Physics II	4
General Ed		3
	Credits	**15**
Junior		
Fall		
CHEM 320	Thermodynamics and Kinetics	3
CHEM 322	Thermodynamics and Kinetics Laboratory	1
General Ed		3
General Ed		3
Elective		3

Elective		3
	Credits	**16**
Spring		
CHEM 321	Structure of Matter	3
CHEM 323	Structure of Matter Laboratory	1
General Ed		3
General Ed		3
Elective		3
Elective		3
	Credits	**16**
Senior		
Fall		
CHEM 413	Instrumental Analysis	4
General Ed		3
Elective		3
Elective		3
Elective		3
	Credits	**16**
Spring		
CHEM 410	Inorganic Chemistry (or other chemistry elective lecture)	3
CHEM 411	Inorganic Chemistry Laboratory (or other chemistry elective laboratory)	1
Elective		3
Elective		3
Elective		3
	Credits	**13**
	Total Credits	**120**

Biochemistry

An example: Four year plan for **Biochemistry**
120 credits necessary to graduate.
Plan is a representation and categories of classes can be switched. Check with your advisor.

Course	Title	Credits
Freshman		
Fall		
CHEM 207	Laboratory Safety	1
CHEM 211	Principles of Chemistry I	4
CHEM 213	Principles of Chemistry I Laboratory	1
MATH 202	Calculus and Analytic Geometry I	4
First Year Seminar		3
	Credits	**13**
Spring		
CHEM 212	Principles of Chemistry II	4
CHEM 214	Principles of Chemistry II Laboratory	1
MATH 203	Calculus and Analytic Geometry II	4
BIOLOGY 201	Principles of Biology: Cellular and Molecular Processes	3
BIOLOGY 202	Principles of Biology Lab: Cellular and Molecular Processes	1
	Credits	**13**
Sophomore		
Fall		
CHEM 302	Organic Chemistry I	3
CHEM 304	Organic Chemistry Laboratory I	1
PHYSICS 201	Principles of Physics I	4
PHYSICS 203	Introductory Physics Lab I	1
MATH 260	Introductory Statistics	4
General Ed		3
	Credits	**16**
Spring		
CHEM 303	Organic Chemistry II	3
CHEM 305	Organic Chemistry Laboratory II	1
PHYSICS 202	Principles of Physics II	4

PHYSICS 204	Introductory Physics Lab II	1
BIOLOGY 303	Genetics	3
General Ed		3
	Credits	**15**
Junior		
Fall		
CHEM 324	Biophysical Chemistry	3
CHEM 325	Biophysical Chemistry Laboratory	1
BIOLOGY 307	Cell Biology (or other biology elective)	3
General Ed		3
General Ed		3
Elective		3
	Credits	**16**
Spring		
CHEM 311	Analytical Chemistry	4
BIOLOGY 407	Molecular Biology	3
BIOLOGY 408	Molecular Biology Laboratory	1
General Ed		3
General Ed		3
Elective		3
	Credits	**17**
Senior		
Fall		
CHEM 413	Instrumental Analysis (or other chemistry elective lecture and lab)	4
General Ed		3
Elective		3
Elective		3
Elective		3
	Credits	**16**
Spring		
CHEM 330	Biochemistry	3
CHEM 331	Biochemistry Laboratory	1
General Ed		3
Elective		3
Elective		3
Elective		3
	Credits	**16**
	Total Credits	**122**

ACS Certified Chemistry

An example: Four year plan for **Chemistry - ACS Certified Chemistry**
120 credits necessary to graduate.
Plan is a representation and categories of classes can be switched. Some upper level courses are only taught once every other year. Check with your advisor for course periodicity.

Course	Title	Credits
Freshman		
Fall		
CHEM 207	Laboratory Safety	1
CHEM 211	Principles of Chemistry I	4
CHEM 213	Principles of Chemistry I Laboratory	1
MATH 202	Calculus and Analytic Geometry I	4
First Year Seminar		3
General Ed		3
	Credits	**16**
Spring		
CHEM 212	Principles of Chemistry II	4
CHEM 214	Principles of Chemistry II Laboratory	1
MATH 203	Calculus and Analytic Geometry II	4
General Ed		3

General Ed		3
	Credits	**15**
Sophomore		
Fall		
CHEM 302	Organic Chemistry I	3
CHEM 304	Organic Chemistry Laboratory I	1
MATH 209	Multivariate Calculus	4
PHYSICS 201	Principles of Physics I	4
PHYSICS 203	Introductory Physics Lab I	1
General Ed		3
	Credits	**16**
Spring		
CHEM 303	Organic Chemistry II	3
CHEM 305	Organic Chemistry Laboratory II	1
CHEM 311	Analytical Chemistry	4
PHYSICS 202	Principles of Physics II	4
PHYSICS 204	Introductory Physics Lab II	1
General Ed		3
	Credits	**16**
Junior		
Fall		
CHEM 320	Thermodynamics and Kinetics	3
CHEM 322	Thermodynamics and Kinetics Laboratory	1
BIOLOGY 201	Principles of Biology: Cellular and Molecular Processes	3
BIOLOGY 202	Principles of Biology Lab: Cellular and Molecular Processes	1
General Ed		3
General Ed		3
	Credits	**14**
Spring		
CHEM 321	Structure of Matter	3
CHEM 323	Structure of Matter Laboratory	1
CHEM 330	Biochemistry	3
CHEM 331	Biochemistry Laboratory	1
General Ed		3
Elective		3
	Credits	**14**
Senior		
Fall		
CHEM 413	Instrumental Analysis	4
CHEM 496	Project/Research Assistantship (can be taken over multiple semesters)	3
Elective		3
Elective		3
Elective		3
	Credits	**16**
Spring		
CHEM 410	Inorganic Chemistry	3
CHEM 411	Inorganic Chemistry Laboratory	1
Elective		3
Elective		3
Elective		3
	Credits	**13**
	Total Credits	**120**

ACS Certified Environmental Chemistry

An example: Four year plan for **Chemistry – ACS Certified Environmental Chemistry**
120 credits necessary to graduate.
Plan is a representation and categories of classes can be switched. Some upper level courses are only taught every other year. Check with your advisor for course periodicity.

Course	Title	Credits
Freshman		
Fall		
CHEM 207	Laboratory Safety	1
CHEM 211	Principles of Chemistry I	4
CHEM 213	Principles of Chemistry I Laboratory	1
MATH 202	Calculus and Analytic Geometry I	4
First Year Seminar		3
	Credits	**13**
Spring		
CHEM 212	Principles of Chemistry II	4
CHEM 214	Principles of Chemistry II Laboratory	1
ENV SCI 102	Introduction to Environmental Sciences	3
MATH 203	Calculus and Analytic Geometry II	4
General Ed		3
	Credits	**15**
Sophomore		
Fall		
CHEM 302	Organic Chemistry I	3
CHEM 304	Organic Chemistry Laboratory I	1
MATH 260	Introductory Statistics	4
PHYSICS 201	Principles of Physics I	4
PHYSICS 203	Introductory Physics Lab I	1
General Ed		3
	Credits	**16**
Spring		
CHEM 303	Organic Chemistry II	3
CHEM 305	Organic Chemistry Laboratory II	1
CHEM 311	Analytical Chemistry	4
PHYSICS 202	Principles of Physics II	4
PHYSICS 204	Introductory Physics Lab II	1
General Ed		3
	Credits	**16**
Junior		
Fall		
CHEM 320	Thermodynamics and Kinetics	3
CHEM 322	Thermodynamics and Kinetics Laboratory	1
BIOLOGY 201	Principles of Biology: Cellular and Molecular Processes	3
BIOLOGY 202	Principles of Biology Lab: Cellular and Molecular Processes	1
General Ed		3
General Ed		3
	Credits	**14**
Spring		
CHEM 321	Structure of Matter	3
CHEM 323	Structure of Matter Laboratory	1
CHEM 330	Biochemistry	3
CHEM 331	Biochemistry Laboratory	1
General Ed		3
General Ed		3
	Credits	**14**
Senior		
Fall		
CHEM 413	Instrumental Analysis	4
GEOSCI 202	Physical Geology	4
CHEM 496	Project/Research Assistantship (can be taken over multiple semesters)	3
BIOLOGY 323	Principles of Microbiology	3
BIOLOGY 324	Principles of Microbiology Laboratory	1
	Credits	**15**
Spring		
CHEM 410	Inorganic Chemistry	3
CHEM 411	Inorganic Chemistry Laboratory	1

ENV SCI 305	Environmental Fate and Transport	4
General Ed		3
Elective		3
Elective		3
	Credits	**17**
	Total Credits	**120**