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: (https://catalog.uwgb.edu/archive/2025-2026/undergraduate/programs/biology/major/)
  - ACS Certified Chemistry
  - Biochemistry
  - Environmental Chemistry
  - Food Chemistry
  - General 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. Some upper-level courses are only taught once every other year. Check with your advisor.

Course	Title	Credits
Freshman		
Fall		
CHEM 207	Laboratory Safety	1
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	5
First Year Seminar		3
General Ed		3
	Credits	**12**
Spring		
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	5
MATH 202	Calculus and Analytic Geometry I	4
General Ed		3
General Ed		3
	Credits	**15**
Sophomore		
Fall		
CHEM 302 & CHEM 304	Organic Chemistry I and Organic Chemistry Laboratory I	4
PHYSICS 103 or PHYSICS 201	Fundamentals of Physics I or Principles of Physics I	4
PHYSICS 203	Introductory Physics Lab I	1
General Ed		3
Elective		3
	Credits	**15**
Spring		
CHEM 303 & CHEM 305	Organic Chemistry II and Organic Chemistry Laboratory II	4
PHYSICS 104 or PHYSICS 202	Fundamentals of Physics II or Principles of Physics II	4
PHYSICS 204	Introductory Physics Lab II	1
General Ed		3
Elective		3
	Credits	**15**
Junior		
Fall		
CHEM 320 & CHEM 322	Thermodynamics and Kinetics and Thermodynamics and Kinetics Laboratory	4
MATH 260 or MATH 203	Introductory Statistics or Calculus and Analytic Geometry II	4
General Ed		3

General Ed		3
Elective		3
	Credits	**17**
Spring		
CHEM 311	Analytical Chemistry	4
CHEM 321 & CHEM 323	Structure of Matter and Structure of Matter Laboratory	4
General Ed		3
Elective		3
Elective		3
	Credits	**17**
Senior		
Fall		
CHEM 413	Instrumental Analysis	4
General Ed		3
Elective		3
Elective		3
Elective		3
	Credits	**16**
Spring		
CHEM 410 & CHEM 411	Inorganic Chemistry and Inorganic Chemistry Laboratory (or other chemistry elective)	4
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. Some upper-level courses are only taught once every other year. Check with your advisor.

Course	Title	Credits
Freshman		
Fall		
CHEM 207	Laboratory Safety	1
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	5
First Year Seminar		3
General Ed		3
Elective		2
	Credits	**14**
Spring		
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	5
MATH 202	Calculus and Analytic Geometry I	4
General Ed		3
General Ed		3
	Credits	**15**
Sophomore		
Fall		
CHEM 302 & CHEM 304	Organic Chemistry I and Organic Chemistry Laboratory I	4
PHYSICS 103 or PHYSICS 201	Fundamentals of Physics I or Principles of Physics I	4
PHYSICS 203	Introductory Physics Lab I	1
General Ed		3
General Ed		3
	Credits	**15**

Spring		
CHEM 303 & CHEM 305	Organic Chemistry II and Organic Chemistry Laboratory II	4
PHYSICS 104 or PHYSICS 202	Fundamentals of Physics II or Principles of Physics II	4
PHYSICS 204	Introductory Physics Lab II	1
General Ed		3
Elective		3
	Credits	**15**
Junior		
Fall		
CHEM 324 & CHEM 325	Biophysical Chemistry and Biophysical Chemistry Laboratory	4
MATH 260	Introductory Statistics	4
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	4
General Ed		3
	Credits	**15**
Spring		
CHEM 311	Analytical Chemistry	4
BIOLOGY 303	Genetics	3
General Ed		3
General Ed		3
Elective		3
	Credits	**16**
Senior		
Fall		
CHEM 330 & CHEM 331	Biochemistry and Biochemistry Laboratory	4
CHEM 413	Instrumental Analysis (or other chemistry elective lecture and lab)	4
Elective		3
Elective		3
Elective		2
	Credits	**16**
Spring		
BIOLOGY 307	Cell Biology ((or other biology elective))	3
BIOLOGY 407 & BIOLOGY 408	Molecular Biology and Molecular Biology Laboratory	4
Elective		4
Elective		3
	Credits	**14**
	Total Credits	**120**

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 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	5
First Year Seminar		3
General Ed		3
	Credits	**12**
Spring		
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	5
MATH 202	Calculus and Analytic Geometry I	4

General Ed		3
General Ed		3
	Credits	**15**
Sophomore		
Fall		
CHEM 302 & CHEM 304	Organic Chemistry I and Organic Chemistry Laboratory I	4
PHYSICS 103 or PHYSICS 201	Fundamentals of Physics I or Principles of Physics I	4
PHYSICS 203	Introductory Physics Lab I	1
General Ed		3
Elective		3
	Credits	**15**
Spring		
CHEM 303 & CHEM 305	Organic Chemistry II and Organic Chemistry Laboratory II	4
CHEM 311	Analytical Chemistry	4
PHYSICS 104 or PHYSICS 202	Fundamentals of Physics II or Principles of Physics II	4
PHYSICS 204	Introductory Physics Lab II	1
General Ed		3
	Credits	**16**
Junior		
Fall		
CHEM 320 & CHEM 322	Thermodynamics and Kinetics and Thermodynamics and Kinetics Laboratory	4
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	4
MATH 260 or MATH 203	Introductory Statistics or Calculus and Analytic Geometry II	4
General Ed		3
Elective		3
	Credits	**18**
Spring		
CHEM 321 & CHEM 323	Structure of Matter and Structure of Matter Laboratory	4
CHEM 330 & CHEM 331	Biochemistry and Biochemistry Laboratory	4
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)	4
General Ed		3
Elective		3
Elective		3
	Credits	**17**
Spring		
CHEM 410 & CHEM 411	Inorganic Chemistry and Inorganic Chemistry Laboratory	4
General Ed		3
Elective		3
Elective		3
	Credits	**13**
	Total Credits	**120**

Environmental Chemistry

An example: Four-year plan for **Chemistry – 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 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	5
First Year Seminar		3
General Ed		3
	Credits	**12**
Spring		
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	5
MATH 202	Calculus and Analytic Geometry I	4
General Ed		3
General Ed		3
	Credits	**15**
Sophomore		
Fall		
CHEM 302 & CHEM 304	Organic Chemistry I and Organic Chemistry Laboratory I	4
PHYSICS 103 or PHYSICS 201	Fundamentals of Physics I or Principles of Physics I	4
PHYSICS 203	Introductory Physics Lab I	1
General Ed		3
Elective		3
	Credits	**15**
Spring		
CHEM 303 & CHEM 305	Organic Chemistry II and Organic Chemistry Laboratory II	4
CHEM 311	Analytical Chemistry	4
PHYSICS 104 or PHYSICS 202	Fundamentals of Physics II or Principles of Physics II	4
PHYSICS 204	Introductory Physics Lab II	1
General Ed		3
	Credits	**16**
Junior		
Fall		
CHEM 324 & CHEM 325	Biophysical Chemistry and Biophysical Chemistry Laboratory	4
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	4
MATH 260 or MATH 203	Introductory Statistics or Calculus and Analytic Geometry II	4
General Ed		3
Elective		3
	Credits	**18**
Spring		
CHEM 410 & CHEM 411	Inorganic Chemistry and Inorganic Chemistry Laboratory (or other chemistry elective)	4
GEOSCI 202	Physical Geology	4
General Ed		3
General Ed		3
Elective		3
	Credits	**17**
Senior		
Fall		
CHEM 413	Instrumental Analysis	4
WATER 444	Aqueous Geochemistry	3
General Ed		3

Elective		4
	Credits	**14**
Spring		
ENV SCI 305	Environmental Fate and Transport	4
Elective		3
Elective		3
Elective		3
	Credits	**13**
	Total Credits	**120**

Food Chemistry

An example: Four-year plan for **Food 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.

Course	Title	Credits
Freshman		
Fall		
CHEM 207	Laboratory Safety	1
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	5
First Year Seminar		3
General Ed		3
General Ed		3
	Credits	**15**
Spring		
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	5
MATH 202	Calculus and Analytic Geometry I	4
General Ed		3
General Ed		3
	Credits	**15**
Sophomore		
Fall		
CHEM 302 & CHEM 304	Organic Chemistry I and Organic Chemistry Laboratory I	4
PHYSICS 103 or PHYSICS 201	Fundamentals of Physics I or Principles of Physics I	4
PHYSICS 203	Introductory Physics Lab I	1
General Ed		3
General Ed		3
	Credits	**15**
Spring		
CHEM 303 & CHEM 305	Organic Chemistry II and Organic Chemistry Laboratory II	4
PHYSICS 104 or PHYSICS 202	Fundamentals of Physics II or Principles of Physics II	4
PHYSICS 204	Introductory Physics Lab II	1
General Ed		3
General Ed		3
	Credits	**15**
Junior		
Fall		
CHEM 324 & CHEM 325	Biophysical Chemistry and Biophysical Chemistry Laboratory	4
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	4
NUT SCI 212	Science of Food Preparation	4
General Ed		3
	Credits	**15**

Spring		
CHEM 311	Analytical Chemistry	4
BIOLOGY 323 & BIOLOGY 324	Principles of Microbiology and Principles of Microbiology Laboratory	4
MATH 260 or MATH 203	Introductory Statistics or Calculus and Analytic Geometry II	4
Elective		3
	Credits	**15**
Senior		
Fall		
CHEM 413	Instrumental Analysis (or other chemistry elective)	4
NUT SCI 300	Human Nutrition	3
Elective		3
Elective		3
Elective		3
	Credits	**16**
Spring		
CHEM 330 & CHEM 331	Biochemistry and Biochemistry Laboratory	4
NUT SCI 312	Quantity Food Production and Service	4
Elective		3
Elective		3
	Credits	**14**
	Total Credits	**120**