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/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	Principles of Chemistry I	5
& CHEM 213	and Principles of Chemistry I Laboratory	
First Year Seminar		3
General Ed		3
	Credits	12
Spring		
CHEM 212	Principles of Chemistry II	5
& CHEM 214	and Principles of Chemistry II Laboratory	
MATH 202	Calculus and Analytic Geometry I	4
General Ed		3
General Ed		3
	Credits	15
Sophomore		
Fall		
CHEM 302	Organic Chemistry I	4
& CHEM 304	and Organic Chemistry Laboratory I	
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	Organic Chemistry II	4
& CHEM 305	and Organic Chemistry Laboratory II	
PHYSICS 104	Fundamentals of Physics II	4
or PHYSICS 202	or Principles of Physics II	
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	Introductory Statistics	4
or MATH 203	or Calculus and Analytic Geometry II	
General Ed		3
General Ed		3

Elective		3
	Credits	17
Spring		
CHEM 311	Analytical Chemistry	4
CHEM 321	Structure of Matter	4
& CHEM 323	and Structure of Matter Laboratory	
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	Inorganic Chemistry	4
& CHEM 411	and Inorganic Chemistry Laboratory ^(or other chemistry elective)	
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.

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

Spring		
CHEM 303	Organic Chemistry II	4
& CHEM 305	and Organic Chemistry Laboratory II	
PHYSICS 104	Fundamentals of Physics II	4
or PHYSICS 202	or Principles of Physics II	
PHYSICS 204	Introductory Physics Lab II	1
General Ed		3
Elective	•	3
	Credits	15
Junior		
Fall		
CHEM 324 & CHEM 325	Biophysical Chemistry	4
MATH 260		4
BIOLOGY 201	Principles of Biology: Cellular and Molecular Processes	4
& BIOLOGY 202	and Principles of Biology Lab: Cellular and Molecular Processes	
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	Biochemistry	4
& CHEM 331	and Biochemistry Laboratory	
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	Molecular Biology	4
& BIOLOGY 408	and Molecular Biology Laboratory	
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	Organic Chemistry I	4
& CHEM 304	and Organic Chemistry Laboratory I	
or PHYSICS 103 or PHYSICS 201	or Principles of Physics I	4
PHYSICS 203	Introductory Physics Lab I	1
General Ed		3
Elective		3
	Credits	15
Spring		
CHEM 303	Organic Chemistry II	4
& CHEM 305	and Organic Chemistry Laboratory II	
CHEM 311	Analytical Chemistry	4
PHYSICS 104	Fundamentals of Physics II	4
or PHYSICS 202	or Principles of Physics II	
PHYSICS 204	Introductory Physics Lab II	1
General Ed		3
	Credits	16
Junior		
Fall		
CHEM 320	Thermodynamics and Kinetics	4
& CHEM 322	and Thermodynamics and Kinetics Laboratory	
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	Structure of Matter	4
& CHEM 323	and Structure of Matter Laboratory	
CHEM 330	Biochemistry	4
& CHEM 331	and Biochemistry Laboratory	
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
Casing	Credits	17
	Increasio Chemistry	
& CHEM 411	and Inorganic Chemistry Laboratory	4
General Ed		3
Flective		3
Elective		3
	Credits	
		420
		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	Principles of Chemistry I	5
& CHEM 213	and Principles of Chemistry I Laboratory	Ŭ
First Year Seminar		3
General Ed		3
	Credits	12
Spring		
CHEM 212	Principles of Chemistry II	5
& CHEM 212	and Principles of Chemistry II Laboratory	5
MATH 202	Calculus and Analytic Geometry I	4
General Ed		3
General Ed		3
	Cradita	15
Sanhomero	Ciedita	15
CHEM 302	Organic Chemistry I	4
		4
or PHYSICS 201	or Principles of Physics I	4
PHYSICS 203		1
General Ed		3
Elective		3
	A 14	
Spring	Credits	15
Spring		
CHEM 303 8. CHEM 305	Organic Chemistry II	4
		4
	Analytical Chemistry	4
or PHYSICS 202	or Principles of Physics II	4
PHYSICS 204	Introductory Physics I ab II	1
Conoral Ed		2
	Cradita	
handen	Ciedits	16
Junior		
Fall		
CHEM 324	Biophysical Chemistry	4
	Principles of Pickerse Orthogenet Malagadae Pressesse	
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes	4
MATH 260		4
or MATH 203	or Calculus and Analytic Geometry II	4
General Ed		3
Elective		3
	Cradita	
Outrie a	Credits	18
Spring		
CHEM 410	Inorganic Chemistry	4
	Physical Coology	4
GEOSCI 202	Physical Geology	4
		3
		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	Principles of Chemistry I	5
& CHEM 213	and Principles of Chemistry I Laboratory	
First Year Seminar		3
General Ed		3
General Ed		3
	Credits	15
Spring		
CHEM 212	Principles of Chemistry II	5
& CHEM 214	and Principles of Chemistry II Laboratory	
MATH 202	Calculus and Analytic Geometry I	4
General Ed		3
General Ed		3
	Credits	15
Sophomore		
Fall		
CHEM 302	Organic Chemistry I	4
& CHEM 304	and Organic Chemistry Laboratory I	
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	Organic Chemistry II	4
& CHEM 305	and Organic Chemistry Laboratory II	
PHYSICS 104	Fundamentals of Physics II	4
or PHYSICS 202	or Principles of Physics II	
PHYSICS 204	Introductory Physics Lab II	1
General Ed		3
General Ed		3
	Credits	15
Junior		
Fall		
CHEM 324	Biophysical Chemistry	4
& CHEM 325	and Biophysical Chemistry Laboratory	
BIOLOGY 201	Principles of Biology: Cellular and Molecular Processes	4
& BIOLOGY 202	and Principles of Biology Lab: Cellular and Molecular Processes	
NUT SCI 212	Science of Food Preparation	4
General Ed		3
	Credits	15

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