Chemistry Major

Major Area of Emphasis

Students must complete requirements in one of the following areas of emphasis:

- · ACS Certified Chemistry
- Biochemistry
- Environmental Chemistry
- Food Chemistry
- General Chemistry

American Chemical Society Certified Chemistry

Code	Title	Credits
Supporting Courses		37
CHEM 207	Laboratory Safety	
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	
CHEM 211 & CHEM 213	Principles of Chemistry I Laboratory	
CHEM 212 & CHEM 214	Principles of Chemistry II Laboratory	
MATH 202	Calculus and Analytic Geometry I	
MATH 260	Introductory Statistics	
or MATH 203	Calculus and Analytic Geometry II	
PHYSICS 103	Fundamentals of Physics I	
or PHYSICS 201	Principles of Physics I	
PHYSICS 203	Introductory Physics Lab I	
PHYSICS 104	Fundamentals of Physics II	
or PHYSICS 202	Principles of Physics II	
PHYSICS 204	Introductory Physics Lab II	
Upper-Level Courses		35
Core Courses		
CHEM 302	Organic Chemistry I	
& CHEM 304	and Organic Chemistry Laboratory I	
CHEM 303	Organic Chemistry II	
& CHEM 305	and Organic Chemistry Laboratory II	
CHEM 311	Analytical Chemistry	
CHEM 320 & CHEM 322	Thermodynamics and Kinetics and Thermodynamics and Kinetics Laboratory	
CHEM 321 & CHEM 323	Structure of Matter and Structure of Matter Laboratory	
CHEM 330 & CHEM 331	Biochemistry and Biochemistry Laboratory	
CHEM 410 & CHEM 411	Inorganic Chemistry and Inorganic Chemistry Laboratory	
CHEM 413	Instrumental Analysis	
CHEM 496	Project/Research Assistantship (3 credits of Research is required)	

Total Credits 72

Biochemistry

Code	Title	Credits
Supporting Courses		33
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	
CHEM 207	Laboratory Safety	
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	
CHEM 212	Principles of Chemistry II	
& CHEM 214	and Principles of Chemistry II Laboratory	
MATH 202	Calculus and Analytic Geometry I	
MATH 260	Introductory Statistics	
PHYSICS 103	Fundamentals of Physics I	
or PHYSICS 201	Principles of Physics I	
PHYSICS 104	Fundamentals of Physics II	
or PHYSICS 202	Principles of Physics II	
PHYSICS 203	Introductory Physics Lab I	
PHYSICS 204	Introductory Physics Lab II	
Upper-Level Courses		27
Core Courses		
BIOLOGY 303	Genetics	
BIOLOGY 407 & BIOLOGY 408	Molecular Biology and Molecular Biology Laboratory	
CHEM 302 & CHEM 304	Organic Chemistry I and Organic Chemistry Laboratory I	
CHEM 303 & CHEM 305	Organic Chemistry II and Organic Chemistry Laboratory II	
CHEM 311	Analytical Chemistry	
CHEM 324 & CHEM 325	Biophysical Chemistry and Biophysical Chemistry Laboratory	
CHEM 330 & CHEM 331	Biochemistry and Biochemistry Laboratory	
CHEM Electives: Choose any 4 cr	edits ¹	4
CHEM 321 & CHEM 323	Structure of Matter and Structure of Matter Laboratory	
CHEM 402 & CHEM 403	Advanced Organic Chemistry and Advanced Organic Chemistry Laboratory	
CHEM 410 & CHEM 411	Inorganic Chemistry and Inorganic Chemistry Laboratory	
CHEM 413	Instrumental Analysis	
CHEM 420 & CHEM 423	Polymer Chemistry and Polymer Chemistry Laboratory	
BIOLOGY or HUMAN BIOLOGY EI	ective: Choose any 3 credits ²	3
BIOLOGY 307	Cell Biology	
BIOLOGY 323	Principles of Microbiology	
HUM BIOL 426	Cancer Biology	
HUM BIOL 444	Endocrinology	
Total Credits		67

¹ CHEM 495, 496, or 497 are encouraged but not counted toward the major requirements

² BIOLOGY 495, 496, or 497 are encouraged but not counted toward the major requirements

American Chemical Society Certified in Environmental Chemistry

Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	48
_aboratory Safety	
Principles of Chemistry I and Principles of Chemistry I Laboratory	
and Principles of Chemistry II Laboratory	
Physical Geology	
Calculus and Analytic Geometry I	
ntroductory Statistics	
Calculus and Analytic Geometry II	
Fundamentals of Physics I	
Principles of Physics I	
Fundamentals of Physics II	
Principles of Physics II	
ntroductory Physics Lab I	
ntroductory Physics Lab II	
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Organic Chemistry I	
and Organic Chemistry Laboratory I	
Organic Chemistry II	
and Organic Chemistry Laboratory II	
Analytical Chemistry	
Biophysical Chemistry and Biophysical Chemistry Laboratory	
nstrumental Analysis	
Environmental Fate and Transport	
Aqueous Geochemistry	
Environmental Microbiology	
Structure of Matter and Structure of Matter Laboratory	
Biochemistry	
and Biochemistry Laboratory	
Advanced Organic Chemistry and Advanced Organic Chemistry Laboratory	
norganic Chemistry	
and Inorganic Chemistry Laboratory	
Polymer Chemistry	
and Polymer Chemistry Laboratory	
Nater and Waste Water Treatment	
Hazardous and Toxic Materials	
Stable Isotopes in the Environment	
ALC CICAL A BALL THE SALAR TRADE A H	Physical Geology Palculus and Analytic Geometry I Particulus and Analytic Geometry II Particulus of Physics I Particulus of Physics I Particulus of Physics II Particulus of Physics II Particulus of Physics II Particulus of Physics II Particulus of Physics Lab II Particulus of Physics Laboratory II Particulus of Physics II Parti

Food Chemistry

Code	Title	Credits
Supporting Courses		37
CHEM 207	Laboratory Safety	

Chemistry Major

Total Credits		72
& CHEM 423	and Polymer Chemistry Laboratory	
CHEM 420	Polymer Chemistry	
CHEM 413	Instrumental Analysis	
& CHEM 411	and Inorganic Chemistry Laboratory	
& CHEM 403 CHEM 410	and Advanced Organic Chemistry Laboratory Inorganic Chemistry	
CHEM 402 & CHEM 403	Advanced Organic Chemistry	
& CHEM 323	and Structure of Matter Laboratory	
CHEM 321	Structure of Matter	
Electives (choose 4 credits):		
NUT SCI 312	Quantity Food Production and Service	
NUT SCI 300	Human Nutrition	
CHEM 330 & CHEM 331	Biochemistry and Biochemistry Laboratory	
CHEM 324 & CHEM 325	Biophysical Chemistry and Biophysical Chemistry Laboratory	
CHEM 311	Analytical Chemistry	
& CHEM 305	and Organic Chemistry Laboratory II	
CHEM 303	and Organic Chemistry Laboratory I Organic Chemistry II	
CHEM 302 & CHEM 304	Organic Chemistry I aboratory I	
BIOLOGY 323 & BIOLOGY 324	Principles of Microbiology and Principles of Microbiology Laboratory	
Upper-Level Courses		35
PHYSICS 204	Introductory Physics Lab II	
PHYSICS 203	Introductory Physics Lab I	
or PHYSICS 202	Principles of Physics II	
PHYSICS 104	Fundamentals of Physics II	
or PHYSICS 201	Principles of Physics I	
PHYSICS 103	Fundamentals of Physics I	
NUT SCI 212	Science of Food Preparation	
or MATH 203	Calculus and Analytic Geometry II	
MATH 260	Introductory Statistics	
MATH 202	Calculus and Analytic Geometry I	
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	
CHEM 211 & CHEM 213	Principles of Chemistry I Laboratory	
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	

General Chemistry

Code Supporting Courses	Title	Credits 29
CHEM 207	Laboratory Safety	
CHEM 211 & CHEM 213	Principles of Chemistry I Laboratory	
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	
MATH 202	Calculus and Analytic Geometry I	
MATH 260	Introductory Statistics	
or MATH 203	Calculus and Analytic Geometry II	
PHYSICS 103	Fundamentals of Physics I	

or PHYSICS 201	Principles of Physics I	
PHYSICS 104	Fundamentals of Physics II	
or PHYSICS 202	Principles of Physics II	
PHYSICS 203	Introductory Physics Lab I	
PHYSICS 204	Introductory Physics Lab II	
Upper-Level Courses		28
Core Courses		
CHEM 302	Organic Chemistry I	
& CHEM 304	and Organic Chemistry Laboratory I	
CHEM 303	Organic Chemistry II	
& CHEM 305	and Organic Chemistry Laboratory II	
CHEM 311	Analytical Chemistry	
CHEM 320	Thermodynamics and Kinetics	
& CHEM 322	and Thermodynamics and Kinetics Laboratory	
CHEM 321	Structure of Matter	
& CHEM 323	and Structure of Matter Laboratory	
CHEM 413	Instrumental Analysis	
Electives (choose 4 credits):		
CHEM 330	Biochemistry	
& CHEM 331	and Biochemistry Laboratory	
CHEM 402	Advanced Organic Chemistry	
& CHEM 403	and Advanced Organic Chemistry Laboratory	
CHEM 410	Inorganic Chemistry	
& CHEM 411	and Inorganic Chemistry Laboratory	
CHEM 420	Polymer Chemistry	
& CHEM 423	and Polymer Chemistry Laboratory	

Total Credits 57