

Chemistry Major

Area of Emphasis

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

- General Chemistry
- American Chemical Society Certified Chemistry
- American Chemical Society Certified Environmental Chemistry
- Biochemistry
- Food Chemistry

General Chemistry

Code	Title	Credits
Supporting Courses		29
CHEM 207	Laboratory Safety	
CHEM 211 & CHEM 213	Principles of Chemistry I and 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 203	Calculus and Analytic Geometry II	
PHYSICS 201	Principles of Physics I	
PHYSICS 203	Introductory Physics Lab I	
PHYSICS 202	Principles of Physics II	
PHYSICS 204	Introductory Physics Lab II	
Upper-Level Courses		28
Core Courses		
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 320 & CHEM 322	Thermodynamics and Kinetics and Thermodynamics and Kinetics Laboratory	
CHEM 321 & CHEM 323	Structure of Matter and Structure of Matter Laboratory	
CHEM 413	Instrumental Analysis	
Electives (choose 4 credits):		
BIOLOGY 407	Molecular Biology	
BIOLOGY 408	Molecular Biology Laboratory	
CHEM 330	Biochemistry	
CHEM 331	Biochemistry Laboratory	
CHEM 402	Advanced Organic Chemistry	
CHEM 403	Advanced Organic Chemistry Laboratory	
CHEM 410	Inorganic Chemistry	
CHEM 411	Inorganic Chemistry Laboratory	
CHEM 417	Nuclear Physics and Radiochemistry	
CHEM 420	Polymer Chemistry	
CHEM 423	Polymer Chemistry Laboratory	
Total Credits		57

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 and 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 203	Calculus and Analytic Geometry II	
MATH 209	Multivariate Calculus	
PHYSICS 201	Principles of Physics I	
PHYSICS 203	Introductory Physics Lab I	
PHYSICS 202	Principles of Physics II	
PHYSICS 204	Introductory Physics Lab II	
Upper-Level Courses		35
Core Courses		
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 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

American Chemical Society Certified in Environmental Chemistry

Code	Title	Credits
Supporting Courses		48
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	
BIOLOGY 323 & BIOLOGY 324	Principles of Microbiology and Principles of Microbiology Laboratory	
CHEM 207	Laboratory Safety	
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	
ENV SCI 102	Introduction to Environmental Sciences	
GEOSCI 202	Physical Geology	
MATH 202	Calculus and Analytic Geometry I	
MATH 203	Calculus and Analytic Geometry II	
MATH 260	Introductory Statistics	

PHYSICS 201	Principles of Physics I
PHYSICS 202	Principles of Physics II
PHYSICS 203	Introductory Physics Lab I
PHYSICS 204	Introductory Physics Lab II
Upper-Level Courses	
39	
Core Courses	
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 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)
ENV SCI 305	Environmental Fate and Transport
Total Credits	
87	

Biochemistry

Code	Title	Credits
Supporting Courses		33
BIOLOGY 201	Principles of Biology: Cellular and Molecular Processes	
BIOLOGY 202	Principles of Biology Lab: Cellular and Molecular Processes	
CHEM 207	Laboratory Safety	
CHEM 211	Principles of Chemistry I	
CHEM 212	Principles of Chemistry II	
CHEM 213	Principles of Chemistry I Laboratory	
CHEM 214	Principles of Chemistry II Laboratory	
MATH 202	Calculus and Analytic Geometry I	
MATH 203	Calculus and Analytic Geometry II	
MATH 260	Introductory Statistics	
PHYSICS 201	Principles of Physics I	
PHYSICS 203	Introductory Physics Lab I	
PHYSICS 202	Principles of Physics II	
PHYSICS 204	Introductory Physics Lab II	
Upper-Level Courses		27
Core Courses		
BIOLOGY 303	Genetics	
BIOLOGY 304	Genetics Laboratory	
BIOLOGY 407	Molecular Biology	
BIOLOGY 408	Molecular Biology Laboratory	
CHEM 302	Organic Chemistry I	
CHEM 303	Organic Chemistry II	
CHEM 304	Organic Chemistry Laboratory I	
CHEM 305	Organic Chemistry Laboratory II	
CHEM 311	Analytical Chemistry	
CHEM 324	Biophysical Chemistry	

CHEM 325	Biophysical Chemistry Laboratory	
CHEM 330	Biochemistry	
CHEM 331	Biochemistry Laboratory	
CHEM Electives: Choose any 4 credits ¹		4
CHEM 413	Instrumental Analysis	
CHEM 402 & CHEM 403	Advanced Organic Chemistry and Advanced Organic Chemistry Laboratory	
CHEM 410 & CHEM 411	Inorganic Chemistry and Inorganic Chemistry Laboratory	
CHEM 420 & CHEM 423	Polymer Chemistry and Polymer Chemistry Laboratory	
BIOLOGY or HUMAN BIOLOGY Elective: 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

Food Chemistry

Code	Title	Credits
Supporting Courses		37
CHEM 207	Laboratory Safety	
BIOLOGY 201	Principles of Biology: Cellular and Molecular Processes	
BIOLOGY 202	Principles of Biology Lab: Cellular and Molecular Processes	
CHEM 211	Principles of Chemistry I	
CHEM 212	Principles of Chemistry II	
CHEM 213	Principles of Chemistry I Laboratory	
CHEM 214	Principles of Chemistry II Laboratory	
MATH 202	Calculus and Analytic Geometry I	
MATH 203	Calculus and Analytic Geometry II	
NUT SCI 212	Science of Food Preparation	
PHYSICS 201	Principles of Physics I	
PHYSICS 202	Principles of Physics II	
PHYSICS 203	Introductory Physics Lab I	
PHYSICS 204	Introductory Physics Lab II	
Upper-Level Courses		35
BIOLOGY 323	Principles of Microbiology	
BIOLOGY 324	Principles of Microbiology Laboratory	
CHEM 302	Organic Chemistry I	
CHEM 303	Organic Chemistry II	
CHEM 304	Organic Chemistry Laboratory I	
CHEM 305	Organic Chemistry Laboratory II	
CHEM 311	Analytical Chemistry	
CHEM 324	Biophysical Chemistry	
CHEM 325	Biophysical Chemistry Laboratory	
CHEM 330	Biochemistry	
CHEM 331	Biochemistry Laboratory	
NUT SCI 300	Human Nutrition	
NUT SCI 312	Quantity Food Production and Service	

Electives (choose 4 credits):

CHEM 402	Advanced Organic Chemistry
CHEM 403	Advanced Organic Chemistry Laboratory
CHEM 410	Inorganic Chemistry
CHEM 411	Inorganic Chemistry Laboratory
CHEM 413	Instrumental Analysis
CHEM 420	Polymer Chemistry
CHEM 423	Polymer Chemistry Laboratory

Total Credits**72**