

Chemistry Major

Area of Emphasis

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

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

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 202 | Principles of Physics 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

| Code | Title | Credits |
|---------------------------|-------------------|-----------|
| Supporting Courses | | 37 |
| CHEM 207 | Laboratory Safety | |

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|------------------------------|--|-----------|
| 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 202 | Principles of Physics 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 | |
| Upper-Level Courses | | 39 |
| Core Courses | | |
| CHEM 302 & CHEM 304 | Organic Chemistry I and Organic Chemistry Laboratory I | |

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|------------------------|---|-----------|
| 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 Systems | |
| Total Credits | | 87 |

Biochemistry

| Code | Title | Credits |
|---|--|-----------|
| Supporting Courses | | 33 |
| 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 | |
| PHYSICS 201 | Principles of Physics I | |
| PHYSICS 202 | Principles of Physics II | |
| Upper-Level Courses | | 27 |
| 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 324 & CHEM 325 | Biophysical Chemistry and Biophysical Chemistry Laboratory | |
| CHEM 330 & CHEM 331 | Biochemistry and Biochemistry Laboratory | |
| BIOLOGY 303 | Genetics | |
| BIOLOGY 407 & BIOLOGY 408 | Molecular Biology and Molecular Biology 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 | |

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| 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