# BIOCHEMISTRY MAJOR

Department: Chemistry and Biochemistry (https://catalog.bradley.edu/undergraduate/liberal-arts-sciences/chemistry-biochemistry/)

This course of study is designed for students wishing to prepare for entrance into a graduate program, a career in biochemistry or a career in allopathic, osteopathic, or veterinary medicine. All students must complete the Chemistry and Biochemistry Common Curriculum Requirements and Major Required Courses

## Chemistry and Biochemistry Common Curriculum Requirements

| Code | Title | Hours |
|---|---|---|
| CHM 110 | General Chemistry I | 3.0 |
| CHM 111 | General Chemistry I Lab | 1.0 |
| CHM 114 | Chemistry of the Elements | 1.0 |
| CHM 116 | General Chemistry II | 3.0 |
| CHM 117 | General Chemistry II Laboratory | 1.0 |
| CHM 252 | Organic Chemistry I | 3.0 |
| CHM 253 | Organic Chemistry Laboratory I | 2.0 |
| CHM 256 | Organic Chemistry II | 3.0 |
| CHM 257 | Organic Chemistry Laboratory II | 1.0 |
| CHM 320 | Quantitative Analysis | 3.0 |
| CHM 321 | Quantitative Analysis Laboratory | 1.0 |
| CHM 360 | Biochemistry | 3.0 |
| CHM 380 | Junior Seminar in Chemistry and Biochemistry | 1.0 |
| CHM 480 | Senior Seminar in Chemistry and Biochemistry | 1.0 |
| BIO 151 | Molecules to Cells | 3.0 |
| **Total Hours** | | **30** |

## Major Required Courses

| Code | Title | Hours |
|---|---|---|
| CHM 361 | Biochemistry Laboratory | 1.0 |
| CHM 470 | Physical Chemistry I | 3.0 |
| or CHM 570 | Physical Chemistry I | |
| BIO 152 | Molecules to Cells Laboratory | 1.0 |
| BIO 310 | Genetics | 3.0 |
| BIO 311 | Genetics laboratory | 1.0 |
| Select one year of college-level physics: | | 8.0 |
| PHY 110 & PHY 201 | University Physics I and University Physics II | |
| PHY 107 & PHY 108 | General Physics I and General Physics II | |
| Select two semesters of calculus: | | 7.0-8.0 |
| MTH 121 & MTH 122 | Calculus I and Calculus II | |
| MTH 115 & MTH 116 | Brief Calculus With Applications I and Brief Calculus With Applications II | |
| Additional Elective Hours | | |
| Select one Biochemistry Elective: | | 3.0 |
| CHM 462/562 | Protein Structure and Function | |
| CHM 466 | Intermediary Metabolism | |
| or CHM 566 | Intermediary Metabolism | |
| Select one of the following options for 5-6 hours of Chemistry Electives: | | 5.0-6.0 |
| Option A | | |
| CHM 420 | Instrumental Analysis | |
| Plus one CHM Lab Elective | | |
| Option B | | |
| CHM 436 | Inorganic Chemistry | |
| Plus two CHM Lab Elective options [1] | | |
| CHM Lab elective options: | | |
| CHM 412 | Molecular Modeling | |
| or CHM 512 | Molecular Modeling | |
| CHM 417 | Experimental Design Laboratory | |
| or CHM 517 | | |
| CHM 471 | Physical Chemistry Laboratory | |
| or CHM 571 | Physical Chemistry Laboratory | |
| CHM 499 | Directed Studies in Chemistry and Biochemistry | |
| Select one Biology Elective: | | 3.0-4.0 |
| BIO 406 | General Microbiology | |
| BIO 464 | Cell Biology | |
| BIO 468 | Immunology of Host Defense | |
| BIO 482 | Endocrinology | |
| BIO 484 | Neurophysiology | |
| **Total Hours** | | **35-38** |

[1] Plus one CHM Lab elective or two CHM Lab elective options, one of which must be CHM 417 Experimental Design Laboratory/CHM 517 or CHM 499 Directed Studies in Chemistry and Biochemistry.

**Total hours required for the BCM major: 65-68.**