**Nebraska Wesleyan University**

# Biochemistry and Molecular Biology (B.S.)

## Catalog

2015-2016

## Program Description

The combination of chemistry-based curriculum with a significant biology research component prepares our students for postgraduate studies in biomedical sciences. While biochemistry focuses on the structure and function of compounds like DNA, enzymes and proteins, molecular biology focuses on how molecules convert information into chemical reactions. Hands-on experimentation is central to the curriculum, which allows students to engage in high-level work that most of their peers do not experience until graduate school.

## Departments

1. Biology
2. Chemistry

### Biochemistry and Molecular Biology Major (B.S., 61 hours)

| Courses | |
|---|---|
| BIO 1400 Introduction to Biological Inquiry | 4 hours |
| BIO 2200 Genetics and Cell Biology | 4 hours |
| BIO 2300 Ecology and Evolution | 4 hours |
| BIO 3800 Molecular Genetics | 3 hours |
| BIO 3850 Molecular Genetics Lab | 1 hour |
| CHEM 1110 Chemical Principles I and<br>CHEM 1110L Chemical Principles I Laboratory | 4 hours |
| CHEM 2100 Organic Chemistry I and<br>CHEM 2100L Organic Chemistry I Laboratory | 4 hours |
| CHEM 2110 Organic Chemistry II: Synthesis and Mechanisms and<br>CHEM 2110L Organic Chemistry II Laboratory | 4 hours |
| CHEM 1120 Chemical Principles II and<br>CHEM 1120L Chemical Principles II Laboratory | 4 hours |
| CHEM 3410 Biochemistry and<br>CHEM 3410L Biochemical Methods | 4 hours |
| CHEM 3510 Physical Chemistry I, Thermodynamics and Kinetics and<br>CHEM 3510L Physical Chemistry Laboratory | 4 hours |
| CHEM 3440 Analytical Chemistry and Instrumental Analysis | 4 hours |
| CHEM 4420 Advanced Biochemistry | 3 hours |
| CHEM 4980 Chemistry Seminar | 1 hour |

| Courses | |
|---|---|
| PHYS 1600 Principles of Physics I or PHYS 2000 General Physics I | 4 hours |
| PHYS 1700 Principles of Physics II or PHYS 2100 General Physics II | 4 hours |
| MATH 1600 Calculus I | 5 hours |
| **Senior Comprehensive** | |
| BIO 4990 Senior Research or CHEM 4950 Independent Study | 1 hour |

MATH 1610 Calculus II is strongly recommended.