Nebraska Wesleyan University

Biochemistry and Molecular Biology (B.S.)

Catalog

2025-2026

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., 61-62 hours)

Requirements	
BIO 1400FYW 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	4 hours
CHEM 1110 Chemical Principles I and CHEM 1110L Chemical Principles I Laboratory	4 hours
CHEM 2100 Organic Chemistry I and CHEM 2100L Organic Chemistry I Laboratory	4 hours
CHEM 2110 Organic Chemistry II: Synthesis and Mechanisms and CHEM 2110L Organic Chemistry II Laboratory	4 hours
CHEM 1120 Chemical Principles II and CHEM 1120L Chemical Principles II Laboratory	4 hours
CHEM 3410 Biochemistry and CHEM 3410L Biochemical Methods	4 hours
CHEM 3510 Physical Chemistry I, Thermodynamics and Kinetics and 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
PHYS 1600 Principles of Physics I or PHYS 2000 General Physics I	4 hours

Requirements	
PHYS 1700 Principles of Physics II or PHYS 2100 General Physics II	4 hours
MATH 1600 Calculus I	5 hours
Capstone	**1-2 hours**
CHEM 4950 Independent Study or CHEM 4800 Advanced Research	1-2 hours

MATH 1610 Calculus II is strongly recommended.