Academics
As a major in biochemistry, you will study the molecules that make up life! Biochemistry explores the study of chemical reactions within a living cell with applications ranging from pharmaceuticals to biofuels. Our faculty use a teaching style that emphasizes core concepts and actively incorporates teamwork, problem solving and project management skills into our lecture and lab courses.

Biochemistry includes preparation in chemistry, biology, physics and calculus. Beyond the core requirements, you will have the opportunity to enroll in elective courses including Research Techniques in Biochemistry, Plant Biochemistry, Computational Biology or Advanced Topics in Biophysical Chemistry.

Opportunities
Career opportunities with the bachelor of science degree include entry-level positions as a research technologist in biomedical, pharmaceutical and agricultural labs. You can combine communication skills with a science background to work in education, business or government agencies. The majority of our students pursue advanced degrees — including health professions, secondary education and the molecular life sciences. These professionals have a profound effect on our society as physicians, dentists, public policy makers, teachers and researchers. Here are examples of recent graduates’ employment:

• Application Scientist / ADVANCED ANALYTICAL TECHNOLOGIES
• Chemical Engineer I / BLACK VEATCH
• Lab Technician I / GENESEEK / NEOGEN CORPORATION
• Lab Technician II / GENESEEK
• Neuromonitoring Technologist / BIOTRONIC NEURONETWORK
• Research Assistant / UNIVERSITY OF NEBRASKA–LINCOLN
• Research Scientist / VAJRA INSTRUMENTS
• Researcher / UNIVERSITY OF NEBRASKA MEDICAL CENTER
• Science Writer / LI-COR BIOSCIENCES
• Scientist I / AEROTEK

Experience
In the College of Arts and Sciences, we know experience is valuable and goes beyond the classroom. We strive to help you connect your academics with research, internships, education abroad, service learning and leadership experiences. Take advantage of opportunities in biochemistry such as:

• Researching alongside faculty in our Redox Biology Center
• Becoming an Associate Management Intern at Cargill
• Studying abroad in Peru with Nebraska’s affiliated GREEN Program for Water Resource Management and Sustainable Practices
• Running for president of the Biochemistry Club
• Volunteer with the People’s City Mission

We are one of only four Big Ten universities accredited by the American Society for Biochemistry and Molecular Biology (ASBMB). Seniors who pass the ASBMB Accreditation exam are recognized by the professional society as earning a certified degree!
# BIOCHEMISTRY

## FIRST SEMESTER
- BIOC 101: Career Opportunities in Biochemistry 1
- CHEM 109: General Chemistry I (ACE 4) 4
- MATH 106: Calculus I (ACE 3) 5
- ACE 1: Written Texts/Research & Knowledge Skills 3
- Language Requirement - 201 Level (CDR E) 3
- **Total Hours 16**

## SECOND SEMESTER
- CHEM 110: General Chemistry II 4
- MATH 107: Calculus II (CDR F) 4
- LIFE 120: Fundamentals of Biology I (CDR B) 3
- LIFE 120L: Fundamentals of Biology Lab (CDR BL) 1
- Language Requirement - 202 Level (CDR E) 3
- **Total Hours 15**

## THIRD SEMESTER
- CHEM 251: Organic Chemistry I 3
- CHEM 253: Organic Chemistry I Lab 1
- LIFE 121: Fundamentals of Biology II 3
- LIFE 121L: Fundamentals of Biology II Lab 1
- ACE 6: Social Sciences 3
- College Distribution Requirement (CDR A): Written Communication 3
- **Total Hours 14**

## FOURTH SEMESTER
- CHEM 252: Organic Chemistry II 3
- CHEM 254: Organic Chemistry II Lab 1
- BIOS 206: General Genetics 4
- BIOS 205: Scientific Analysis and Technical Writing 2
- ACE 2: Communication Skills 3
- CDR D: Social Sciences 3
- **Total Hours 16**

## FIFTH SEMESTER
- BIOC 431: Structure & Metabolism 3
- PHYS 141: Elementary General Physics I 5
- BIOS 312: Microbiology 3
- BIOS 314: Microbiology Lab 1
- ACE 5: Humanities 3
- **Total Hours 15**

## SIXTH SEMESTER
- BIOC 432: Metabolism and Biological Information 3
- PHYS 142: Elementary General Physics II 5
- ACE 9: Global Awareness & Human Diversity 3
- Elective/Minor/Secondary Major/Pre-Professional 3
- Elective/Minor/Secondary Major/Pre-Professional 1
- **Total Hours 15**

## SEVENTH SEMESTER
- CHEM 221: Elementary Quantitative Analysis 4
- BIOC 433: Biochemistry Laboratory 2
- ACE 8: Ethics/Civics/Stewardship 3
- CDR C: Humanities 3
- Elective/Minor/Secondary Major/Pre-Professional 3
- **Total Hours 15**

## EIGHTH SEMESTER
- BIOC 435: Advanced Topics in Biochemistry (ACE 10) 3
- CHEM 471: Physical Chemistry 4
- ACE 7: Fine Arts 3
- Elective/Minor/Secondary Major/Pre-Professional 3
- Elective/Minor/Secondary Major/Pre-Professional 1
- **Total Hours 14**

**DISCLAIMER:** This document represents a sample 4-year plan for degree completion with a major of interest in the College of Arts and Sciences. Actual course selection and sequence may vary and should be discussed individually with an Academic Advisor at the college and department level.