

BIOCHEMISTRY, CELL AND MOLECULAR BIOLOGY BACHELOR OF ARTS

Program Overview

The biochemistry, cell and molecular biology (BCMB) major prepares students for careers at the critically important interface between biology, chemistry and physics, many of which are in high demand.

Our curriculum follows national guidelines from our professional organization, the American Society for Biochemistry and Molecular Biology (<http://www.asbmb.org/>) (ASBMB). It emphasizes the molecular aspects of biology and life science aspects of chemistry. It emphasizes student-centered curricula, early participation in research and broad-based skills development.

B.A. Degree Requirements

The Bachelor of Arts major is intended to meet the needs of students interested in pursuing cross-disciplinary careers that merge a strong science background with a field of its application. These fields include medicine, bioinformatics, forensics, management, marketing, education, public relations, biophysics, biotechnology law and others upon approval of the BCMB Board of Directors.

Code	Title	Hours
Select two of the following:		8
BIO 001 & 001L	BIOLOGICAL SCIENCES FOR NON-MAJORS and BIOLOGY LABORATORY	
BIO 012 & 012L	GENERAL/PRE-PROFESSIONAL BIOLOGY I and GENERAL/PRE-PROFESSIONAL BIOLOGY I LAB	
BIO 013 & 013L	GENERAL/PRE-PROFESSIONAL BIOLOGY II and GENERAL/PRE-PROFESSIONAL BIOLOGY II LAB	
BIO 018 & 018L	INTRODUCTION TO ANATOMY AND PHYSIOLOGY and ANATOMY AND PHYSIOLOGY LAB	
BIO 019 & 019L	INTRODUCTION TO BOTANY and BOTANY LAB	
BIO 105	INTRODUCTION TO GENETICS	3
BIO 165	CELL BIOLOGY	4
BIO 186	MOLECULAR BIOLOGY	3
BIO 187L	APPLIED MOLECULAR BIOLOGY LAB	1-3
CHEM 001	GENERAL CHEMISTRY I	3
CHEM 002	GENERAL CHEMISTRY II	3
CHEM 003	GENERAL CHEMISTRY I LAB	1
CHEM 004	GENERAL CHEMISTRY II LAB	1
CHEM 097	ORGANIC CHEMISTRY I	3
CHEM 098	ORGANIC CHEMISTRY I LAB	1
CHEM 108	ORGANIC CHEMISTRY II	3
CHEM 110	ORGANIC CHEMISTRY II LAB	1
CHEM 130	BIOCHEMISTRY I: FUNDAMENTALS	3
CHEM 131	BIOCHEMISTRY I: FUNDAMENTALS LAB	1
CHEM 132	BIOCHEMISTRY II: METABOLISM	3
CHEM 133	BIOCHEMISTRY II: METABOLISM LAB	1

Select at least one credit of a research equivalent experience from the following: 1-12

BCMB 137	ADVANCED MOLECULAR LS LAB
BCMB 198	BCMB INTERNSHIP
BCMB 199	BCMB RESEARCH

Other research credit can be applied with approval of advisor.

BCMB 195	BCMB SENIOR CAPSTONE SEMINAR	1
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Select one of the following: 3

MATH 050	CALCULUS I
STAT 060	STATISTICS FOR THE LIFE SCIENCES

Career Area

Courses individually developed with Advisor 15

Advanced Electives

Select six credits of Advanced Electives from the following: 6

BIO 104	VIROLOGY
BIO 116	BIOINFORMATICS
BIO 126	DEVELOPMENTAL BIOLOGY
BIO 176	NEUROPHYSIOLOGY
BIO 182	IMMUNOLOGY
BIO 185	HUMAN GENETICS
BIO 188	STRUCTURAL BIOLOGY
BIO 189	REGULATORY BIOLOGY
CHEM 161	BIOPHYSICAL CHEMISTRY
NSCI 126	NEUROCHEMISTRY
PHY 132	MEDICAL BIOPHYSICS

Total Hours 69-82

In addition to programmatic requirements, students are responsible for satisfying all requirements of the Drake Curriculum (<https://catalog.drake.edu/archive/2024-2025/undergraduate/academic-information/drake-curriculum/>), including Areas of Inquiry (AOI)

Student must also satisfy university graduation requirements (<https://catalog.drake.edu/archive/2024-2025/undergraduate/academic-information/graduation-requirements/>) for all undergraduate students..