

BIOCHEMISTRY - B.S.

Program Overview and Description:

The Bachelor of Science (B.S.) – Biochemistry major combines foundational courses in chemistry, biology and physics with advanced biochemistry and biology electives designed to expose students to important fields of study including metabolism, enzymology and structural biology, along with the study of biopolymers such as proteins and nucleic acids. This degree is especially suitable for students interested in medicine and offers an excellent preparation for a graduate education in biochemistry, and for careers in biochemistry and related disciplines.

Prerequisite Courses:

(These courses are prerequisites to required upper-level chemistry courses)

Code	Title	Credits
MTH 245	Calculus I	4
MTH 246	Calculus II	4
or MTH 249	Modeling the Physical World I	
PHY 201	General Physics for the Life Sciences	3
or PHY 213	General Physics for the Physical Sciences I	
or PHY 221	Advanced General Physics I: Modeling the Physical World	
PHY 202	General Physics for the Life Sciences II	3
or PHY 214	General Physics for the Physical Sciences II	
or PHY 222	Advanced General Physics II: Modeling the Physical World	
PHY 205	General Physics Laboratory I	1
or PHY 223	Project Physics Laboratory I	
PHY 206	General Physics Laboratory II	1
or PHY 224	Project Physics Laboratory II	
BIO 201	General Biology: Organismal and Population	3
BIO 205	General Biology: Organismal and Population Laboratory	1
BIO 202	General Biology: Cellular and Molecular	3
BIO 206	General Biology: Cellular and Molecular Laboratory	1

B.S., Biochemistry requirements (35 credits):

Code	Title	Credits
CHM 315	Quantitative and Statistical Analysis ¹	4
CHM 321	Organic Chemistry I	3
CHM 322	Organic Chemistry I Laboratory	1
CHM 323	Organic Chemistry II	3
CHM 324	Organic Chemistry II Laboratory	1
CHM 331	Concepts of Physical Chemistry	3
CHM 382	Biochemistry Laboratory	2
CHM 383	Biochemistry I	3
CHM 384	Biochemistry II	3

CHM 456	Instrumental Analysis	3
CHM 466	Instrumental Analysis Laboratory	2
CHM 499	Chemistry Seminar	1
Select 2 additional courses, one from each list below:		6
Advanced Biochemistry		
CHM 392	Forensic Chemistry	
CHM 521	Advanced Organic Chemistry: Synthetic Organic Methods	
CHM 523	Bioorganic Chemistry	
CHM 525	Organic Spectroscopic Analysis	
CHM 575	Nucleic Acid Biochemistry	
CHM 576	Protein Biochemistry	
CHM 577	Biophysical Chemistry	
Advanced Biology		
BIO 317	Genetics	
BIO 350	Fundamentals of Microbiology	
BIO 362	Cell Structure and Function	
Total Credits		35

¹ Waived for students who have completed CHM 285 Advanced General Chemistry II and CHM 286 Chemical and Statistical Analysis Laboratory