

BIOLOGICAL CHEMISTRY MAJOR

A major in Biological Chemistry must include the cell and molecular biology, chemistry, physics and mathematics courses in the lists under Requirements. At least two elective courses, selected from Requirements list, also must be included. In addition, an appropriate six-credit special project integrating the student's biological and chemical studies is required.

Because of the interdisciplinary nature of the Biological Chemistry major, students in this program may not minor in chemistry, cell and molecular biology, or ecology and evolutionary biology.

Requirements

Course ID	Title	Credits
Cell and Molecular Biology Required Courses		
CELL 1010	Intro to Cell & Molec Biology	3
CELL 2050	Genetics	3
CELL 3030	Molecular Biology	3
CELL 3035	Molecular Biology Lab	1
CELL 3750	Cell Biology	3
CELL 4220	Microbiology	3
Chemistry Required Courses		
CHEM 1070 & CHEM 1075	General Chemistry I and General Chemistry Lab I	4
CHEM 1080 & CHEM 1085	General Chemistry II and General Chemistry Lab II	4
CHEM 3120 & CHEM 3125	Physical Chemistry II and Physical Chemistry Lab II	4
CHEM 3830 & CHEM 3835	Intro To Biochemistry and Intro to Biochem Lab	5
CHEM 3840	Intermediate Biochem	3
Select one of the following:		
CHEM 2410 & CHEM 2415	Organic Chemistry I and Organic Chemistry Lab I	4
CHEM 2430 & CHEM 2435	Organic Chemistry I: Deep-learning and Organic Chemistry I Laboratory: Deep-learning	4
Select one of the following:		
CHEM 2420 & CHEM 2425	Organic Chemistry II and Organic Chemistry Lab II	4
CHEM 2440 & CHEM 2445	Organic Chemistry II: Deep-learning and Organic Chemistry Laboratory II: Deep-learning	4
Physics Required Courses		
PHYS 1310	General Physics I	4
PHYS 1320	General Physics II	4
Mathematics Required Courses		
MATH 1210	Calculus I ¹	4
MATH 1220	Calculus II ¹	4
MATH 2210	Calculus III	4
Electives		
Select at least two of the following:		6
CELL 3050	Foundations of Pharmacology	
CELL 3210	Physiology	
CELL 3310	Cellular Neuroscience	
CELL 3320	Systems Neuroscience	
CELL 3755	Cell Biology Laboratory	
CELL 4130	Embryology	

CELL 4160	Developmental Biology
CELL 4225	Microbiology Laboratory
CELL 4340	Neurobiology of Disease
CELL 4370	Molecular Neurobiology
CELL 4710	Molec Biology of Cancer
CELL 4780	Developmental Genetics
CENG 2500	Intro To Biotechnology
CENG 4710	Biochemical Engineering
CHEM 3110	Physical Chemistry I
CHEM 3310	Instrumental Analysis
MATH 1230	Stats For Scientists
NSCI 6530	Psychopharmacology
PHYS 3210	Molec Biophysics & Polymer Phy

Independent Studies

Select one year (research and/or honors thesis) of the following: 6

BMEN 4890	Service Learning
BMEN 4902	SR Research Prof Experience I
CELL 4910	Independent Study
CELL 4920	Independent Study
CELL 4990	Honors Thesis
CELL 5000	Honors Thesis
CENG 4820	Independent Study
CENG 4910	Independent Study
CENG 4920	Independent Study
CHEM 4010	Research and Seminar
CHEM 4020	Research and Seminar
CHEM 4990	Honors Thesis
CHEM 5000	Honors Thesis

Total Credit Hours
84

¹ MATH 1310 Consolidated Calculus (4 c.h.) Consolidated Calculus may be taken in lieu of MATH 1210 Calculus I (4 c.h.) and MATH 1220 Calculus II (4 c.h.).