

MAJOR IN BIOCHEMISTRY, DATA SCIENCE CONCENTRATION

Requirements Effective Fall 2025

A minimum grade of C (2.000) must be earned for BC 493 and all biochemistry (BC) and LIFE subject code lecture and laboratory courses at or above the 200-level required in the biochemistry major.

Freshman

		AUCC	Credits
BC 192	Biochemistry Freshman Seminar		2
CHEM 111	General Chemistry I (GT-SC2)	3A	4
CHEM 112	General Chemistry Lab I (GT-SC1)	3A	1
CHEM 113	General Chemistry II		3
CHEM 114	General Chemistry Lab II		1
CO 150	College Composition (GT-CO2)	1A	3
LIFE 102	Attributes of Living Systems (GT-SC1)	3A	4
LIFE 201B	Introductory Genetics: Molecular/Immunological/Developmental (GT-SC2)	3A	3
LIFE 203	Introductory Genetics Laboratory		2
Select one course from the following: ¹			4
MATH 155	Calculus for Biological Scientists I (GT-MA1)	1B	
MATH 160	Calculus for Physical Scientists I (GT-MA1)	1B	
Select one course from the following: ¹			4
MATH 161	Calculus for Physical Scientists II (GT-MA1)	1B	
MATH 255	Calculus for Biological Scientists II	1B	

Total Credits **31**

Sophomore

CHEM 341	Modern Organic Chemistry I		3
CHEM 343	Modern Organic Chemistry II		3
CHEM 344	Modern Organic Chemistry Laboratory		2
CS 150B	Culture and Coding: Python (GT-AH3)	3B	3
CS 162	CS1-Introduction to Java Programming		2
DSCI 369	Linear Algebra for Data Science		4
LIFE 210	Introductory Eukaryotic Cell Biology		3
LIFE 212	Introductory Cell Biology Laboratory		2
STAT 158	Introduction to R Programming		1
1C (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#aucc)		1C	3
Arts and Humanities (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		3B	3

Total Credits **29**

Junior

BC 360	Responsible Conduct in Biochemical Research		1
BC 401	Comprehensive Biochemistry I	4A	3
BC 403	Comprehensive Biochemistry II	4B	3
BC 404	Comprehensive Biochemistry Laboratory	4B	2

BZ 360	Bioinformatics and Genomics		4
CS 165	CS2--Data Structures		4
DSCI 235	Data Wrangling		2
STAT 315	Intro to Theory and Practice of Statistics		3
Select one course from the following:			3
CO 300	Writing Arguments (GT-CO3)	2	
CO 301B	Writing in the Disciplines: Sciences (GT-CO3)	2	
CO 302	Writing in Digital Environments (GT-CO3)	2	
JTC 300	Strategic Writing and Communication (GT-CO3)	2	
Select one course from the following:			5
PH 121	General Physics I (GT-SC1)	3A	
PH 141	Physics for Scientists and Engineers I (GT-SC1)	3A	
Total Credits			30
Senior			
BC 411	Physical Biochemistry		4
BC 463	Molecular Genetics		3
BC 465	Molecular Regulation of Cell Function		3
BC 493	Senior Seminar	4A,4C	1
DSCI 335	Inferential Reasoning in Data Analysis		3
STAT 341	Statistical Data Analysis I		3
Select one course from the following:			3
BC 499A	Thesis: Laboratory Research-Based	4C	
BC 499F	Thesis: Literature-Based in Data Science	4C	
Historical Perspectives (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)		3D	3
Social and Behavioral Sciences (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences)		3C	3
Electives ²			4
Total Credits			30
Program Total Credits:			120

¹ MATH 156 and MATH 256 may also be used to satisfy the two-semester calculus requirement.

² Select enough elective credits to bring the program total to a minimum of 120 credits, of which at least 42 must be upper-division (300- to 400-level). Students are encouraged to fulfill their elective credits with research credits, additional Data Science electives, Bioscience electives, PH 122/PH 142, or apply them to a minor.