

MAJOR IN BIOCHEMISTRY, DATA SCIENCE CONCENTRATION

Major Completion Map

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

Semester 1		Critical	Recommended	AUCC	Credits
BC 192	Biochemistry Freshman Seminar				2
CHEM 111	General Chemistry I (GT-SC2)	X		3A	4
CHEM 112	General Chemistry Lab I (GT-SC1)	X		3A	1
LIFE 102	Attributes of Living Systems (GT-SC1)	X		3A	4
MATH 155	Calculus for Biological Scientists I (GT-MA1)	X		1B	4
Total Credits					15
Semester 2		Critical	Recommended	AUCC	Credits
CHEM 113	General Chemistry II	X			3
CHEM 114	General Chemistry Lab II	X			1
CO 150	College Composition (GT-CO2)			1A	3
LIFE 201B	Introductory Genetics: Molecular/Immunological/Developmental (GT-SC2)	X		3A	3
LIFE 203	Introductory Genetics Laboratory	X			2
MATH 255	Calculus for Biological Scientists II	X		1B	4
Total Credits					16

Sophomore

Semester 3		Critical	Recommended	AUCC	Credits
CHEM 341	Modern Organic Chemistry I	X			3
LIFE 210	Introductory Eukaryotic Cell Biology		X		3
LIFE 212	Introductory Cell Biology Laboratory	X			2
AUCC Category 3 courses (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#Foundations-Perspectives)				3B, 3C, 3D	6
Elective					2
Total Credits					16
Semester 4		Critical	Recommended	AUCC	Credits
CHEM 343	Modern Organic Chemistry II	X			3
CHEM 344	Modern Organic Chemistry Laboratory	X			2
CS 152	Python for STEM	X			2
CS 162	CS1–Introduction to Java Programming	X			2
STAT 158	Introduction to R Programming	X			1
Diversity, Equity, and Inclusion (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion)				1C	3
Total Credits					13

Junior

Semester 5		Critical	Recommended	AUCC	Credits
BC 401	Comprehensive Biochemistry I	X		4A	3
BC 404	Comprehensive Biochemistry Laboratory	X		4B	2
BZ 360	Bioinformatics and Genomics	X			4
CS 220	Discrete Structures and their Applications	X			4

STAT 315	Intro to Theory and Practice of Statistics	X			3
Total Credits					16
Semester 6		Critical	Recommended	AUCC	Credits
BC 403	Comprehensive Biochemistry II	X		4B	3
DSCI 235	Data Wrangling	X			2
Select one course from the following:					3
CO 300	Writing Arguments (GT-CO3)		X	2	
CO 301B	Writing in the Disciplines: Sciences (GT-CO3)		X	2	
CO 302	Writing in Digital Environments (GT-CO3)		X	2	
JTC 300	Strategic Writing and Communication (GT-CO3)		X	2	
Select one course from the following:					2-3
BC 406A	Investigative Biochemistry: Protein Biochemistry		X		
BC 475	Mentored Research		X		
BC 487A	Internship		X		
BC 495	Independent Study		X		
BC 496	Group Study		X		
Select one course from the following:					5
PH 121	General Physics I (GT-SC1)	X		3A	
PH 141	Physics for Scientists and Engineers I (GT-SC1)	X		3A	
Total Credits					15-16
Senior					
Semester 7		Critical	Recommended	AUCC	Credits
BC 411	Physical Biochemistry	X			4
BC 463	Molecular Genetics	X			3
BC 493	Senior Seminar	X		4A,4C	1
STAT 341	Statistical Data Analysis I	X			3
AUCC Category 3 courses (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#Foundations-Perspectives)				3B, 3C, 3D	3
Total Credits					14
Semester 8		Critical	Recommended	AUCC	Credits
BC 465	Molecular Regulation of Cell Function	X			3
DSCI 335	Inferential Reasoning in Data Analysis	X			3
Select one course from the following:					3
BC 499A	Thesis: Laboratory Research-Based	X		4C	
BC 499B	Thesis: Literature Based	X		4C	
AUCC Category 3 courses (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#Foundations-Perspectives)				3B, 3C, 3D	3
Electives		X			2-3
The benchmark courses for the 8th semester are the remaining courses in the entire program of study.		X			
Total Credits					14-15
Program Total Credits:					120