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	X			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
Select one course from the following:		X			4
MATH 155	Calculus for Biological Scientists I (GT-MA1)			1B	
MATH 160	Calculus for Physical Scientists I (GT-MA1)			1B	
	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)	X		1A	3
LIFE 201B	Introductory Genetics: Molecular/Immunological/ Developmental (GT-SC2)	X		3A	3
LIFE 203	Introductory Genetics Laboratory	X			2
Select one course from the following:		X			4
MATH 161	Calculus for Physical Scientists II (GT-MA1)			1B	
MATH 255	Calculus for Biological Scientists II	X		1B	
	Total Credits				**16**

Sophomore

Semester 3		Critical	Recommended	AUCC	Credits
CHEM 341	Modern Organic Chemistry I	X			3
CS 150B	Culture and Coding: Python (GT-AH3)	X		3B	3
LIFE 210	Introductory Eukaryotic Cell Biology	X			3
LIFE 212	Introductory Cell Biology Laboratory	X			2
1C (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#aucc)			X	1C	3
	Total Credits				**14**

Semester 4		Critical	Recommended	AUCC	Credits
CHEM 343	Modern Organic Chemistry II	X			3
CHEM 344	Modern Organic Chemistry Laboratory	X			2
CS 162	CS1--Introduction to Java Programming	X			2
DSCI 369	Linear Algebra for Data Science	X			4
STAT 158	Introduction to R Programming	X			1
Arts and Humanities (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)			X	3B	3
	Total Credits				**15**

Junior

Semester 5		Critical	Recommended	AUCC	Credits
BC 360	Responsible Conduct in Biochemical Research	X			1
BC 401	Comprehensive Biochemistry I	X		4A	3
BZ 360	Bioinformatics and Genomics	X			4
CS 165	CS2--Data Structures	X			4
STAT 315	Intro to Theory and Practice of Statistics	X			3
	Total Credits				**15**

Semester 6		Critical	Recommended	AUCC	Credits
BC 403	Comprehensive Biochemistry II	X		4B	3
BC 404	Comprehensive Biochemistry Laboratory	X		4B	2
DSCI 235	Data Wrangling	X			2
Select one course from the following:		X			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:		X			5
PH 121	General Physics I (GT-SC1)			3A	
PH 141	Physics for Scientists and Engineers I (GT-SC1)			3A	
	Total Credits				**15**

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
Historical Perspectives (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)			X	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:		X			3
BC 499A	Thesis: Laboratory Research-Based	X		4C	
BC 499F	Thesis: Literature-Based in Data Science	X		4C	
Social and Behavioral Sciences (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences)		X		3C	3
Electives		X			4
The benchmark courses for the 8th semester are the remaining courses in the entire program of study.		X			
	Total Credits				**16**
	Program Total Credits:				**120**