MAJOR IN BIOCHEMISTRY, HEALTH AND MEDICAL SCIENCES CONCENTRATION

Major Completion Map

Distinctive Requirements for Degree Program:
TO PREPARE FOR FIRST SEMESTER: The curriculum for the Biochemistry major - Health and Medical Sciences concentration assumes students enter college prepared to begin a year-long calculus sequence (either MATH 155/MATH 255 or MATH 160/MATH 161) in the first semester of their first year. LIFE 102 requires high school chemistry as a prerequisite; CHEM 111 requires Algebra II as a prerequisite (this prerequisite is met by having Algebra II by test credit, transfer credit, or placement out of MATH 117 and MATH 118 on Math Placement Exam).

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
Select one course from the following:					4
MATH 155	Calculus for Biological Scientists I (GT-MA1)	X		1B	
MATH 160	Calculus for Physical Scientists I (GT-MA1)	X		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:					4
MATH 161	Calculus for Physical Scientists II (GT-MA1)	X		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
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	3
Elective					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
Select one course from the following:					4
BMS 300	Principles of Human Physiology				
BMS 360	Fundamentals of Physiology				
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	

AUCC Category 3 courses (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#Foundations-Perspectives)				3B, 3C, 3D	3
	Total Credits				**17**
Junior					
Semester 5		**Critical**	**Recommended**	**AUCC**	**Credits**
BC 401	Comprehensive Biochemistry I	X		4A	3
Select one course from the following:			X		5
PH 122	General Physics II (GT-SC1)			3A	
PH 142	Physics for Scientists and Engineers II (GT-SC1)			3A	
Select one course from the following:			X		3
STAT 301	Introduction to Applied Statistical Methods				
STAT 307	Introduction to Biostatistics				
STAT 315	Intro to Theory and Practice of Statistics				
Advanced Writing (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing)				2	3
Diversity, Equity, and Inclusion (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion)				1C	3
	Total Credits				**17**
Semester 6		**Critical**	**Recommended**	**AUCC**	**Credits**
BC 360	Responsible Conduct in Biochemical Research		X		1
BC 403	Comprehensive Biochemistry II	X		4B	3
Select a minimum of 2-credits from the following:			X		2-3
BC 406A	Investigative Biochemistry: Protein Biochemistry				
BC 475	Mentored Research				
BC 487A	Internship				
BC 495	Independent Study				
BC 496	Group Study				
Select one course from the following:			X		4-5
BMS 301	Human Gross Anatomy				
BMS 305	Domestic Animal Gross Anatomy				
Elective					2-4
PH 122 or PH 142 must be completed by the end of Semester 6.		X			
	Total Credits				**14**
Senior					
Semester 7		**Critical**	**Recommended**	**AUCC**	**Credits**
BC 404	Comprehensive Biochemistry Laboratory		X	4B	2
BC 411	Physical Biochemistry	X			4
BC 463	Molecular Genetics	X			3
BC 493	Senior Seminar	X		4A,4C	1
AUCC Category 3 courses (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#Foundations-Perspectives)		X		3B, 3C, 3D	3
	Total Credits				**13**
Semester 8		**Critical**	**Recommended**	**AUCC**	**Credits**
BC 465	Molecular Regulation of Cell Function	X			3
BC 467	Biochemistry of Disease	X			3
Select one course from the following:		X			3
BC 499A	Thesis: Laboratory Research-Based			4C	
BC 499C	Thesis: Literature-based in Health and Med Sci			4C	
AUCC Category 3 courses (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#Foundations-Perspectives)		X		3B, 3C, 3D	3
Elective		X			2

The benchmark courses for the 8th semester are the remaining courses in the entire program of study.	X	
Total Credits		**14**
Program Total Credits:		**120**