MAJOR IN BIOMEDICAL SCIENCES, MICROBIOLOGY AND INFECTIOUS DISEASE CONCENTRATION

Major Completion Map

Distinctive Requirements for Degree Program:

To Declare Major: competitive entry controls required and capped enrollment in place. Please contact Director of Student Success in the CVMBS Student Success Center for more information.

To prepare for first semester: The curriculum for the microbiology and infectious disease concentration assumes students enter college prepared to take MATH 124. Entering students who are not prepared to take MATH 124 will need to prerequisite requirements in the first semester. Those requirements are listed as benchmark courses in Freshman Semester 1 below. 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).

Freshman

Semester 1		**Critical**	**Recommended**	**AUCC**	**Credits**
CHEM 111	General Chemistry I (GT-SC2)	X		3A	4
CHEM 112	General Chemistry Lab I (GT-SC1)	X		3A	1
CO 150	College Composition (GT-CO2)			1A	3
LIFE 102	Attributes of Living Systems (GT-SC1)	X		3A	4
VMBS 100	Introduction to Biomedical Sciences Major				2
Select 0-1 credits from the following:					0-1
MATH 118	College Algebra in Context II (GT-MA1)			1B	
MATH 124	Logarithmic and Exponential Functions (GT-MA1)		X	1B	
MATH 125	Numerical Trigonometry (GT-MA1)			1B	
MATH 126	Analytic Trigonometry (GT-MA1)			1B	
MATH 124 must be completed by the end of Semester 1, if necessary.		X			
	Total Credits				**14-15**

Semester 2		**Critical**	**Recommended**	**AUCC**	**Credits**
CHEM 113	General Chemistry II	X			3
CHEM 114	General Chemistry Lab II	X			1
MIP 250	Eukaryotic Microbiology				3
MIP 260	The World of Parasites	X			3
Select 2-4 credits from the following:					2-4
MATH 124	Logarithmic and Exponential Functions (GT-MA1)			1B	
MATH 125	Numerical Trigonometry (GT-MA1)			1B	
MATH 126	Analytic Trigonometry (GT-MA1)			1B	
MATH 155	Calculus for Biological Scientists I (GT-MA1)			1B	
MATH 160	Calculus for Physical Scientists I (GT-MA1)			1B	
Elective					3
CO 150 must be completed by the end of semester 2.		X			
3-4 credits of MATH must be completed by the end of semester 2.		X			
MATH 125 must be completed by the end of semester 2.		X			
	Total Credits				**15-17**

Sophomore

Semester 3		**Critical**	**Recommended**	**AUCC**	**Credits**
MIP 300	General Microbiology	X			3
MIP 302	General Microbiology Laboratory	X			2
Select one group from the following:					3-5
Group A: (5 credits)					
CHEM 245	Fundamentals of Organic Chemistry	X			
CHEM 246	Fundamentals of Organic Chemistry Laboratory	X			
Group B: (3 credits)					

CHEM 341	Modern Organic Chemistry I				
Social and Behavioral Sciences (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences)				3C	3
Elective					3
	Total Credits				**14-16**
Semester 4		**Critical**	**Recommended**	**AUCC**	**Credits**
BC 351	Principles of Biochemistry		X		4
MIP 342	Immunology	X			4
Select the same Group (A or B) as selected Semester 3:					3-5
Group A: (3 credits)					
Concentration Elective (See list on Requirements Tab)					
Group B: (5 credits)					
CHEM 343	Modern Organic Chemistry II				
CHEM 344	Modern Organic Chemistry Laboratory				
Historical Perspectives (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)				3D	3
	Total Credits				**14-16**
Junior					
Semester 5		**Critical**	**Recommended**	**AUCC**	**Credits**
Select MIP 450 Semester 5 if MIP 443 will not be taken Semester 6:					0-3
MIP 450	Microbial Genetics				
Select one course from the following:					5
PH 121	General Physics I (GT-SC1)	X	X	3A	
PH 141	Physics for Scientists and Engineers I (GT-SC1)	X		3A	
Concentration Electives (See list on Requirements Tab)					5
Diversity, Equity, and Inclusion (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion)		X		1C	3
	Total Credits				**13-16**
Semester 6		**Critical**	**Recommended**	**AUCC**	**Credits**
Select MIP 443 Semester 6 if MIP 450 was not taken Semester 5:					0-4
MIP 443	Microbial Physiology				
Select one course from the following:					4
BMS 300	Principles of Human Physiology				
BMS 360	Fundamentals of Physiology				
Concentration Electives (See list on Requirements Tab)					3
Advanced Writing (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing)				2	3
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)				3B	3
Select MIP 450 (Fall) or MIP 443 (Spring) by end of semester 6.		X			
	Total Credits				**13-17**
Senior					
Semester 7		**Critical**	**Recommended**	**AUCC**	**Credits**
MIP 420	Medical and Molecular Virology	X		4A	4
Select one AUCC 4C course from the following:		X		4C	2-3
MIP 400A	Capstone in Microbiology: Medical Microbiology			4C	
MIP 400B	Capstone in Microbiology: Biotechnology			4C	
MIP 400C	Capstone in Microbiology: Immunology			4C	
MIP 400D	Capstone in Microbiology: Microbial Diversity/Ecology			4C	
MIP 400E	Capstone in Microbiology: Microbial Genetics			4C	
MIP 400F	Capstone in Microbiology: Virology			4C	
MIP 400G	Capstone in Microbiology: Service Learning			4C	
MIP 400H	Capstone in Microbiology: Prion Biology			4C	

MIP 400I	Capstone in Microbiology: Mycobacterial Biology			4C	
MIP 400J	Capstone in Microbiology: Big Data Sets in Microbiology			4C	
MIP 400K	Capstone in Microbiology: Parasitology			4C	
MIP 400L	Capstone in Microbiology: Microbiome Biology			4C	
MIP 400M	Capstone in Microbiology: Vector Biology			4C	
MIP 400N	Capstone in Microbiology: Environmental Sustainability Health Science			4C	
MIP 400O	Capstone in Microbiology: Pathology of Infectious Disease			4C	
MIP 400P	Capstone in Microbiology: Veterinary Microbiology			4C	
MIP 400Q	Capstone in Microbiology: One Health			4C	
MIP 400R	Capstone in Microbiology: Food Microbiology			4C	
MIP 400S	Capstone in Microbiology: Biofilm Biology			4C	
MIP 498	Research			4C	
Select one from the following:					3
STAT 301	Introduction to Applied Statistical Methods				
STAT 307	Introduction to Biostatistics				
Concentration Elective (See list on Requirements Tab)					2
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)				3B	3
	Total Credits				**14-15**
Semester 8		**Critical**	**Recommended**	**AUCC**	**Credits**
MIP 351	Medical Bacteriology	X		4B	3
Concentration Electives (See list on Requirements Tab)		X			5
Electives		X			6-9
The benchmark courses for the 8th semester are the remaining courses in the entire program of study.		X			
	Total Credits				**14-17**
	Program Total Credits:				**120**