

ABOUT Cell & Molecular Biology - Microbiology Option:

Microbiology is the study of microscopic organisms including bacteria, viruses, archaea, fungi, and protists. These are the most successful organisms on the planet and colonize all environments where liquid water exists. Activities of microorganisms drive the biogeochemistry of the earth. Microbes also affect our health and well being from birth in a number of ways including activating and training our immune system and causing or preventing disease. Students choosing to specialize in microbiology within the Cell and Molecular Biology major will become knowledgeable in all aspects of microbiology including microbial physiology, molecular biology and genetics, pathogenics, microbial ecology, immunology, and virology.

Step 1: REVIEW YOUR PROGRAM REQUIREMENTS

Cell & Molecular Biology (CMB) - Microbiology					37-38 Credits
Concentration Courses					(25 Credits)
Course Name	Course #	Semester	Credits	Grade	
Introductory Microbiology	CMB 211		4		
Introductory Biochemistry	CMB 311		3		
Immunology and Serology	CMB 333	Fall _____	3		
General Genetics	CMB (BIO) 352		4		
Advanced Microbiology Lecture I	CMB 413	Fall _____	3		
Advanced Microbiology Laboratory I	CMB 415	Fall _____	2		
Advanced Microbiology Lecture II	CMB 414	Spring _____	3		
Advanced Microbiology Laboratory II	CMB 416	Spring _____	2		
Seminar in Cell and Molecular Biology	CMB 495	Fall _____	1		
Professional Electives					(12-13 Credits)
<i>Select one course (3-4 credits) from the following: CMB 412, 422, 432, 435, 450, or 576</i>					
Course Name	Course #	Semester	Credits	Grade	
<i>Select an additional 9 credits from any CMB courses (including up to 6 credits of research CMB 491, 492); or CMB (BIO) 437, BIO 327 or 341</i>					

Minimum 2.0 cumulative GPA required in major and overall for graduation.

Major GPA = _____

Overall GPA = _____

*Course fulfills general education and a major requirement

Step 1: REVIEW YOUR PROGRAM REQUIREMENTS CONTINUED:

Introduction Requirement (1 credit)			
Course	Semester	Credits	Grade
URI 101		1	

Biology (8 credits)			
Course	Semester	Credits	Grade
*BIO 101		3	
*BIO 103		1	
*BIO 102		3	
*BIO 104		1	

CHEMISTRY Requirement: (15-16 credits)			
Course	Semester	Credits	Grade
*CHM 101		3	
CHM 102		1	
OR			
CHM 191		5	

AND

Course	Semester	Credits	Grade
CHM 112		3	
CHM 114		1	

OR

CHM 192		5	
---------	--	---	--

AND

Course	Semester	Credits	Grade
CHM 227		3	
CHM 228		3	
CHM 226		2	

FREE ELECTIVES			
Course	Semester	Credits	Grade

MATH Requirement: (6-8 credits)			
Course	Semester	Credits	Grade
*MTH 131		3	
OR			
*MTH 141 <i>Preferred</i>		4	
AND 1 OF THE FOLLOWING: MTH *111, 132, *142; *CSC 201; STA 307, or 308			
Course	Semester	Credits	Grade

PHYSICS Requirement: (8 credits)			
Course	Semester	Credits	Grade
*PHY 111		3	
*PHY 185		1	
OR			
*PHY 203 <i>Preferred</i>		3	
*PHY 273 <i>Preferred</i>		1	

AND

Course	Semester	Credits	Grade
*PHY 112		3	
*PHY 186		1	

OR

*PHY 204 <i>Preferred</i>		3	
*PHY 274 <i>Preferred</i>		1	

*Course fulfills general education and a major requirement

B.S. Cell & Molecular Biology -Microbiology Option

Sample 4 Year Plan - Effective Fall 2018

College of the Environment & Life Sciences

Freshman Year *Fall* Semester

Course Code	Description	Cr
URI 101	Planning for Academic Success	1
*BIO 101/103	Principles of Biology I/Lab	4
*MTH ____	Precalculus, Applied Calculus I, or Introductory Calculus	3-4
*CHM 101/102	General Chemistry I/Lab	4
	*General Education	3-4
		15-17

Freshman Year *Spring* Semester

Course Code	Description	Cr
*BIO 102/104	Principles of Biology II/Lab	4
*CHM 112/114	General Chemistry II/Lab	4
	2nd required CSC, MTH, or STA course	3-4
	*General Education	3-4
	*General Education	3-4
		15-17

Year 1 Milestones: Complete **BIO** 101, 103, 102, 104, **CHM** 101, 102, 112, 114, **MTH** 131 or 141. Earn 30 credits with a cumulative GPA of 2.0 or higher.

Sophomore Year *Fall* Semester

Course Code	Description	Cr
CHM 227	Organic Chemistry Lecture I	3
CMB 211	Introductory Microbiology	4
*PHY ____	General Physics I Lecture/Lab	4
	*General Education	3-4
	*General Education	3-4
		15-17

Sophomore Year *Spring* Semester

Course Code	Description	Cr
CHM 228	Organic Chemistry Lecture II	3
CMB 311	Introductory Biochemistry Lecture	3
*PHY ____	General Physics II Lecture/Lab	4
	Professional Elective	3
	*General Education	3-4
		15-17

Year 2 Milestones: Complete **CMB** 211, and 311. Begin Organic Chemistry sequence. Begin Physics sequence. Meet with a CMB Faculty advisor to discuss research opportunities and plan year 3 and 4 courses. Earn 60 total credits with a cumulative GPA of 2.0 or higher.

Junior Year *Fall* Semester

Course Code	Description	Cr
CHM 226	Organic Chemistry Lab	2
CMB 333	Immunology and Serology	3
	Professional Elective	3-4
	Professional Elective	3-4
	*General Education/Free Elective	3-4
		15-17

Junior Year *Spring* Semester

Course Code	Description	Cr
CMB 352	General Genetics	4
	Professional Elective	3-4
	Professional Elective	3-4
	*General Education/Free Elective	3-4
	*General Education/Free Elective	3-4
		15-17

Year 3 Milestones: Complete **CMB** 333, & 352. Complete Organic Chemistry sequence. Meet with a CMB Faculty advisor to plan year 3 and 4 courses. Earn 90 total credits with a cumulative GPA of 2.0 or higher. Prepare intent to graduate with faculty advisor for Fall submission.

Senior Year *Fall* Semester

Course Code	Description	Cr
CMB 495	Seminar in Cell & Molecular Biology	1
CMB 413	Advanced Microbiology Lecture I	3
CMB 414	Advanced Microbiology Laboratory I	2
	*General Education/Free Elective	
	*General Education/Free Elective	
		15-17

Senior Year *Spring* Semester

Course Code	Description	Cr
CMB 415	Advanced Microbiology Lecture II	3
CMB 416	Advanced Microbiology Laboratory II	2
	*General Education/Free Elective	3-4
	*General Education/Free Elective	3-4
	Professional Elective	3-4
		15-17

Year 4 Milestones: Complete **CMB** remaining microbiology concentration courses. Earn total 120 credits with a cumulative GPA of 2.0 or higher. Minimum 2.0 cumulative gpa in CMB concentration courses.