# Cell & Molecular Biology Microbiology Option EL CMBI BS

### THE UNIVERSITY OF RHODE ISLAND

Student:	
Student ID:	
Advisor:	

120 Earned Credits Total

# **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) - Microbiolog	gy		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)
Select one course (3-4 credits) from the follo	wing: CMB 412, 422, 432, 435, 45	50, or 576		
Course Name	Course #	Semester	Credits	Grade
Select an additional 9 credits from any CMB	courses (including up to 6 credits	of research CMB 491,	492); or Cl	MB (BIO)
437, BIO 327 or 341				

Minimum 2.0 cumulative GPA required in
major and overrall for graduation.
Major GPA =

Overall GPA =

Effective: 2018-2019

<sup>\*</sup>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 credit			-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	se Semester Credits Grade			

MATH Requirement:		(6-8 cre	dits)	
Course	Semester	Credits	Grade	
*MTH 131		3		
OR				
*MTH 141		4		
Preferred		4		
<b>AND 1 OF THE FOLLOWING:</b> 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 <b>Preferred</b>		3	
*PHY 273 <b>Preferred</b>		1	

### AND

Course	Semester	Credits	Grade
*PHY 112		3	
*PHY 186		1	
OR			
*PHY 204		3	
Preferred		3	
*PHY 274		1	
Preferred		1	

Effective: 2018-2019

<sup>\*</sup>Course fulfills general education and a major requirement

# Cell & Molecular Biology - B.S. **Microbiology Option**

## THE UNIVERSITY OF RHODE ISLAND

Student:	
Student ID:	
Advisor	

120 Total Earned Credits

### **General Education Guidelines:**

General education is 40 credits. Each of the twelve outcomes (A1-D1) must be met by at least 3 credits. A single course may meet more than one outcome, but cannot be double counted towards the 40 credit total. At least one course must be a Grand Challenge (G). No more than twelve credits can have the same course code. General education courses may also be used to meet requirements of the major or minor when appropriate.

### LIST COURSES THAT MEET GENERAL EDUCATION:

	Constal Education Credit Count					
	General Education Credit Count					
	At least 40 credits, no more than 12 credits					
		with the sar	ne d	course code		
Course	Credits	Grade		Course	Credits	Grade
*BIO 101	3					
*BIO 103	1					
*BIO 102	3					
*BIO 104	1					
*CHM 101	3					
*MTH						
*PHY	3					
*PHY	1					
*PHY	3					
*PHY	1					
				Total Gen		
				Ed Credits		

NOTE: BECAUSE MOST COURSES MEET MORE THAN ONE OUTCOME, YOUR OUTCOME AUDIT MIGHT BE COMPLETED BEFORE YOU REACH YOUR 40 CREDITS. HOWEVER, YOU MUST STILL COMPLETE 40 CREDITS OF GENERAL EDUCATION

General Education Out	come Audit
	Course
KNOWLEDGE	
A1. STEM	BIO 101
<b>A2.</b> Social & Behavioral Sciences	
A3. Humanities	
<b>A4.</b> Arts & Design	
COMPETENCIES	
<b>B1.</b> Write effectively	
<b>B2.</b> Communicate effectively	
<b>B3.</b> Mathematical, statistical, or	
computational strategies	MTH
<b>B4.</b> Information literacy	
RESPONSIBILITIES	
C1. Civic knowledge &	
responsibilities	
C2. Global responsibilities	
C3. Diversity & Inclusion	
INTEGRATE & APPLY	
<b>D1.</b> Ability to synthesize	
GRAND CHALLENGE	
G. At least one source of your 40	
<b>G.</b> At least one course of your 40	
credits is an approved "G" course	

The requirement for transfer to CELS from University College for Academic Success is:  Minimum 30 credits and a minimum cumulative gpa of 2.0 or better.
Advising Notes:

Effective: 2018-2019

<sup>\*</sup>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

### Freshman Year Spring 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

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.

### Sophmore 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

### Sophmore 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.