THE UNIVERSITY OF RHODE ISLAND

Cell & Molecular Biology Microbiology Option EL\_CMBI\_BS 120 Earned Credits Total Student: \_\_\_\_\_ Student ID: \_\_\_\_\_ Advisor: \_\_\_\_\_

## 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) - Microbiolo	gy		37-3	8 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		3	
General Genetics	CMB (BIO) 352		4	
Advanced Microbiology Lecture I	CMB 413		3	
Advanced Microbiology Laboratory I	CMB 415		2	
Advanced Microbiology Lecture II	CMB 414		3	
Advanced Microbiology Laboratory II	CMB 416		2	
Seminar in Cell and Molecular Biology	CMB 495		1	
Professional Electives			(12-13	Credits)
Select one course from the following: CMB	412, 432, 435, 450, 576		(3-4	credits)
Course Name	Course #	Semester	Credits	Grade
Select an additional 9 credits from any any 3	800 level or higher CMB cours	se	(9	Credits)
Course Name	Course #	Semester	Credits	Grade

Minimum 2.0 cumulative GPA required in

major and overrall for graduation.

Major GPA =

Overall GPA =

\*Course fulfills general education and a major requirement

## Step 1: REVIEW YOUR PROGRAM REQUIREMENTS CONTINUED:

Introduction Require	(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:		(16-18 credits)		
Course	Semester	Credits	Grade	
*CHM 101		3		
CHM 102		1		

### OR

CHM 191		5	
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## AND

Course	Semester	Credits	Grade
CHM 112		3	
CHM 114		1	
OR			
CHM 192		5	

## AND

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

FREE ELECTIVES			
Course	Semester	Credits	Grade

\*Course fulfills general education and a major requirement

MATH Requirem		(6-8 credits	
Course	Semester	Credits	Grade
*MTH 131		3	
OR			
* 1 4 4 4			

### \*MTH 141 **Preferred**

Preferred

AND 1 OF THE FOLLOWING: MTH \*111, 132,

\*142; \*CSC 201; STA 307, 308, or 409

Course	Semester	Credits	Grade

4

PHYSICS Requi	(8	credits)	
Course	Semester	Credits	Grade
*PHY 111		3	
*PHY 185		1	
OR			
*PHY 203		2	
Preferred		3	
*PHY 273			
Preferred		1	
AND			
Course	Semester	Credits	Grade
*PHY 112		3	
*PHY 186		1	
OR			
*PHY 204		2	
Preferred		3	
*PHY 274			

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# **THE UNIVERSITY OF RHODE ISL/** Student:

**Microbiology Option** 

120 Total Earned Credits

### **General Education Guidelines:**

Cell & Molecular Biology - B.S.

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:

	General Education Credit Count					
At le	east 40 ci	redits, n	io m	nore than 1	2 credits	
	with	the sar	ne c	ourse code	2	
Course	Credits	Grade		Course	Credits	Grade
				Total	-	
				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

\*course fulfills general education and a major requirement

## LIST COURSE AS EACH OUTCOME IS MET:

General Education Outcome Audit				
	Course	Grade		
KNOWLEDGE				
A1. STEM				
A2. Social & Behavioral Sciences				
A3. Humanities				
A4. Arts & Design				
COMPETENCIES				
B1. Write effectively				
B2. Communicate effectively				
B3. Mathematical, statistical, or				
computational strategies				
<b>B4.</b> Information literacy				
RESPONSIBILITIES				
<b>C1.</b> Civic knowledge &				
responsibilities				
C2. Global responsibilities				
C3. Diversity & Inclusion				
INTEGRATE & APPLY				
<b>D1.</b> Ability to synthesize				
GRAND CHALLENGE				
<b>G. A</b> t 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:** 

Student ID: Advisor:

### **B.S. Cell & Molecular Biology-Microbiology Option** Sample 4 Year Plan - Effective Fall 2022 **College of the Environment & Life Sciences**

Freshman Year Fall Semester Freshman Year Spring Semester Course Code Description Course Code Description Cr URI 101 Planning for Academic Success 1 BIO 102/104 Principles of Biology II/Lab \*BIO 101/103 \*CHM 112/114 General Chemistry II/Lab Principles of Biology I/Lab 4 Precalculus, Applied Calculus I, or \*MTH 3-4 2nd required CSC, MTH, or STA course Introductory Calculus \*CHM 101/102 General Chemistry I/Lab 'General Education 4 General Education 3-4 General Education 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				Sophmore Year Spring Semester	
Course Code	Description	Cr	Course Code	Description	Cr
CHM 227	Organic Chemistry Lecture I	3	CHM 228	Organic Chemistry Lecture II	3
*CMB 211	Introductory Microbiology	4	CMB 311	Introductory Biochemistry Lecture	3
*PHY	General Physics I Lecture/Lab	4	*PHY	General Physics II Lecture/Lab	4
	*General Education	3-4		Professional Elective	3
	*General Education	3-4		*General Education	3-4
		15-17			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			Junior Year Spring Semester		
Course Code	Description	Cr	Course Code	Description	Cr
CHM 226	Organic Chemistry Lab	2	CMB 352	General Genetics	4
CMB 333	Immunology and Serology	3		Professional Elective	3-4
	Professional Elective	3-4		Professional Elective	3-4
	Professional Elective	3-4		*General Education/Free Elective	3-4
	*General Education/Free Elective	3-4		*General Education/Free Elective	3-4
		15-17			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 ( CMB 495 Seminar in Cell & Molecular Biology CMB 413 Advanced Microbiology Lecture I CMB 414 Advanced Microbiology Laboratory I General Education/Free Elective General Education/Free Elective 15

#### Senior Year Spring Semester

Cr

4

4

3-4

3-4

3-4

15-17

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