

**ABOUT Cell & Molecular Biology - General Option:**

The General Cell and Molecular Biology Option is designed to offer students flexibility in pursuing their interests. Students choosing this option need to meet with an advisor early in their academic career to design a personal plan.

**Step 1: REVIEW YOUR PROGRAM REQUIREMENTS**

<b>Cell &amp; Molecular Biology (CMB) -General</b>					<b>40 Credits</b>
<b>Concentration Courses</b>					<b>(15 Credits)</b>
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		
Research in Cell and Molecular Biology	CMB 491 (fall) or 492(spring)		1-6		
Seminar in Cell and Molecular Biology	CMB 495		1		
<b>Biological Sciences (BIO)</b>					<b>(3 Credits)</b>
Course Name	Course #	Semester	Credits	Grade	
Principles of Cell Biology	BIO 341		3		
<b>CMB Laboratory Courses: Select 4 credits from the following list of approved laboratory courses</b>					<b>(4 Credits)</b>
Course Name	Course #	Semester	Credits	Grade	
Introductory Biochemistry Lab	CMB 312	Spring _____	2		
Genetics Laboratory	CMB (BIO) 353		1		
Advanced Biochemistry Lab I	CMB 412	Spring _____	3		
Advanced Microbiology Lab I	CMB 415	Fall _____	2		
Advanced Microbiology Lab II	CMB 416	Spring _____	2		
<b>Professional Electives:</b>					<b>(18 Credits)</b>
<b>Select 18 credits from the following: Any 300 level or higher CMB course, CMB(BIO) 437, 453, BPS 535, and PHY 430</b>					
Course #	Semester	Credits	Grade		

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:**

<b>Introduction Requirement (1 credit)</b>			
Course	Semester	Credits	Grade
URI 101		1	

<b>BIOLOGY (8 credits)</b>			
Course	Semester	Credits	Grade
*BIO 101		3	
*BIO 103		1	
*BIO 102		3	
*BIO 104		1	

<b>CHEMISTRY Requirement: (16-18 credits)</b>			
Course	Semester	Credits	Grade
*CHM 101		3	
CHM 102		1	
<b>OR</b>			
CHM 191		5	
<b>AND</b>			
Course	Semester	Credits	Grade
CHM 112		3	
CHM 114		1	
<b>OR</b>			
CHM 192		5	
<b>AND</b>			
Course	Semester	Credits	Grade
CHM 227		3	
CHM 228		3	
CHM 226		2	

<b>FREE ELECTIVES</b>			
Course	Semester	Credits	Grade

<b>MATH Requirement: (6-8 credits)</b>			
Course	Semester	Credits	Grade
*MTH 131		3	
<b>OR</b>			
*MTH 141 <i>Preferred</i>		4	

**AND 1 OF THE FOLLOWING:** MTH \*111, 132, \*142; \*CSC 201; STA 307, 308, or 409

Course	Semester	Credits	Grade

<b>PHYSICS Requirement: (8 credits)</b>			
Course	Semester	Credits	Grade
*PHY 111		3	
*PHY 185		1	
<b>OR</b>			
*PHY 203 <i>Preferred</i>		3	
*PHY 273 <i>Preferred</i>		1	
<b>AND</b>			
Course	Semester	Credits	Grade
*PHY 112		3	
*PHY 186		1	
<b>OR</b>			
*PHY 204 <i>Preferred</i>		3	
*PHY 274 <i>Preferred</i>		1	

**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:**

General Education Credit Count						
At least 40 credits, no more than 12 credits with the same 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		

**LIST COURSE AS EACH OUTCOME IS MET:**

General Education Outcome Audit	
	Course
<b>KNOWLEDGE</b>	
A1. STEM	BIO 101
A2. Social & Behavioral Sciences	
A3. Humanities	
A4. Arts & Design	
<b>COMPETENCIES</b>	
B1. Write effectively	
B2. Communicate effectively	
B3. Mathematical, statistical, or computational strategies	MTH ____
B4. Information literacy	
<b>RESPONSIBILITIES</b>	
C1. Civic knowledge & responsibilities	
C2. Global responsibilities	
C3. Diversity & Inclusion	
<b>INTEGRATE &amp; APPLY</b>	
D1. Ability to synthesize	CMB 211
<b>GRAND CHALLENGE</b>	
G. At least one course of your 40 credits is an approved "G" course	

**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

**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:** \_\_\_\_\_

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**B.S. Cell & Molecular Biology -General Option**

**Sample 4 Year Plan - Effective Fall 2019**

**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
*CHM 101/102	General Chemistry I/Lab	4
*MTH ____	Precalculus, Applied Calculus I, or Introductory Calculus	3-4
	*General Education	3-4
		<b>15-17</b>

**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
		<b>15-17</b>

**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
		<b>15-17</b>

**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
	*General Education	3-4
	*General Education	3-4
		<b>15-17</b>

**Year 2 Milestones:** Complete **CMB** 211. Begin Organic Chemistry sequence. Begin Physics sequence. Meet with a CMB Faculty advisor to discuss research/internship 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
<i>BIO 341</i>	<i>Cell Biology</i>	3
	*General Education/Free Elective	3-4
	*General Education/Free Elective	3-4
		<b>15-17</b>

**Junior Year *Spring* Semester**

Course Code	Description	Cr
CMB 352	General Genetics	4
CMB	CMB Laboratory course	2-3
	Professional Elective	3-4
	*General Education/Free Elective	3-4
	*General Education/Free Elective	3-4
		<b>15-17</b>

**Year 3 Milestones:** Complete *BIO 341* (*341 is only taught in the Fall semester*) **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	CMB Laboratory Course	2-3
	Professional Elective	3-4
	Professional Elective	3-4
	*General Education/Free Elective	3-4
		<b>15-17</b>

**Senior Year *Spring* Semester**

Course Code	Description	Cr
	Professional Elective	3-4
	Professional Elective	3-4
	*General Education/Free Elective	3-4
	*General Education/Free Elective	3-4
		<b>15-17</b>

**Year 4 Milestones:** Complete **CMB** 495, and at least 1 CMB Lab course. Earn total 120 credits with a cumulative GPA of 2.0 or higher. Minimum 2.0 cumulative gpa in CMB concentration courses.