

### Physical Science, Chemistry, A.S.

Carroll Community College	Year 1	Fall Semester		Spring Semester	
		Course	Credits	Course	Credits
		*CHEM105 - Principles of General Chemistry I	4	*CHEM106 - Principles of General Chemistry II	4
ENGL101 - College Writing	3	ENGL102 - Writing About Literature	3		
*BIOL101 - Fundamentals of Biology I	4	*MATH136 - Calculus of a Single Variable II	4		
*MATH135 - Calculus of a Single Variable I	4	**Elementary Foreign Language I (Arts and Humanities)	3		
<b>Total</b>	<b>15</b>	<b>Total</b>	<b>14</b>		
Carroll Community College	Year 2	Fall Semester		Spring Semester	
		Course	Credits	Course	Credits
		*CHEM201 - Organic Chemistry I	5	*CHEM202 - Organic Chemistry 2	5
*PHYS111 - Physics I for Scientist & Engineers	4	*PHYS212 - Physics 2 for Scientist & Engineers	4		
Social & Behavioral Science	3	Social & Behavioral Science	3		
**Elementary Foreign Language II (Arts and Humanities)	3	Elective	4		
<b>Total</b>	<b>15</b>	<b>Total</b>	<b>16</b>		

**Articulation Notes:**

\* Course can be used to satisfy UMBC major requirements when completed with a "C" or better.

\*\* **Foreign Language Requirement:** The language requirement consists of completion of a foreign language through the 201 level or demonstrated proficiency at that level. The proficiency requirement is met by previous experience as follows: 1) completion of level 4 or higher of a language in high school, or 2) corresponding AP, IB or CLEP credit, or 3) completion of a language through the 201 level at a regionally accredited college or university.

### Biochemistry & Molecular Biology, B.S.

UMBC	Year 3	Fall Semester		Spring Semester	
		Course	Credits	Course	Credits
		CHEM300 - Analytical Chemistry	4	CHEM438 - Comprehensive Biochemistry 2	4
CHEM437 - Comprehensive Biochemistry I	4	CHEM437L - Biochemistry Laboratory	4		
BIOL142 - Foundations of Biology: Ecology & Evolution	4	BIOL302 - Molecular and General Genetics	4		
**Intermediate Foreign Language I	3	Arts and Humanities GEP Requirement	3		
<b>Total</b>	<b>15</b>	<b>Total</b>	<b>15</b>		
UMBC	Year 4	Fall Semester		Spring Semester	
		Course	Credits	Course	Credits
		BIOL303 - Cell Biology	4	CHEM303 - Physical Chemistry for Biochemical Sciences	3
BIOL300L - Experimental Biology Laboratory	2	Elective	3		
Social Science GEP Requirement	3	Elective	3		
Elective	3	Elective	3		
Elective or Research	3	Elective or Research	3		
<b>Total</b>	<b>15</b>	<b>Total</b>	<b>15</b>		

With questions at Carroll Community College, contact Sithy Maharroof at smaharroof@carrollcc.edu or 410-386-8290

With questions at UMBC, contact Paul Smith at pjsmith@umbc.edu at 410-455-2519

Updated: 9/22/2020

Carroll Community College - AS in Physical Science, Chemistry  
 UMBC - Biochemistry and Molecular Biology B.S.  
 Catalog Year: 2019-2020

Carroll Community College			UMBC Equivalency		
CODE	TITLE	Credits	Course	GEP	Credits
*CHEM-105 & *CHEM-106		8	CHEM 101 + CHEM 102 + CHEM 102L	S+SL	8
ENGL-101	College Writing	3	ENGL 100 - Composition	EN	3
*BIOL-101	Fundamentals of Biology 1	4	BIOL 141 - Foundations of Biology I	S	4
*MATH-135	Calculus of a Single Variable 1	4	MATH 151 - Calculus and Analytic Geometry	M	4
ENGL-102	Writing About Literature	3	ENGL 210 - Introduction to Literature	AH	3
*MATH-136	Calculus of a Single Variable 2	4	MATH 152 - Calculus and Analytic Geometry	M	4
**Elementary Foreign Language I (Arts and Humanities)		3	Introductory Foreign Language I	AH	3
*CHEM-201	Organic Chemistry 1	5	CHEM 351 + CHEM 351L	SL	5
*PHYS-111	Physics 1 For Scientists And Engineers	4	PHYS 121 - Introductory Physics I	S	4
Social & Behavioral Science		3		SS	3
**Elementary Foreign Language II (Arts and Humanities)		3	Introductory Foreign Language II	C	3
*CHEM-202	Organic Chemistry 2	5	CHEM 352 + CHEM 352L	SL	5
*PHYS-212	Physics 2 For Scientists And Engineers	4	PHYS 122 - Introductory Physics II	S	4
Elective		4			4
Social & Behavioral Science		3		SS	3
Total Credits at Carroll Community College:		60	Transferrable credits to UMBC (Maximum 60):		60
* Course can be used to satisfy UMBC major requirements when completed with a "C" or better.					
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