



# College of Computer, Mathematical, and Natural Sciences

## Biochemistry (04140) Effective Fall 2023

Name \_\_\_\_\_ UID \_\_\_\_\_ Date \_\_\_\_\_

NOTES

General Education Requirements (27-39 cr.)				
Fundamental Studies				
Requirement	Course	Credits	Grade	Semester
<b>AW</b> Academic Writing		3		
<b>PW</b> Professional Writing		3		
<b>OC</b> Oral Communication		3		
Distributive Studies				
Requirement	Course	Credits	Grade	Semester
<b>HS</b> History and Social Sciences		3		
<b>HS</b> History and Social Sciences		3		
<b>HU</b> Humanities		3		
<b>HU</b> Humanities		3		
<b>SP</b> Scholarship in Practice (non-major)		3		
<b>SP</b> Scholarship in Practice		3		
I-Series (Can overlap with Distributive Studies and/or Diversity)				
Requirement	Course	Credits	Grade	Semester
<b>IS</b> I-Series				
<b>IS</b> I-Series				
Diversity (Can overlap with Distributive Studies and/or I-Series)				
Requirement	Course	Credits	Grade	Semester
<b>UP</b> Understanding Plural Societies				
<b>UP</b> Understanding Plural Societies <b>or CC</b> Cultural Competence				

Mathematics (MA), Analytic Reasoning (AR), Natural Science with lab (NL), and Natural Science (NS)  
Gen Ed categories are satisfied by major requirements.

Lower Level CHEM required for Biochem majors (18 cr.)					Alternate sequence for internal and external transfers (17 cr.)				
Title	Course	Cr	Gr	Sem	Title	Course	Cr	Gr	Sem
Principles of Gen Chem	CHEM 146	3			Fundamentals of Gen Chem	CHEM 131	3		
Intro to Lab Practices	CHEM 177*	2			Gen Chem I Lab	CHEM 132	1		
Organic Chem I	CHEM 237	4			Organic Chem I	CHEM 231	3		
Organic Chem II	CHEM 247	4			Organic Chem I Lab	CHEM 232	1		
Gen Chem and Energetics	CHEM 276	2			Organic Chem II	CHEM 241	3		
Bioanalytical Lab	CHEM 277**	3			Organic Chem II Lab	CHEM 242	1		
					Gen Chem and Energetics	CHEM 271	2		
					Bioanalytical Lab	CHEM 277**	3		

\* All incoming freshmen starting in the Chemistry or Biochemistry major in Fall 2013 or later must take CHEM177. Internal and external transfer students may use CHEM132 to satisfy this requirement.

\*\*Effective Fall 2013: All Chemistry and Biochemistry students must take CHEM277. A substitute course may be used with the approval of the Undergraduate Director of Chemistry and Biochemistry.

Supporting Courses (12-17 cr.)				
Requirement	Course	Cr	Gr	Sem
Molecular and Cellular Biology	BSCI 170	3		
Molecular and Cellular Bio Lab	BSCI 171	1		
Calculus I	MATH 140	4		
Calculus II	MATH 141	4		
Calculus III	MATH 241	4		
Freshman seminar**		1		

\* Effective 23-24 matriculation year, MATH 241 is required  
\*\* All incoming freshman starting as Chemistry or Biochemistry majors must take a freshman seminar: UNIV100, UNIV101, GEMS100, HONR100, HLSC100, HEIP100 or HHUM105

Supporting Courses - Choose one physics sequence (7-8 cr.)									
	Course	Cr	Gr	Sem		Course	Cr	Gr	Sem
Physics I	PHYS 141	4			OR	Physics 1 lecture	PHYS 161	3	
Physics II	PHYS 142	4				Physics 2 lecture	PHYS 260	3	
						Physics 2 lab	PHYS 261	1	

**Required Upper Level CHEM/BCHM Courses (25 cr.)**

<i>Title</i>	<i>Course</i>	<i>Cr</i>	<i>Gr</i>	<i>Sem</i>
Professional Issues in CHEM/BCHM	CHEM 395 (Spring only)	1		
Instrumental Methods	CHEM 425	4		
Physical Chemistry I	CHEM 481	3		
Physical Biochemistry <b>OR</b> Physical Chemistry II	BCHM 485 (Spring only) <b>OR</b> CHEM 482	3		
Physical Chemistry Lab I	CHEM 483	2		
Biochemistry I	BCHM 461	3		
Biochemistry II	BCHM 462	3		
Biochemistry III	BCHM 465	3		
Biochemistry Lab	BCHM 464	3		

**Take at least one of the following BSCI Courses (3-4 cr.)**

<i>Title</i>	<i>Course</i>	<i>Cr</i>	<i>Gr</i>	<i>Sem</i>
Organismal Biology	BSCI 207	3		
Principles of Genetics	BSCI 222	4		
General Microbiology	BSCI 223	4		
Principles of Microbiology	BSCI 283	4		
Cell Biology & Physiology	BSCI 330	4		

**Take at least one of the following Upper Level BSCI Courses (3-4 cr.)**

<i>Title</i>	<i>Course</i>	<i>Cr</i>	<i>Gr</i>	<i>Sem</i>
Principles of Neuroscience	BSCI 353	3		
Molecular Genetics	BSCI 410	3		
Bioinformatics and Integrated Genomics	BSCI 411	4		
Cell Biology Lectures	BSCI 420	3		
Cell Biology	BSCI 421	4		
Principles of Immunology	BSCI 422	3		
Pathogenic Microbiology	BSCI 424	4		
Membrane Biophysics	BSCI 426	3		
Developmental Biology	BSCI 430	3		
Biology of Cancer	BSCI 433	3		
Mammalian Histology	BSCI 434	4		
General Virology	BSCI 437	3		
Mammalian Physiology	BSCI 440	4		
Plant Physiology	BSCI 442	4		
Microbial Physiology	BSCI 443	3		
General Endocrinology	BSCI 447	3		
Molecular Evolution	BSCI 471	3		

**Additional requirements**

A minimum of 120 credits earned and a 2.0 cumulative GPA is needed to meet University graduation requirements.

Major courses require a "C-" or better in each and a 2.0 average GPA.

The Limited Enrollment Program requirements are found at [www.lep.umd.edu](http://www.lep.umd.edu).

**For Certification by the American Chemical Society (not required for Biochemistry major)**

<i>Title</i>	<i>Course</i>	<i>Cr</i>	<i>Gr</i>	<i>Sem</i>
Inorganic Chemistry	CHEM401 (Spring only)	3		