



College of Computer, Mathematical, and Natural Sciences

Biochemistry BS (04140) Effective Spring 2024

Name _____ UID _____ Date _____

General Education Requirements (37-39 cr.)				
Fundamental Studies				
Requirement	Course	Credits	Grade	Semester
FSAW Academic Writing		3		
FSPW Professional Writing		3		
FSOC Oral Communication		3		
Distributive Studies				
Requirement	Course	Credits	Grade	Semester
DSHS History and Social Sciences		3		
DSHS History and Social Sciences		3		
DSHU Humanities		3		
DSHU Humanities		3		
DSSP Scholarship in Practice (non-major)		3		
DSSP Scholarship in Practice		3		
I-Series (Can overlap with Distributive Studies and/or Diversity)				
Requirement	Course	Credits	Grade	Semester
SCIS Big Question/I-Series		3		
SCIS Big Question/I-Series		3		
Diversity (Can overlap with Distributive Studies and/or I-Series)				
Requirement	Course	Credits	Grade	Semester
DVUP Understanding Plural Societies		3		
DVUP Understanding Plural Societies <i>or</i> DVCC Cultural Competence		1-3		

Benchmark 1 (45 credit) Requirements
MATH140 and MATH141
CHEM131 or CHEM146
CHEM132 or CHEM177
(CHEM231 and CHEM232) or CHEM237
Benchmark 2 (75 credit) Requirements
MATH140 and MATH141
BSCI170 and BSCI171
CHEM131 or CHEM146 or CHEM135
CHEM132 or CHEM177
(CHEM231 and CHEM232) or CHEM237
(CHEM241 and CHEM242) or CHEM247
CHEM271 or CHEM276
CHEM272 or CHEM277
PHYS141 or PHYS161

Gen Ed categories Mathematics (FSMA), Analytic Reasoning (FSAR), Natural Science with lab (DSNL), and Natural Science (DSNS) are satisfied by major requirements.

Lower level chemistry required for BCHM 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. Incoming freshmen who take CHEM132 must take an extra UL CHEM elective.
 **Effective Fall 2013: All Chemistry and Biochemistry students must take CHEM277. A student who takes CHEM272 must take an extra UL CHEM elective.

Supporting Courses (17 cr.)				
Requirement	Course	Cr	Gr	Sem
Mol. and Cell Biology	BSCI 170/171	4		
Calculus I	MATH 140	4		
Calculus II	MATH 141	4		
Calculus III	MATH 241	4		
Freshman seminar**		1		

** All incoming freshman starting as CHEM/BCHM majors must take a freshman seminar: UNIV100, UNIV101, GEMS100, HONR100, HLSC100, HEIP100 or ARHU105

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

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 OR Physical Chemistry II	BCHM 485 (Spring only) OR 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		
Plant Physiology	BSCI 442	4		
Microbial Physiology	BSCI 443	3		
General Endocrinology	BSCI 447	3		
Mammalian Systems Physiology	BSCI 450	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.

At least 30 credits must be earned at U.Md.

15 of the final 30 credits must be earned at the 300-400 level.

12 upper level major credits must be earned at U.Md.

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

The Limited Enrollment Program requirements are found at 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		