



College of Computer, Mathematical, and Natural Sciences

Chemistry BS (19050) Effective Fall 2023

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 or DVCC Cultural Competence		1-3		

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

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

Lower level chemistry required for CHEM 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.)					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 (18 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		
Inorganic Chemistry	CHEM 401 (Spring only)	3		
Instrumental Methods	CHEM 425	4		
Physical Chemistry I	CHEM 481	3		
Physical Chemistry Lab I	CHEM 483	2		
Physical Chemistry II	CHEM 482	3		
Physical Chemistry Lab II	CHEM 484	2		

Take at least 6 credits from the following (6 cr.)				
<i>Title</i>	<i>Course</i>	<i>Cr</i>	<i>Gr</i>	<i>Sem</i>
Undergraduate Chemistry Research	CHEM 399	1-3		
Radiochemistry	CHEM 403	3		
Atmospheric Chemistry	CHEM 433	3		
Advanced Organic Chemistry	CHEM 441	3		
Structure Determination with Spectroscopy	CHEM 460	3		
Special Topics	CHEM 498	3		
Biochemistry I or Biochemistry of Physiology	BCHM 461 or BCHM 463	3		
Biochemistry II	BCHM 462	3		
Biochemistry III	BCHM 465	3		
Other CHEM course(s) contingent on approval from the Undergraduate Director	CHEM 4XX			
Note: Certification by the American Chemical Society requires either BCHM461 or BCHM463.				

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.