

Bachelor of Arts - Chemistry Requirements (min. 62 credits)

Name _____ Date of Review _____ Proposed Grad Sem/Yr _____

Chemistry (37 credits)	Pre/Co-Requisites	Credits	Semester Offered	Semester Taken	Grade
CHEM 101- Principles of Chemistry I*	MATH 106, MATH 150, MATH 151, or MATH 155 with a grade of 'C' or better or score of 4 or 5 on the Math Placement Test.	4	FSZ		
CHEM 102 - Principles of Chemistry II*	CHEM 101	4	FSZ		
CHEM 102L - Intro Chemistry Lab I*	CHEM 102 (pre/co)	2	FSZ		
CHEM 300 - Analytical Chemistry	CHEM 102; CHEM 102L	4	FSZ		
CHEM 301- Physical Chemistry I*	CHEM 102; MATH 152; PHYS 122 (pre/co)	4	F		
CHEM 302 - Physical Chemistry II	CHEM 301	3	S		
CHEM 311L - Advanced Laboratory I	CHEM 102L; CHEM 301 (pre/co)	3	F		
CHEM 351 - Organic Chemistry I*	CHEM 102	3	FSZ		
CHEM 351L - Organic Chemistry Lab I*	CHEM 102L; CHEM 351 (pre/co)	2	FSZ		
CHEM 352 - Organic Chemistry II*	CHEM 102; CHEM 351	3	SZ		
CHEM 352L - Organic Chemistry Lab II	CHEM 102L; CHEM 351L; CHEM 352 (pre/co)	2	SZ		
CHEM 405 - Inorganic Chemistry	CHEM 352	3	S		
Mathematics (8 credits)					
MATH 151- Calculus & Analytical Geom I*	MATH 150 with a grade of 'C' or better or score of 5 on the Math Placement Test.	4	FSZ		
MATH 152 - Calculus & Analytic Geom II*	MATH 151	4	FSZ		
Physics (8 credits)					
PHYS 121 - Intro Physics I: Mechanics*	MATH 151 (pre/co)	4	FSZ		
PHYS 122 - Intro Physics II: Electricity and Magnetism*	PHYS 121; MATH 152 (pre/co)	4	FSZ		
Chemistry Electives - See List Below (9 credits)**					

Electives List **:

CHEM 312L - Advanced Laboratory II
 CHEM 401- Chemical & Statistical Thermodynamics
 CHEM 405L - Adv. Inorganic Chemistry Lab
 CHEM 406- Bioinorganic Chemistry
 CHEM 420 - Computer Apps. In Chemistry
 CHEM 431 - Chemistry of Proteins
 CHEM 432 - Advanced Biochemistry
 CHEM 433 - Biochemistry of Nucleic Acids
 CHEM 437- Comprehensive Biochem I
 CHEM 437L - Biochemistry Laboratory
 CHEM 438- Comprehensive Biochem II
 CHEM 443 - Molec. Spectroscopy & Biomacromolecules
 CHEM 444 - Molecular Modeling

CHEM 450 - Chem of Heterocyclic Compounds
 CHEM 451 - Mechanisms of Organic Reactions
 CHEM 452 - Physical Organic Chemistry
 CHEM 453 - Organic Chemistry of Nucleic Acids
 CHEM 455 - Introduction to Biomedical Chem
 CHEM 457 - Total Synthesis of Natural Products
 CHEM 461 - Adv. Instrumental Analysis
 CHEM 465 - Mass Spec at the Chem-Bioc Interface
 CHEM 467 - Advanced Analytical Methods
 CHEM 470 - Toxicological Chemistry
 CHEM 472 - Enzyme Reaction Mechanisms
 CHEM 490 - Special Topics
 CHEM 499 - Undergraduate Research

F = Fall, S = Spring, Z = Summer. Courses marked with a "Z" have been taught in the Summer in recent years; there is no guarantee that they will be offered ever Summer.

* These courses must be completed with a grade of C or better. An overall C average must be maintained in required major courses. If student opts to take Chem 312L or Chem 437L for university writing intensive requirement fulfillment, the course must be passed with a "C" or higher.

** Students should consult with their faculty advisors in choosing electives coursework, and when elective credit within the major is desired for courses not listed. See UMBC course catalog for prerequisites and availability. Upcoming elective offerings can be found on the Department of Chemistry and Biochemistry website here:

<https://chemistry.umbc.edu/next-semester-elective-list/>

Four Year Academic Pathway for CHEMISTRY, Bachelor of Arts (CHEM BA)

Year 1	Fall			Spring		
Benchmark Requirements		Credits	Grade		Credits	Grade
	MATH 151	4		CHEM 102	4	
	CHEM 101	4		CHEM 102L	2	
	ENGL 100/GEP	3		MATH 152	4	
University Requirements – ENGL 100 (or equivalent) and a credit-bearing math course to be completed within the first year of academic study.	GEP	3		ENGL 100/GEP	3	
				GEP	3	
	Total	14	0	Total	16	0
Year 2	Fall			Spring		
Benchmark Requirements		Credits	Grade		Credits	Grade
By the end of the 4th semester (60 credits):	CHEM 351	3		CHEM 352*	3	
	CHEM 351L	2		CHEM 352L*	2	
Have CHEM101, 102, 102L, 300, 351, 351L, 352, and 352L complete; Have MATH151 and 152 complete; Have PHYS121 and 122 complete	CHEM 300	4		PHYS 122	4	
	PHYS 121	4		Foreign Language 201 GEP	4	
	GEP	3		Elective	3	
	Total	16	0	Total	16	0
Year 3	Fall			Spring		
Benchmark Requirements		Credits	Grade		Credits	Grade
By the end of the 6th semester (90 credits):	CHEM 301*	4		CHEM 302*	3	
	CHEM 311L*	3		CHEM UL Elective	3	
Have CHEM301, 311L, and 302 complete	GEP	3		WI Course/Elective	3	
	GEP	3		GEP	3	
	Elective	3				
Major Requirements	Total	16	0	Total	12	0
Year 4	Fall			Spring		
Major Requirements		Credits	Grade		Credits	Grade
	CHEM UL Elective	3		CHEM 405*	3	
	CHEM UL Elective	3		UL Elective/Research	3	
	GEP	3		UL Elective	3	
	UL Elective/Research	3		Elective	3	
	Elective	3		Elective	3	
	Total	15	0	Total	15	0
Total = 120 Academic						

* Not offered both Fall and Spring