

Bachelor of Science in Biological Sciences (BIOL BS) - Minimum Requirements

Column A, Column B, Upper Level Lab and MATH/STAT/CMSC courses are listed on the back

BIOL core (18 credits; 10 upper-level)	Pre-requisites/Co-requisites	credits	grade
BIOL 141 - Foundations of Biology: Cells, Energy and Organisms	MATH 150/equivalent (co-req)	4	
BIOL 142 - Foundations of Biology: Ecology and Evolution	MATH 150/equivalent (co-req)	4	
BIOL 302 - Molecular and General Genetics	BIOL 141 and 142, CHEM 101/123, CHEM 102/124 (co-req)	4	
BIOL 303 - Cell Biology	BIOL 302, CHEM 102	4	
BIOL 300L - Experimental Biology Laboratory	BIOL 302, CHEM 102, CHEM 102L	2	
BIOL Electives (17-24 credits; 14-20 upper-level) ¹			
_____ - Column A elective (listed on back)	See catalog	3-4	
_____ - Column B elective (listed on back)	See catalog	3-4	
_____ - Column A or B elective	See catalog	3-4	
_____ - Column B BIOL 4XX elective ³	See catalog	4	
_____ - Upper Level Laboratory elective	See catalog	2-4	
_____ - Upper Level Laboratory elective	See catalog	2-4	
CHEM, PHYS, MATH, STAT (35 credits; 9 -13 upper-level)			
CHEM 101 - Principles of Chemistry I	MATH 150 recommended	4	
CHEM 102 - Principles of Chemistry II	CHEM 101	4	
CHEM 102L - Introductory Chemistry Lab I	CHEM 101; CHEM 102 (pre/co-req)	2	
CHEM 351 - Organic Chemistry I	CHEM 102	3	
CHEM 351L - Organic Chemistry Lab I	CHEM 102L; CHEM 351 (pre/co-req)	2	
PHYS 111 - Basic Physics I ⁴	None	4	
PHYS 112 - Basic Physics II ⁴	PHYS 111	4	
MATH 151 - Calculus & Analytical Geometry I	MATH 150	4	
STAT 350 - Stats w/Applications in Biological Sciences OR STAT 355 - Intro Prob and Stats for Scientists/Engineers	MATH 150 MATH 152	4	
_____ - MATH/STAT/CMSC elective (listed on back)	See catalog	4	

Column A electives	Column B electives ^{3,5}	Upper Level Laboratories	MATH/STAT/CMSC
BIOL 275 BIOL 304 BIOL 305 BIOL 313 BIOL 430 BIOL 442	All BIOL 4XX courses ³ except BIOL 430, 442, 495, 497H, 499, 499H, 499L and any Lab courses	All BIOL 3XXL Lab courses	MATH 152 MATH 221
	CHEM 352 and CHEM 352L (Must take both) ⁵ CHEM 437 CHEM 438	Two semesters of BIOL 499 and one semester of either BIOL 499L or BIOL 497H	STAT 414 ⁶ STAT 420 ⁶ STAT 454 ⁶
			CMSC 104 CMSC 201
	GES 406 GES 408 GES 413		
	STAT 414 ⁶ STAT 419 ⁶ STAT 420 ⁶ STAT 452 ⁶ STAT 454 ⁶		

Important Notes:

- 1) Students must earn a “C” or better in all courses applied to their major requirements
- 2) At least half of the required BIOL courses and electives must be completed in residence: for the BIOL BS at least six of eleven BIOL classes must be taken at UMBC
- 3) At least one Column B course must be a qualifying BIOL 4XX course. All BIOL 4XX elective classes must be taken in residence at UMBC
- 4) Students may substitute PHYS121 for PHYS111, and PHYS122 for PHYS111, but should note that PHYS121/122 may not satisfy some professional school admission requirements.
- 5) Students can substitute CHEM 352 and CHEM 352L (must take both) for one Column B course
- 6) Students using a STAT class as a Column B course may not use that same course to fulfill the MATH/STAT elective requirement
- 7) Students will receive 33 - 43 Upper Level Credits (3XX/4XX) from BIOL BS courses that may be applied to the University requirement of 45 Upper Level credits for graduation, and 70 - 77 credits that may be applied toward the 120 total credits needed for graduation.
- 8) The Biological Sciences Department evaluates completion of major requirements based on COURSES completed (not CREDITS completed) to accommodate the variability in credits awarded to equivalent courses that have been transferred to UMBC from other institutions.
- 9) Students who are BIOC (Biochemistry and Molecular Biology) majors who wish to also pursue a BIOL BS degree may use Core BIOL courses, CHEM, MATH/STAT and PHYS courses from the BIOC major towards the BIOL BS degree, but MUST take separate electives for the two degrees (i.e., no ‘double-dipping for the electives).
- 10) Under exceptional circumstances, the Department may waive or alter a BIOL degree requirement. Students seeking to petition for a waiver must consult with their academic adviser, then may submit a ‘Petition for Waiver/Substitution of Program Requirements’ form, found here: <http://www.umbc.edu/biosci/undergrad/forms.php>