Name: Campus ID:

Bachelor of Arts in Biology Education (BIOE) Requirements

89-90 credits

	BIOLOGY COURSES	Pre-requisites	Cr.
	BIOL 141 – Foundations of Biology: Cells, Energy, Organisms	MATH 150 or higher, or placement in MATH151	4
	BIOL 142 – Foundations of Biology: Ecology & Evolution	MATH 150 or higher, or placement in MATH151; BIOL 141	4
	BIOL 302 – Molecular & General Genetics	MATH 150 or higher, or placement in MATH151; BIOL 141, BIOL 142, CHEM 101, CHEM 102 (pre- or co-requisite)	4
	BIOL 303 – Cell Biology	MATH 150 or higher or placement in MATH151; BIOL 141, BIOL 142, BIOL 302, and CHEM 102	4
	BIOL 300L – Experimental Biology Laboratory	MATH 150 or higher or placement in MATH151; BIOL 141, BIOL 142, BIOL 302, CHEM 102, CHEM 102L	2
	BIOL 302L - Molecular and General Genetics Lab	BIOL 300L, BIOL 302	2
	BIOL 397 - Ethics and Integrity in Scientific Research	Instructor consent	1
	BIOLOGY ELECTIVES		**Cr.**
	BIOL 3XX – choose BIOL 304, BIOL 305, BIOL 307, or BIOL 375	See catalog	1
	BIOL 4XX - level elective (see note 5)	BIOL 303, consult catalog for other prereqs	4
	CHEMISTRY COURSES		
	CHEM 101 - Principles of Chemistry I	MATH 106 or placement in Math 150,155, or 151	4
	CHEM 102 - Principles of Chemistry II	CHEM 101	4
	CHEM 102L - Introductory Chemistry Laboratory I	CHEM 101, CHEM 102 (pre- or co-requisite)	2
	CHEM 351 - Organic Chemistry I	CHEM 102	3
	OTHER STEM COURSES		
	GES 110 - The Changing Earth: Climate, Ecosystems, Water, and Landscapes		3
	GES 311 - Weather and Climate	GES 110	3
	MATH 155 – Elementary Calculus I	MATH 106 or placement in Math 150,155, or 151	4
	PHYS 111 – Basic Physics I	MATH 106, MATH 150, MATH 151, MATH 155 or placement in Math 151	4
	PHYS 112 – Basic Physics II	PHYS 111	4
	STAT 350 - Statistics w Application in Biological Sciences	Math 150, Math 151, or MATH 155	4
	GENERAL EDUCATION REQUIREMENT COURSES		
	PSYC 100 - Introduction to Psychology (SS GEP)		4
	PSYC 210 - Psychology of Learning (SS GEP)	PSYC 100	3
	EDUCATION COURSES		
	EDUC 310 - Inquiry into Education (SS GEP)		3
	EDUC 311 - Psychological Foundations of Education		3
	EDUC 388 - Inclusion and Instruction	dept consent	3
	EDUC 412 - Analysis of Teaching and Learning	EDUC 310, EDUC 311, dept consent (2.75 GPA)	3
	EDUC 410 - Teaching Reading in the Content Area I	dept consent, EDUC 412	3
	EDUC 411 - Teaching Reading in the Content Area II (WI)	EDUC 410, dept consent	3
	EDUC 427 - Science in the Secondary School	EDUC 412, dept consent, co-enroll in EDUC 411	3
	EDUC 456 - Student Teaching in Secondary Schools	dept consent, co-enroll in EDUC 457	10
	EDUC 457 - Secondary Internship Seminar	dept consent	2

Bachelor of Arts in Biology Education (BIOE) Requirements

Important Notes:

1) **Students must earn a "C" or better in all major courses AND course prerequisites.**
2) **At least half of the required BIOL courses and electives must be completed in residence: for the BIOE major at least five of nine BIOL classes must be taken at UMBC.**
3) **BIOL 141, BIOL 142 and BIOL 302 are considered an academic sequence. Once you pass BIOL 302 you may not go back and repeat BIOL 141 or BIOL 142.**
4) **The BIOE major contains three social science GEPs built into the requirements (PSYC 100, PSYC 210, and EDUC 310). In addition, EDUC 411k is a writing intensive course.**
5) **BIOL 497H, 499, and Lab classes may NOT be used to fulfill the BIOL 4XX Elective. The BIOL 4XX elective class must be taken at UMBC.**
6) **Courses equivalent to EDUC 310, EDUC 311 and EDUC 388 may be taken elsewhere, but EDUC 412 and beyond must be taken at UMBC.**
7) **Before enrolling in EDUC 412, students must complete an 'Application to Program' form from the Education department and must have a GPA of 2.75 or greater.**
8) **Before students can participate in field teaching, they must complete an 'Application to Internship' form from the Education department. Students apply in the Spring semester before their teaching; teaching begins in the Fall semester, but students register for EDUC 456 only in the following Spring semester.**
9) **Students may not pursue both a BIOE and BIOL degree since the BIOE degree contains the BIOL curriculum within it.**
10) **Students who are BIOC (Biochemistry and Molecular Biology) majors who wish to also pursue a BIOE degree may use Core BIOL, CHEM, MATH and PHYS courses from the BIOC major towards the BIOE degree, but MUST take separate electives for the two degrees (ie., no 'double-dipping for the electives). Please note, the university requires students taking two different Bachelor's degrees (like the BA and BS) to take a total of 150 credits.**
11) **Under exceptional circumstances, the Department may waive or alter a BIOL major 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: https://biology.umbc.edu/undergrad/forms-links/.**
12) **The Biological Sciences Department evaluates completion of major requirements based on COURSES completed, not CREDITS completed, because equivalent courses taken elsewhere may not be the same number of credits as the UMBC course they replace.**